IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION
Civil Action No. 5:12-cv-289-BO

STATE FARM FIRE AND CASUALTY COMPANY as subrogee of CHRISTOPHER TAYLOR,	)	
Plaintiffs,	)	
	)	**PRE-TRIAL ORDER**
v.	)	Local Civil Rule 16.1(d)
LOUISIANA PACIFIC CORPORATION,	)	Date of Conference: March 31, 2014
Defendant.	)	

Appearances: L. Skye MacLeod, Stephen R. Paul, and Patrick M. Anders, The Law Offices of Stephen R. Paul, PLCC, Chapel Hill, North Carolina for Plaintiffs;

Nathaniel C. Parker and L. Neal Ellis, Jr., Ellis & Parker, PLLC, Wake Forest, North Carolina, and George Murphy, Vinson & Elkins, Houston, Texas for Defendant

I. STIPULATIONS.

A. It is stipulated that all parties are properly before the Court.

B. It is stipulated that the Court has jurisdiction over the parties and the subject matter of this action.

C. It is stipulated that venue is proper in this Court.

D. It is stipulated that all parties have been correctly designated.

E. It is stipulated that there is no question as to misjoinder or nonjoinder of parties.

F. It is stipulated that there are no issues as to capacity of the parties.

G. It is stipulated that this case is governed by the substantive law of the State of North Carolina.

H. All stipulations, contentions, factual issues, legal issues, designations and objections herein are presented without prejudice to the positions taken by any party in pending motions or subsequent motions in limine or to their objections noted herein. The parties reserve their rights to supplement or modify their objections based on rulings on such motions or on proffers for the admissibility of evidence. In addition, the parties reserve their rights to make objections not included in this Pretrial Order in motions in limine to be filed.

I. It is stipulated that to the extent technically feasible, the parties will exclude the reading of objections when deposition testimony is read or presented to the jury.

J. It is stipulated that each party reserves the right to offer at trial any testimony and exhibits designated by the adversary, and the right to use counter-designations as affirmative designations and vice versa.

K. It is stipulated that parties are not bound at trial to call any witness or use or offer any deposition testimony or exhibit designated by that party herein. Each party reserves the right to object to any testimony or exhibit designated by it herein when offered at trial, in whole or in part, by the other party.

L. Facts:

1. It is stipulated that Plaintiff State Farm Fire and Casualty Company ("State Farm") is an insurance Company authorized to do business in the State of North Carolina.

2. It is stipulated that Christopher Taylor is an owner of the home located at 190 Cedar Valley Lane, Louisburg, Franklin County, North Carolina ("Taylor Home" or "Taylor House").

3. It is stipulated that Louisiana-Pacific Corporation ("LP") manufactures a radiant barrier product for use in residential structures called LP TechShield Radiant Barrier ("TechShield").

4. It is stipulated that on August 29, 2011, Plaintiff State Farm Fire and Casualty Company insured the Taylor Home), under a policy of homeowners insurance.

5. It is stipulated and agreed that photocopies of exhibits may, if otherwise admissible, be received into evidence in lieu of the original of these documents or photographs.

II. CONTENTIONS.

A. Plaintiffs:

1. Factual Issues:

a. LP has admitted that the roof structure of the Taylor Home was constructed with TechShield.

b. In August 2008, Christopher Taylor purchased LP's TechShield product from Builders' FirstSource to use in the new construction as the roof decking of his home. TechShield was installed by a roofing subcontractor hired by the general contractor CBT Management, LLC. The Taylor Home was completed in June 2009.

c. The TechShield was installed properly.

d. On August 29, 2011 the exterior chimney cap of the wood burning stove on the far right hand side of the Taylor Home was struck by lightning.

e. The electrical energy from the lightning strike traveled through the metal chimney cap to the TechShield. The TechShield was energized by electrical energy from the lightning strike causing a fire to ignite in the Taylor Home.

f. LP has admitted that TechShield incorporates a composite of aluminum foil and kraft paper, which is laminated to oriented strand board ("OSB") by a continuous resin glue line. LP has admitted that conventional oriented strand board ("OSB") does not incorporate a laminate of aluminum foil and kraft paper. LP has admitted that aluminum foil is conductive of electricity.

g. The TechShield was electrically connected to the Chimney cap and the grounded dryer vent. All parties agree that the primary path to ground of the electrical energy from the lightning strike was from the metal chimney cap, across the TechShield radiant barrier sheathing, and to the dryer vent on the left hand side of the Taylor Home.

h. LP has admitted that the aluminum foil laminate component of TechShield is 0.0018 inches in thickness. The aluminum foil is too thin to sustain electrical energy in small amounts, much less electrical energy from a lightning strike, without melting or ablating with the unreasonably dangerous and increased risk of igniting nearby combustibles.

i. All parties agree that the area of origin of the fire within the Taylor Home was within the Taylor Home's roof decking, as designated in Deposition Exhibit No. 59.

j. LP has admitted that it did not conduct or commission studies on whether the use of TechShield increases the risk of a structure catching fire when energized by lightning prior to introducing TechShield into the stream of commerce.

k. LP has admitted that it did not conduct or commission studies on whether the use of TechShield increases the risk of surrounding combustibles catching fire when energized by lightning prior to introducing TechShield into the stream of commerce.

l. All parties agree that the electrical system in the Taylor home, though energized by electrical energy from the lightning strike, was not the cause of the fire.

m. Defendant's TechShield melted and ablated causing a fire in the Taylor Home.

n. Defendant's TechShield radiant barrier product creates an unreasonable danger of fire when exposed to electrical energy and created an increased risk of fire hazard in the Taylor Home.

o. Defendant was negligent in the design of the TechShield radiant barrier product, in that the aluminum foil is too thin, melts through resistive heating and/or ablates when energized by electricity, is known to be directly connected to easily ignited combustible materials, serves as a down conductor, serves as a path to ground for electrical energy, is designed to be connected to grounded systems within a home, and as part of the roof structure is intended to be placed in the highest and most exposed portion of a home.

p. Defendant failed to properly test, examine and study the TechShield radiant barrier product when energized by electricity in any amount prior to placing it into the stream of commerce.

q. Defendant negligently failed to warn users, including Christopher Taylor, of defects inherent in the design of its TechShield radiant barrier product.

r. Defendant breached implied warranties of merchantability in the sale of its TechShield radiant barrier product to Christopher Taylor.

s. Defendant breached implied warranties of fitness for the particular purpose of roof sheathing in the sale of its TechShield radiant barrier product to Christopher Taylor.

t. As a result of the fire on August 29, 2011, the Taylor Home and personal property were damaged.

u. At the time of the fire, Plaintiff State Farm Fire and Casualty Company insured the residence owned by Christopher Taylor, located at 190 Cedar Valley Lane, Louisburg, North Carolina ("the Taylor Home"), under a policy of homeowners insurance.

v. As a result of the fire on August 29, 2011, Plaintiff State Farm Fire and Casualty Company caused payments to be issued to or on behalf of Christopher Taylor to indemnify losses caused by the fire in the amount of $157,545.79.

w. As Christopher Taylor's homeowners insurer, Plaintiff State Farm Fire and Casualty Company, is subrogated for damages caused by the fire of August 29, 2011.

2. Legal Issues:

a. Whether Defendant's TechShield radiant barrier product was unreasonably dangerous creating an increased risk of hazard when exposed to electrical energy?

b. Whether Defendant negligently designed LP TechShield?

c. Whether Defendant failed to warn the Taylors of the dangers of TechShield?

d. Whether Defendant failed to properly instruct the Taylors on installation of TechShield?

e. Whether the Defendant breached an express warranty to the Taylors?

f. Whether Defendant breach implied warranties to the Taylors?

g. What amount of damages are Plaintiffs entitled to recover from Defendant as a result of the fire of August 29, 2011?

B. Defendant:

Defendant states the following contentions as to the facts, factual issues and legal issues:

A. Facts:

Defendant states the following contentions as to the facts:

1. Louisiana-Pacific Corporation ("LP") is a building materials manufacturer registered to do business and doing business in North Carolina.

2. LP is the manufacturer of a radiant barrier sheathing product called TechShield. TechShield is designed to radiate heat from the sun away from a home's living space in summer and retain heat within the living space during winter by adhering an aluminum sheet to the underside of roof sheathing panels. LP does not sell TechShield directly to consumers, but sells TechShield to third party distributers, who sell TechShield to retailers, who in turn sell TechShield to consumers. LP publishes installation instructions, material safety data sheet, and warranty information for TechShield on its website. LP provides a 20-year limited warranty for TechShield, which expressly excludes liability for incidental, special, indirect or consequential damages, including damage to property. The warranty requires notification to LP within 30 days of discovering any product non-conformity.

3. Taylor is a licensed general contractor in North Carolina. Taylor was the general contractor for the Taylor House. Taylor selected TechShield for installation in the Taylor House. Taylor failed to review the installation instructions, material safety data sheet, or warranty for TechShield when he researched TechShield on the internet prior to selecting it for the Taylor Home. Taylor purchased TechShield from

Builder's First Source, a building supply retailer. Taylor did not purchase TechShield from LP. Taylor hired subcontractors to install TechShield in the Taylor House. At no time did Taylor review the installation instructions, material safety data sheet or warranty for TechShield prior or during construction of the Taylor House. The Taylor House contains metal nails and other metal components in its roof structure. TechShield was a component part of the roof system and was integrated with all other building materials into the Taylor House. Taylor completed the Taylor House in July 2009.

4. On August 29, 2011, the Taylor House was struck by lightning and a fire ensued.

5. TechShield was not dangerous or defective. LP did not fail to adequately design, test or examine TechShield to ensure that it met minimum standards of durability, safety, and reliability. LP did not know and should not have known that TechShield was dangerous, not safe, or unfit for its intended use when it manufactured the TechShield installed in the Taylor House. LP did not put TechShield into the stream of commerce when it knew or should have known that it was likely to cause fires. LP did not fail to give Taylor proper and adequate warning of the unsafe and/or defective condition of the TechShield installed in the Taylor House. LP did not fail to properly warn, instruct and/or advise sellers, consumers or users that TechShield was susceptible to damage from direct or indirect lightning strikes. LP did not fail to incorporate adequate warnings in its product literature.

6. The express warranty for TechShield was not addressed to Taylor. Moreover, LP's liability under the 20-year warranty for TechShield excludes incidental, special, indirect, or consequential damages, including damage to the Taylor House. Taylor

failed to notify LP within 30 days of discovery of alleged non-conformity with the warranty.

7. The fire at the Taylor House was caused by an Act of God. Lightning is a well-known and established cause of residential structure fires, and has resulted in the home fires long before Techshield or any radiant barrier products were developed. There is no way to determine whether the Taylor home would have experienced a fire if Techshield were not present. The lightning that struck the Taylor House on August 29, 2011 could have caused a fire whether or not TechShield had been present in the roof structure.

8. After the fire, but prior to notifying LP of any claims against it, Taylor allowed materials from the home in the area in which the fire is alleged to have occurred , including TechShield, to be improperly stored, damaged and removed from the home and disposed of prior to inspection by LP. Taylor failed to preserve important evidence that has hindered LP's ability to investigate and defend itself in this proceeding.

9. State Farm hired Robert McGraw as its fire investigator. Before Mr. McGraw visited the site of the fire State Farm supplied him with materials authored by State Farm expert Ronald Simmons setting forth a theory connecting radiant barrier materials to fires caused by lightning strikes.

10. McGraw has never testified as an expert about fire cause or origin in a residential home fire involving lightning. Because of the fire damage and removal of material before McGraw and other experts had a chance to examine it, the experts were not

able to identify a point of origin of the fire. McGraw is also unable to identify the material that first ignited.

11. State Farm's expert Simmons is not qualified to testify as an expert witness on the subject of lightning induced fires and radiant barriers. Among other things, Simmons never visited the site of the fire, never talked with the homeowner about the fire; never took photos of the site, but instead conducted his research using internet websites.

12. Testing by State Farm's expert Simmons in no way provides a basis for a conclusion that Defendant's TechShield caused the fire in the Taylor house. It does not replicate a lightning strike. The conditions governing a lightning strike are vastly different including among other things the duration of the strike. Simmons' testing does not comply with any standards.

13. Simmons' report submitted during discovery is replete with both factual errors and errors which ignore fundamental laws of physics. Simmons' opinion that radiant barrier increases the risk of fire in homes that are struck by lightning is based on fabricated data and other information. Among other things, Simmons contends that he talked with fire professionals naming only a fire chief in Texas by the name of Billy Westerhausen. Chief Westerhausen denies ever having talked with Simmons.

14. Mr. Simmons' evidence shows: that houses with radiant barrier have been struck by lightning but no fire ensued; there have been houses with radiant barrier struck by lightning where the radiant barrier was not energized; there have been houses with radiant barrier struck by lightning where the radiant barrier was energized but no structure fire resulted; there have been houses struck by lightning with radiant barrier

and the house caught fire but it was determined that the cause of the fire was something other than radiant barrier; there have been houses without any radiant barrier that catch fire from lightning strikes. Mr. Simmons is unable to identify an adequate alternative design.

15. Mr. McGraw's evidence shows: that although he has investigated about 400 fires, this one was the first occasion in which radiant barrier was present; that he has investigated dozens of home fires caused by lightning where radiant barrier was not present.

16. The evidence and opinions of the Defendant LP's experts, Mark Goodson and Dennis Scardino show: that there is no support for the suggestion that TechShield increases the likelihood of lightning strikes to homes; that there is no support for the suggestion that TechShield assures that a fire will result in the eventuality of a lightning strike; that the presence of radiant barrier does not make it any more likely that a fire will result if a house is struck by lightning; that houses struck by lightning may result in fire with or without the presence of radiant barrier and that lightning is a recognized source of ignition for fires in homes; that comparisons of ignitability do not show a link between radiant barrier and increased-risk of lightning-induced fires; that a product is not hazardous or defective simply because it cannot withstand a lightning strike; that the power of lightning can cause any building product to fail or catch fire; that aluminum is essential to the function of radiant barrier and is used in a variety of building products.

B. Factual Issues:

1. Negligence/Failure to Warn or Instruct/Inadequate Design (Claim 1)

a. Has Plaintiff presented evidence that the TechShield installed in the Taylor House was defective when it left LP's plant?

b. Has Plaintiff presented evidence that LP was negligent in design of TechShield?

c. Has Plaintiff presented evidence that LP was negligent in the selection of materials used in manufacturing TechShield?

d. Has Plaintiff presented evidence that LP was negligent in the assembly process used in manufacturing TechShield?

e. Has Plaintiff presented evidence that LP was negligent in the inspection of materials used in manufacturing TechShield?

f. Did Taylor read the installation instructions or material safety data sheet for TechShield?

g. Would Taylor have read additional or different warnings for TechShield?

2. Breach of Express and Implied Warranties (Claim 2)

a. Did LP address the express warranty to Taylor?

b. If so, do the disclaimers, exclusions, modifications and limitations of remedy and liability contained in the express warranty exclude incidental, special, indirect, or consequential damages, including damage to the Taylor House?

c. Are Taylor's breach of warranty claims against LP barred, in whole or in part, for failure to give timely notice of the alleged breach?

B. Legal Issues:

1. Negligence/Failure to Warn or Instruct/Inadequate Design (Claim 1)

   a. Was the damage caused to the Taylor House directly and proximately caused by the superseding, intervening acts and conduct of others, thereby precluding plaintiff from recovery from defendant?

   b. Was the damage caused to the Taylor House directly and proximately caused by an Act of God?

   c. Was the damage caused to the Taylor House unforeseeable, caused by the unforeseeable acts of third parties, and/or caused by unrelated, unforeseeable and uncontrollable acts of nature?

   d. Were any and all acts performed by, and products designed and manufactured and/or distributed by LP at all times relevant to the Complaint in conformity with the state of the art and the applicable standards of care for the design and manufacture of such or similar products?

   e. Were any alleged damages to the Taylor House caused by the contributory negligent acts of Taylor and not any negligent acts by LP?

   f. Are Taylor's claims against LP barred, in whole or in part, by the doctrine of assumption of the risk?

   g. Did LP act reasonably in designing TechShield?

h. Did LP fail to adopt a practical, feasible, and otherwise reasonable alternative design?

i. Did LP unreasonably fail to provide an adequate warning or instruction that proximately caused Plaintiff's damage?

2. Breach of Express and Implied Warranties (Claim 2)

a. Does the economic loss rule limit LP's liability for damage to the Taylor House to the replacement cost of the damaged TechShield?

b. Should Taylor's claim for breach of implied warranty be dismissed because there is no privity between Taylor and LP?

c. Are Plaintiff's claims excluded by the terms of the warranty?

3. Are Plaintiff's claims barred in whole or in part by the applicable statutes of limitation?

4. Are Plaintiff's claims barred in whole or in part by the doctrines of laches, waiver and/or estoppel?

5. Are Plaintiff's claims barred in whole or in part by plaintiff's failure to mitigate damages?

6. Are Plaintiff's claims barred by plaintiff's alteration, modification, abuse and/or misuse of the defendant's product?

7. Should untimely disclosed reports and expert testimony of Plaintiff's undisclosed expert Thomas W. Eager, and untimely expert testimony from Plaintiffs previously disclosed experts J. Robert McGraw, Jr.,

and Ronald. D. Simmons be excluded for violation of Fed. R. Civ. P. 26(a)(2) and 37(c)(l) and the Court's Scheduling Order?

8. Should the reports and testimony of Plaintiff's purported expert witness, Ronald D. Simmons be excluded pursuant to Rule 7 of the Federal Rules of Civil Procedure, Local Civil Rule 7.1, EDNC, and Rule 702 of the Federal Rules of Evidence, for failing to satisfy the requirements for admissible expert testimony set forth by the U.S. Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 579-80 (1993)?
9. Should the reports and testimony of Plaintiff's purported expert witness, J. Rober McGraw, Jr. be excluded pursuant to Rule 7 of the Federal Rules of Civil Procedure, Local Civil Rule 7.1, EDNC, and Rule 702 of the Federal Rules of Evidence, for failing to satisfy the requirements for admissible expert testimony set forth by the U.S. Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 579-80 (1993)?
10. Are Plaintiff's claims barred because the damages were caused by generally recognized, substantially necessary inherent characteristics of the product?
11. Should Plaintiff be allowed to introduce for admission exhibits which it failed to provide to Defendant or describe with sufficient particularity for identification as required by Local Rule 16.1(c)(3)?

III. EXHIBITS

A. Plaintiffs

No.	PLAINTIFFS' EXHIBITS	DEFENDANT'S OBJECTIONS
1	Expert Report of J. Robert McGraw (with Attachments 1-8), 8/22/2012	Duplicative; hearsay; relevance
2	Supplemental and Amended Expert Report of J. Robert McGraw, 11/6/2012	Duplicative; hearsay; relevance; Untimely; Not properly designated
3	Photographs taken by J. Robert McGraw	Insufficient identification; foundation; authentication; relevance; no copy provided
4	File Materials of J. Robert McGraw	Insufficient identification; foundation; authentication; hearsay; relevance; self-serving; duplicative; no copy provided
5	Joint Inspection Sign-In Sheet, 10/21/2011	Foundation; authentication; relevance; no copy provided
6	Expert Report of Ronald D. Simmons, 8/29/2012	Duplicative; hearsay; relevance; Rule 702
7	Supplemental and Amended Expert Report of Ronald D. Simmons, 11/21/2012	Duplicative; hearsay; relevance; Rule 702; Untimely; Not properly designated
8	Photographs taken by Ronald D. Simmons	Insufficient identification; foundation; authentication; relevance; self-serving; no copy provided; rule 702
9	Video and Powerpoint by McDowell Owens	Foundation; authentication; relevance; self-serving; no copy provided; rule 702
10	File Materials of Ronald D. Simmons	Insufficient identification; foundation; authentication; hearsay; relevance; self-serving; duplicative; no copy provided; Rule 702
11	Expert Report of Gary Richetto, 10/13/2012	Duplicative; hearsay; relevance
12	File Materials of Gary Richetto	Insufficient identification; foundation; authentication; hearsay; relevance; self-serving; duplicative; no copy provided
13	Expert Report of Thomas Eagar, 11/19/2012	Duplicative; hearsay;

		relevance; Untimely; Not properly designated
14	Construction-Phase Photographs taken by Christopher and Rosaria Taylor	Insufficient identification; foundation; authentication; relevance; no copy provided
15	Post-Fire Photographs taken by Christopher and Rosaria Taylor	Insufficient identification; foundation; authentication; relevance; no copy provided
16	Photographs taken by Dennis J. Scardino	Insufficient identification; foundation; authentication; relevance; no copy provided
17	Photographs and SEM/EDX Test Results from 9/27/2012 Testing in Denton, TX	Insufficient identification; foundation; authentication; relevance; no copy provided
18	Physical Evidence collected during Joint Site Examination on October 21, 2011	Insufficient identification; foundation; authentication; relevance; no copy provided
19	Kitchen Aid Clothes Dryer with corrugated exhaust duct	Foundation; authentication; relevance
20	Chimney vent section from above the roof	Foundation; authentication; relevance
21	4 Sections of purple colored poly vent material	Foundation; authentication; relevance
22	Fire alarm branch conductors (red/green marks)	Foundation; authentication; relevance
23	Fire alarm branch circuit conductors (blue mark)	Foundation; authentication; relevance
24	Roof sheathing at dryer vent	Foundation; authentication; relevance
25	Roof sheathing at fireplace chimney	Foundation; authentication; relevance
26	2 pieces of damaged roof sheathing (recovered October 22, 2011)	Foundation; authentication; relevance
27	(See Evidence Control Form provided by Element Analytical, PLLC)	Foundation; authentication; relevance; no copy provided
28	Evidence Control Form, Element Analytical, 10/21-22/2011	Foundation; authentication; relevance
29	RIMA International, 7 Important Safety Tips for the Installation of Radiant Barrier, Reflective Insulation, or IRCCs, Technical Bulletin #108, 06/11	Foundation; authentication; relevance
30	LP TechShield Radiant Barrier August 2005 Installation Instructions	
31	LP TechShield Radiant Barrier 2009 Installation Instructions	
32	LP TechShield Radiant Barrier Sheathing 2007 MSDS	
33	Louisiana Pacific/Radiant Barrier EDAX ZAF	

	Quantification of Aluminum Foil	
34	Test Report – Emittance Measurement According to ASTM C1371, 11/10/2011	
35	Test Report – Emittance Test According to ASTM E408, 4/16/2010	
36	Final Statement of Loss, 6/26/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided; best evidence rule; spoliation
37	CRC Restoration/Service/Remodel Estimate, 4/9/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
38	CRC Restoration/Service/Remodel Estimate, 3/29/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
39	CRC Labor and Materials Report, 3/29/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
40	CRC Restoration/Service/Remodel Estimate, 1/9/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
41	CRC Price List Variation, Labor and Materials Report, 1/9/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
42	CRC Restoration/Service/Remodel Estimate, 12/8/2011	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
43	CRC Price List Variation, Labor and Materials Report, 3/29/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
44	Additional Living Expense Worksheet, 6/26/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
45	ALE Receipts, 8/2011	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
46	ALE Receipts, 9/2011	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
47	ALE Receipts, 10/2011	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
48	Marriott ExecuStay Invoices, 2/2/12, 1/3/12, 12/2/11, 11/2/11, 10/4/11 (2)	Insufficient identification; foundation; authentication; hearsay; relevance; self-serving; no copy provided

49	Mileage, 8/29/2011-12/25/2011	Insufficient identification; foundation; authentication; hearsay; relevance; self-serving; no copy provided
50	All Invoices produced by Plaintiffs	Insufficient identification; foundation; authentication; hearsay; relevance; self-serving; no copy provided
51	Itemized Personal property Loss prepared by the Taylors	Insufficient identification; foundation; authentication; hearsay; relevance; self-serving; no copy provided; best evidence rule; spoliation
52	Contents Inventory Summary prepared by State Farm, 6/14/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided; best evidence rule; spoliation
53	Contents Inventory Summary prepared by State Farm, 4/13/2012	Foundation; authentication; hearsay; relevance; self-serving; no copy provided; best evidence rule; spoliation
54	CRDN of Central and Eastern NC, Garment & Textile Restoration, 9/1/2011	Foundation; authentication; hearsay; relevance; self-serving; no copy provided; best evidence rule; spoliation
55	Franklin County Planning Permit obtained by CRC, 11/4/2011	Foundation; authentication; hearsay; relevance; self-serving; no copy provided
56	Uniform Deposition Exhibits:	
57	No. 3 Plaintiff's Responses to First Set Interrogatories/Request for Production	Relevance; best evidence rule
58	No. 4 Photograph of Exterior of Taylor Home	
59	No. 5 Sketch 1 of Taylor Home	
60	No. 6 Photograph of Exterior of Taylor Home	
61	No. 7 Photograph of Exterior of Taylor Home	
62	No. 8 Photograph of Interior of Taylor Home	
63	No. 9 Photograph of Interior of Taylor Home	
64	No. 12 LP TechShield Material Safety Data Sheet (MSDS)	
65	No. 13 LP TechShield 2005 Installation Instructions	
66	No. 14 LP TechShield 2009 Installation Instructions	
67	No. 17 Element Analytical, PLLC Report dated 8/22/2012 (pp. 1-7 of 24)	
68	No. 18 Photograph of Area of Fire Damage dated 8/30/2011	
69	No. 19 Photograph of Area of Fire Damage dated 8/31/2011	
70	No. 20 Photograph of Area of Fire Damage dated 9/9/2011	
71	No. 21 Photograph of Fire Debris dated 8/30/2011	

72	No. 22 Photograph of Fire Debris dated 8/30/2011	
73	No. 24 Cary Reconstruction Company, Page 3 of Report	Foundation; authentication; hearsay; relevance; self-serving; best evidence rule
74	No. 25 CRC Materials Report, Page 12 of Report	Foundation; authentication; hearsay; relevance; self-serving; best evidence rule
75	No. 26 Claim # 33D493449 item/description list	Foundation; authentication; hearsay; relevance; self-serving; best evidence rule; spoliation
76	No. 30 Summary Background Information for Taylor Fire	Foundation; authentication; hearsay; relevance; self-serving; duplicative
77	No. 31 J. Robert McGraw Expert Report with McGraw handwritten notes	Duplicative; hearsay; relevance; self-serving
78	No. 32 McGraw Report, Attachment 5, Bunn Fire Dept. Report	
79	No. 33 McGraw Supplemental and Amended Report, 11/6/2012; Construction-Phase Color Photographs taken by the Taylors (91)	Duplicative; hearsay; relevance; foundation; authentication
80	No. 34 McGraw Report, Attachment 7, LightningTrax Report	
81	No. 35 McGraw Report, Attachment 6, STRIKEnet Report	
82	No. 36 Rob McGraw, Element Analytical, File Materials	Foundation; authentication; hearsay; relevance; self-serving; duplicative;
83	No. 37 Ronald D. Simmons Expert Report with Simmons handwritten notes	Duplicative; hearsay; relevance; self-serving; Rule 702
84	No. 41 Ronald D. Simmons Amended & Supplemental Report with Simmons handwritten notes, 11/21/2012	Duplicative; hearsay; relevance; self-serving; Rule 702
85	No. 43 "A Strange New Source of Structure Ignition", ISFI 2012 Publication by Ronald D. Simmons, Eric M. Benstock, and McDowell Owens Eng.	Duplicative; hearsay; relevance; self-serving; Rule 702
86	No. 44 "Reflective Radiant Barriers," Fire Findings Summer 2009, Vol. 17, No. 3, by Ronald D. Simmons, Eric Benstock, Rick Bonyata, and Nestor Camara	Duplicative; hearsay; relevance; self-serving; Rule 702
87	No. 45 "Reflective Radiant Barriers, Good for Energy Savings – Bad for Fire Safety" by Ronald D. Simmons, Eric M. Benstock, and Nestor J. Camara	Duplicative; hearsay; relevance; self-serving; Rule 702
88	No. 46 "Reflective Radiant Barriers – Energy Saving Wonder or Disaster Waiting to Happen?", Ron Simmons, Nestor Camara, Eric Benstock, Rick Bonyata	Duplicative; hearsay; relevance; self-serving; Rule 702

89	No. 47 "Unusual Behavior of Radiant Barrier Materials in Fire Causation", by Ronald D. Simmons, Eric M. Benstock, and McDowell Owens Engineering	Duplicative; hearsay; relevance; self-serving; Rule 702
90	No. 48 Ronald Simmons File Material	Foundation; authentication; hearsay; relevance; self-serving; duplicative; Rule 702
91	No. 49 McDowell Owens Video and Powerpoint Excerpt	Foundation; authentication; relevance; self-serving; Rule 702
92	No. 56 Scardino Report, Appendix J, Franklin County Incident Report/911 Call	Duplicative
93	No. 58 Post-Fire Photographs (5) of Taylor Home	Foundation; authentication; relevance;
94	No. 59 Scardino File Material, Construction-Phase Photographs (3) of Taylor Home with Scardino handwritten notes	Duplicative; relevance
95	Expert Report of Dennis J. Scardino, 9/28/2012	
96	File Materials of Dennis J. Scardino	Insufficient identification; foundation; authentication; hearsay; relevance; duplicative; no copy provided
97	Expert Report of Mark Goodson, Undated	
98	File Materials of Mark Goodson	Insufficient identification; foundation; authentication; hearsay; relevance; duplicative; no copy provided
99	Expert Report of Timothy P. Rhoades, 12/17/2012	
100	File Materials of Timothy P. Rhoades	Insufficient identification; foundation; authentication; hearsay; relevance; duplicative; no copy provided
101	PS2-10 Performance Standard for Wood-Based Structural-use Panels, 6/1/2011	Relevance
102	LP TechShield Radiant Barrier 2010 Installation Instructions	
103	Defendant's Rule 26(a)(1) Initial Disclosures	Relevance; duplicative
104	Uniform Deposition Exhibits:	
105	No. 50 Dennis J. Scardino, ESI Fire Analysis Report, 9/28/2012	
106	No. 51 Scardino Report, Appendix A, Reviewed Materials	
107	No. 52 Scardino Report, Appendix B, Dennis J. Scardino CV	
108	No. 53 Scardino Report, Appendix C, Dennis J. Scardino Testimony List	
109	No. 54 Scardino Report, Appendix D, ESI Fee Schedule	
110	No. 55 Scardino File Material, Handwritten ESI Diagram	

	and Notes	
111	No. 60 Scardino Report, Appendix E, with Scardino handwritten notes	
112	No. 61 Scardino Report, Appendix Q, Intertek Test Report, October 28, 2011	
113	No. 62 Scardino Report, Appendix I, Vaisala, Inc. STRIKEnet Report	
114	No. 63 Mark Goodson File Material	Relevance; duplicative
115	No. 64 9/27/2012 Testing, Denton, TX: Photographs of Electrical Conductors	Foundation; authentication Relevance; best evidence rule
116	No. 65 Goodson handwritten notes and questions during Simmons Deposition	Foundation; authentication Relevance;
117	No. 66 Mark E. Goodson Expert Report	
118	No. 67 Goodson Report, CV of Mark E. Goodson	
119	No. 68 Goodson Report, Publications of Mark E. Goodson	
120	No. 69 Goodson Report, Testimony since 1995 of Mark E. Goodson	
121	No. 71 R&D Services Test Report RD1026, ASTM E408, 4/6/2010	
122	No. 72 R&D Services Test Report RD11572, ASTM C1371, 11/10/2011	
123	No. 74 9/27/2012 Testing – Multi-focus Photographs of Electrical Conductor 25	
124	No. 75 9/27/2012 Testing – Photographs of Electrical Conductor 25	
125	No. 76 9/27/2012 Testing – Photographs of Electrical Conductor 25 (post clean)	
126	No. 77 9/27/2012 Testing – Photograph of Electrical Conductor 25 (BMP)	
127	No. 78 9/27/2012 Testing – EDAX of Electrical Conductor 25/25(a)	
128	No. 79 9/27/2012 Testing – Multi-Focus Photographs of Electrical Conductor 26	
129	No. 80 9/27/2012 Testing – Photographs Electrical Conductor 26	
130	No. 81 9/27/2012 Testing – Photographs Electrical Conductor 26 (post clean)	
131	No. 82 9/27/2012 Testing – Photograph Electrical Conductor 26 (BMP)	
132	No. 83 9/27/2012 Testing – EDAX of Electrical Conductor 26/26(a)	
133	No. 84 9/27/2012 Testing – Multi-Focus Photograph of Electrical Conduction 27(a)	
134	No. 85 9/27/2012 Testing – Photographs of Electrical Conductor 27	

135	No. 86 9/27/2012 Testing – Photographs of Electrical Conductor 27 (post clean)	
136	No. 87 9/27/2012 Testing – Photograph Electrical Conductor 27 (BMP)	
137	No. 88 9/27/2012 Testing – EDAX of Electrical Conductor 26/27(a)	
138	No. 89 9/27/2012 Testing – Photographs of Electrical Conductor 18-39	
139	No. 90 9/27/2012 Testing – Electrical Conductor 18-39 images/EDS location	
140	No. 91 9/27/2012 Testing – EDAX of Electrical Conductor 18-39	
141	No. 100 Rhoades File Material	Insufficient identification; foundation; authentication; hearsay; relevance; duplicative; no copy provided
142	No. 101 Rhoades, 10/11/2012 Invoice for Work and Time Spent	
143	No. 102 Rhoades, 12/5/2012 Invoice for Work and Time Spent	
144	No. 103 Defendant LP's Rule 26(a)(2) Disclosure of Expert Testimony	
145	No. 104 Defendant LP's Rule 26(a)(2) Supplemental Disclosure of Expert Testimony	
146	No. 105 Timothy P. Rhoades Expert Report, 12/17/2012	
147	No. 106 Rhoades Report, Attachment A, CV of Timothy P. Rhoades	
148	No. 110 Rhoades Report, Attachment B, Prior Expert Testimony	

B. Defendant

No.	**DEFENDANT'S EXHIBITS**	**PLAINTIFFS' OBJECTIONS**
149	Installation Instructions for TechShield	Fed. R.E. 402. Specifically, Plaintiff objects to the use of any TechShield installation instructions that post-date building of the Taylor home (post-2009).
150	Fire Report	
151	Lightning Reports	
152	Invoice from Builders First Source	
153	Surface burn tests	F.R.C.P. Rule 37. These items though subject to Rule

		26(a) disclosure were never previously identified as potential exhibit nor were copies ever produced; insufficient identification; foundation; authentication.
154	TechShield exemplars	
155	Photographs of packaging and labels	
156	Dennis J. Scardino's Curriculum Vitae	
157	Qudra-Fire® 4300 Wood Stove Series Installation, Operation & Maintenance Instructions 250-7061C 12/10/2004	Fed. R.E. 402 and 403; foundation; authentication.
158	Selkirk Canada Corporation "SuperVent Model JSC Insulated Stainless Chimney", JSC001-ER&B 3490 – 06/07	Fed. R.E. 402 and 403; foundation; authentication.
159	Selkirk Canada Corporation "U.S. Installation Instructions, Warranty and Maintenance Guide", RM19956-3, 10/09	Fed. R.E. 402 and 403; foundation; authentication.
160	National Fire Protection Administration (NFPA) "Lightning Fires and Lightning Strikes" data sheet	
161	National Fire Protection Administration (NFPA) "Lightning Fires and Lightning Strikes" by BenEvarts, December, 2010, NCFA No. USS51	
162	National Fire Protection Administration (NFPA) "Home and Non-Home Structure Fires Causedby Lightning Fire Reported to Local Fire Departments", by Ben Evarts, July 2012	
163	NFPA 921, 2011, 2008, 2004, 2001, 1998, 1995, and 1992 (first) Edition, © 2011, 2008, 2004, 2001, 1998, 1995, and 1992 National Fire Protection) Association	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce these documents; insufficient identification; foundation; authentication.
164	Ignition Handbook © 2003 by Vytenis Babrauskas ISBN 0-9728111-3-3	
165	ESI's October 21, 2011 Scene Examination Photographs	
166	NOAA National Severe Storms Laboratory, http://www.nssl.noaa.gov/primer/lightning/ltg_damage.html	
167	National Weather Service, Lightning Safety, http://www.lightningsafety.noaa.gov/overview.htm	
168	Underground Weather Data for KLZH Airport for August 29, 2011	
169	Underground Weather Data for KRWI Airport for August 29, 2011	

170	Section 3, Chapter 3 "Lightning Protection Systems", revised by John M. Caloggero, NFPA Fire Protection Handbook, 18th Edition	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce this document; insufficient identification; foundation; authentication.
171	U.S. Department of Energy "Radiant Barrier Fact Sheet"	
172	U.S. Department of Energy, Building Technologies Program, "Guide to Determining Climate Regions by County, August 2010 PNNL-17211	Fed. R.E. 402 and 403; insufficient identification; foundation; authentication.
173	"Compliance Guide for Homes in North Carolina", 2012 North Carolina Energy Conservation Code (NCECC)	Fed. R.E. 402 and 403; insufficient identification; foundation; authentication.
174	"The Investigation of Fires", by Roblee and McKechnie, ©1981 by Prentice-Hall, Inc.	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce this document; insufficient identification; foundation; authentication.
175	"Fires and Explosions Determining Cause and Origin", by Kennedy, ©1985 by Investigations Institute	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce this document; insufficient identification; foundation;authentication.
176	"Kirk's Fire Investigation, Second Edition", by John D. DeHaan, ©1969, 1983 by John Wiley & Sons, Inc.	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce this document; insufficient identification; foundation;authentication.
177	"Kirk's Fire Investigation, Fifth Edition", by John D. DeHaan, Ph.D., ©2002 by Pearson Education, Inc.	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce this document; insufficient identification; foundation; authentication.
178	"Fire Protection Handbook, Fifteenth Edition", ©1981 National Fire Protection Association, Section 11, Chapter 12, "Lightning Protection Systems", Revised by Davis	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce this document; insufficient identification; foundation; authentication.
179	"Lightning Fires", U.S. Fire Administration Topical Fire Research Series, Volume 2, Issue 6, August 2001 (Rev. March 2002)	

180	"Lightning Sparks Concern for Insurance Industry; Homeowners Claims Rise Sharply Over Last Five Years", Insurance Information Institute, March 31, 2010	
181	Area of Origin Diagram prepared by Dennis Scardino	
182	ANSI/IEEE C.62 series of impulse test standards	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce this document; insufficient identification; foundation; authentication.
183	Uman, *Lightning*, 1969	Fed. R.E. 402 and 403; insufficient identification; foundation; authentication.
184	Uman and Rakok, *Lightning,Physics and Effects*, 2007	F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures as Defendant did not produce this document; insufficient identification; foundation; authentication.
185	Exhibits contained in Ex. E to ESI report	
186	Deposition Exhibits:	
187	No. 4 Photo/exterior house	
188	No. 5 Sketch 1 (4 pp.)	
189	No. 6 Photo/exterior house	
190	No. 7 Photo/exterior house	
191	No. 8 Photo/interior house	
192	No. 9 Photo/interior house	
193	No. 11 NC Licensing Board Qualifier List	
194	No. 12 LP TechShield Material Safety Data Sheet (5 pp.)	
195	No. 15 LP TechShield Transferable Limited Warranty (2 pp.)	
196	No. 16 Report/Bunn Fire Department	
197	No. 17 Report/Element Analytical, PLLC (pp. 1-7 of 24)	
198	No. 18 Photo	
199	No. 19 Photo	
200	No. 20 Photo	
201	No. 21 Photo	
202	No. 22 Photo	
203	No. 34 LightningTrax report (2 pp.)	
204	No. 35 STRIKEnet report (cover/26 pp.)	
205	No. 50 ESI Fire Analysis Report	
206	No. 51 Appendix A, Reviewed Materials	
207	No. 52 Appendix B, Dennis J. Scardino CV	

208	No. 57 Compliance Guide for Homes in NC	Fed. R.E. 402 and 403; insufficient identification; foundation; authentication.
209	No. 60 Appendix E, Identified Exhibits	
210	No. 61 Intertek Report October 28, 2011	
211	No. 62 Appendix I, Vaisala, Inc. STRIKEnet report	
212	No. 66 Exhibit B	
213	No. 67 CV, Mark E. Goodson PE	
214	No. 68 Publications, Mark E. Goodson PE	
215	No. 70 LP/Radiant Barrier Spc./EDAX ZAF Quantification	
216	No. 71 R&D Services Test Report RD10261	
217	No. 72 R&D Services Test Report RD11572	
218	No. 74 Photographs multi-focus 25 (a-e)	
219	No. 75 Photographs conductor 25 (01-03)	
220	No. 76 Photographs conductor 25 (post clean 01-04)	
221	No. 77 Photograph conductor 25 (BMP)	
222	No. 78 Conductor 25/25(a) control sample etc. (8 pp.)	
223	No. 79 Photographs multi-focus 26 (a-c)	
224	No. 80 Photographs conductor 26 (01-04)	
225	No. 81 Photographs conductor 26 (post clean 01-03)	
226	No. 82 Photograph conductor 26 (BMP)	
227	No. 83 Conductor 26/26(a) control sample etc. (4 pp.)	
228	No. 84 Photograph multi-focus 27(a)	
229	No. 85 Photographs conductor 27 (01-04)	
230	No. 86 Photographs conductor 27 (post clean 01-04)	
231	No. 87 Photograph conductor 27 (BMP)	
232	No. 88 Conductor 27/27(a) control sample etc. (4 pp.)	
233	No. 89 Photographs conductor 18-39 (a-e)	
234	No. 90 Conductor 18-39 images 1-9/EDS location e and e2	
235	No. 91 Conductor control samples 18-39 etc. (19 pp.)	
236	No. 105 Applied Safety Letter 12/17/12 to Ellis/Anthony	
237	No. 106 Applied Safety Attachment A	
238	No. 107 LP TechShield Installation Instructions	
239	No. 108 LP TechShield Installation Radiant Barrier	
240	CV, Tim Rhoades	

C. The Parties reserve the right to make additional objections to any undisclosed exhibit offered by the other Party, for impeachment, rebuttal or any other purpose, at trial.

IV. DESIGNATION OF PLEADINGS AND DISCOVERY MATERIALS

A. Plaintiffs

Document	Portion	Objection	Reason
Plaintiffs' First Set of Interrogatories	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and 27	ALL	Relevance
Plaintiffs' First Request for Admissions	1, 2, 5, 6, 7, 8, 9, 10, 11, 13, 14, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28	ALL	Relevance

Plaintiffs reserve the right to seek costs for proving at trial any Request for Admission for which Defendant failed to admit or deny or which was denied by Defendant, including 3, 4, 6, 9, 12, 15, 16, 21, 22, 23, 24, 25, 26, 27, and 28.

Deposition Witness	Beginning (page:line)	Ending (page:line)	Defendant's Grounds for Objection
Dennis Scardino	10:10	10:17	
	28:25	30:20	Speculation
	33:6	36:11	
	38:18	44:8	Calls for legal conclusion
	76:8	80:3	
	118:21	119:6	
	123:9	136:1	
	142:10	144:9	
	151:4	151:15	
	212:20	213:3	
	224:7	225:16	Relevance; hearsay
Mark Goodson	7:3	8:4	
	15:14	16:7	Relevance; hearsay; foundation
	21:9	22:3	
	25:14	26:21	Relevance
	28:5	28:12	
	31:21	32:10	
	33:16	33:25	
	37:23	40:13	
	50:11	51:8	
	51:22	53:2	
	56:16	60:15	

	61:8	62:4	
	64:5	64:22	Relevance; hearsay; foundation
	66:8	66:16	
	70:14	71:12	
	75:14	76:21	
	78:11	78:18	
	92:10	92:17	
	93:1	98:9	
	98:20	99:4	
	99:13	101:4	
	102:1	102:21	
	103:12	104:21	
	105:20	106:15	
	110:9	110:25	
	114:5	114:9	
	114:17	115:20	
	140:4	140:19	Mischaracterization of testimony; speculation
	140:22	140:25	
	145:14	146:13	
	147:12	148:16	
	150:5	150:14	Mischaracterization of testimony
	150:23	152:6	
	153:25	155:14	
	156:6	156:23	Relevance; foundation; speculation
	162:2	162:11	
	165:13	165:20	Relevance; foundation
	166:19	168:1	
	172:17	173:21	Relevance
	174:16	175:5	Relevance
	183:5	183:25	Relevance; foundation
	185:12	186:1	
	188:19	190:21	Relevance; foundation
	205:1	205:5	
Timothy Rhoades	4:23	5:1	
	5:23	6:2	
	6:13	6:25	Relevance
	9:5	16:17	
	16:20	17:15	
	17:23	20:6	18:3-18:16 Attorney Discussion; Privilege Issue
	20:11	21:5	
	21:9	26:13	
	27:22	29:14	29:5-29:14 Mischaracterization
	31:9	31:18	

	33:6	34:22	Relevance; Foundation; Mischaracterization
	35:3	51:11	35:3-37:13 - Relevance; Foundation; Mischaracterization 39:15-40:2 - Speculation; Relevance; Foundation 40:4-40:15 - Relevance; Foundation 44:12-44:15 - Speculation; Mischaracterization; Foundation
	52:15	52:25	Speculation
	54:11	63:12	
	64:4	69:5	
	69:11	69:16	
	70:7	70:18	
	73:2	74:18	
	76:7	76:25	
	78:4	80:1	78:21-79:21 - Foundation; Assumes Facts Not in Evidence
	80:9	80:14	
	81:12	81:25	Incomplete Designation
	82:2	84:15	82:2-82:14 - Legal Conclusion; Relevance; Foundation 83:13-84:8 - Legal Conclusion; Relevance; Foundation
	85:2	89:6	88:16-89:6 - Mischaracterization
	89:16	93:21	
	94:5	108:10	94:19-95:6 - Foundation; Speculation 97:4-97:18 - Foundation; Speculation 101:15-102:8 – Relevance 102:10-103:12 – Relevance 106:7-107:25 - Mischaracterization; Assumes Facts Not in Evidence
	114:24	121:5	
	121:8	126:16	123:7-124:2 - Legal Conclusion; Foundation; Speculation 124:22-125:13 - Legal Conclusion; Foundation; Speculation; Assumes Facts Not in Evidence
	127:9	134:12	127:9-130:5 - Legal Conclusion; Foundation; Speculation; Assumes Facts Not in Evidence 130:14-133:10 - Legal Conclusion; Foundation; Speculation; Assumes Facts Not in Evidence 133:24-134:12 - Legal Conclusion; Foundation; Speculation; Assumes Facts

			Not in Evidence; Mischaracterization
	134:16	137:16	134:16-135:19 - Legal Conclusion; Foundation; Speculation; Assumes Facts Not in Evidence; Mischaracterization 135:20-136:25 - Legal Conclusion; Foundation; Speculation; Assumes Facts Not in Evidence
	140:24	144:3	143:7-144:3 - Legal Conclusion
	144:13	144:24	Relevance
	145:4	145:25	Incomplete Designation
	146:6	146:9	
	146:24	146:25	Incomplete Designation
	153:21	154:7	
	154:13	156:6	
	156:11	157:10	
	165:11	165:24	
	173:3	173:25	
	187:9	188:1	
	189:14	189:25	
	194:1	197:8	
	201:12	217:1	209:1-209:7 - Assumes Facts Not in Evidence; Vague and Ambiguous 216:13-216:17 – Speculation 216:19-217:1 - Speculation
	217:14	219:20	Relevance; Foundation
	220:4	227:1	226:18-227:1 – Legal Conclusion
	227:20	229:15	227:20-228:24 - Speculation; Foundation
	230:10	233:4	230:10-231:7 - Assumes Facts Not in Evidence; Foundation
	233:24	234:2	
	234:25	240:19	235:16-236:10 - Foundation; Assumes Facts Not in Evidence 236:12-240:19 - Foundation; Assumes Facts Not in Evidence
	243:6	244:21	
David Dellwo	5:21	9:4	7:15-8:15 - Relevance; Foundation
	11:14	11:24	
	13:9	13:20	
	14:4	15:5	
	15:25	16:18	
	19:14	19:21	Relevance; Foundation
	21:2	21:6	Relevance; Foundation
	21:17	21:18	Relevance; Foundation
	22:24	23:6	Relevance; Foundation
	24:20	25:19	Relevance; Foundation

	25:25	26:9	Relevance; Foundation
	26:18	27:1	
	29:9	30:15	29:18-29:24 - Speculation
	32:19	33:8	
	34:11	34:21	
	35:21	35:25	
	43:14	43:22	Speculation; Foundation
	44:5	44:22	
	45:7	46:20	45:7-45:10 - Speculation; Privilege 45:18-46:20 - Relevance; Foundation; Privilege
	49:7	49:11	
	49:16	50:2	
Brian St. Germaine	6:22	7:8	
	9:19	9:21	
	10:6	10:25	
	15:22	18:7	17:22-18:7 - Relevance
	19:22	20:4	
	21:23	22:1	
	22:22	23:9	
	24:2	24:25	
	25:6	27:1	
	28:15	28:25	Relevance
	30:12	30:25	
	31:7	31:23	
	32:3	35:7	
	36:12	36:16	Relevance
	36:23	37:8	
	37:12	37:16	
	38:22	39:23	Mischaracterization; Foundation
	40:8	40:16	
	41:8	41:15	Speculation; Hearsay; Foundation
	43:9	44:7	
	45:6	45:21	
	46:16	47:20	
	48:12	51:5	
	51:13	51:20	
	53:6	53:10	
	54:7	54:9	
	54:22	55:18	55:8-55:11 - Speculation
	59:11	60:2	59:22-60:2 - Relevance; Foundation
	60:13	60:18	Relevance; Foundation; Legal Conclusion
	60:25	61:14	Relevance
	62:21	63:18	
	65:8	65:23	65:10-65:12 - Relevance; Privilege

			65:15-65:18 - Relevance; Privilege
	68:10	69:8	
	69:9	69:22	
	70:14	71:3	
	73:17	74:12	Foundation; Hearsay; Speculation
	74:22	75:11	Speculation; Legal Conclusion; Mischaracterization
	79:10	79:13	
	81:25	82:4	Relevance
	83:16	83:22	Relevance
	83:2	**83:12**	**Mischaracterization; Hearsay**
	84:3	85:2	
	85:18	86:16	85:24-86:8 - Relevance; Hearsay; Mischaracterization
	87:22	90:1	
	90:8	90:16	
	94:1	94:19	Relevance
	95:17	95:21	Relevance; Mischaracterization
	109:7	109:11	

B. Defendant

Deposition Witness	Beginning (page:line)	Ending (page:line)	Plaintiffs' Grounds for Objection
Christopher Taylor	8:1	8:6	Fed. R.E. 402 and 403.
	10:5	10:7	Fed. R.E. 402 and 403. In addition, the testimony is protected by the attorney/client privilege.
	13:13	13:16	Fed. R.E. 402 and 403. In addition, the testimony is protected by the attorney/client privilege.
	14:4	14:7	
	17:4	17:7	
	17:21	19:5	Specifically, Plaintiff objects to Defendant's question at line 24 as it lacks a proper foundation and assumes facts that Mr. Taylor did not testify to.
	19:9	19:19	Fed. R.E. 402 and 403. In addition, the testimony is protected by the attorney/client privilege.
	25:4	25:24	Fed. R.E. 402 and 403. The he testimony is protected by the attorney/client privilege. Further, Defendant's question at

			line 19 lacks proper foundation and assumes facts not in evidence.
	32:9	32:14	Fed. R.E. 402 and 403.
	33:18	34:9	Fed. R.E. 402 and 403. In addition, Defendant's question at 34:3 lacks a proper foundation.
	39:9	39:22	Fed. R.E. 402 and 403. Further, this particular designation appears to be a typographical error and it is unclear what testimony is to be offered.
	40:8	40:9	
	63:13	63:22	
	75:2	75:4	
	75:8	75:24	
	76:20	77:1	
	78:1	82:25	
	84:3	83:9	
	87:6	93:23	Fed. R.E. 402 and 403, in that there is no contention that the product was installed improperly. In addition, Defendant's question at 88:3 assumes facts not in evidence in that Mr. Taylor testified that he had no recollection of seeing the product information sheet. As such, he cannot answer whether it impacted his decision. Same objection for Defendant's question at 88:9.
	96:8	97:15	Fed. R.E. 402 and 403. Further, Defendant's questions at 96:8 and 96:18 are inappropriate as they assume facts not in evidence. Specifically, that he had no knowledge or awareness of what was written in Exhibits 12, 13 and 15 at the time he was deciding to install TechShield as Mr. Taylor testified that he could not recall. In addition, Mr. Taylor would not have seen Exhibit 14 at the time he was deciding to install TechSheild as Exhibit 14 was published after he purchased TechShield.
	102:8	102:13	Fed. R.E. 402 and 403.
	105:15	105:25	
	109:11	109:17	Fed. R.E. 402 and 403; foundation; hearsay.
	110:2	110:10	
	110:14	110:24	Fed. R.E. 402 and 403 foundation;

			hearsay.
	111:16	111:21	Fed. R.E. 402 and 403 foundation; hearsay.
	113:10	113:19	Fed. R.E. 402 and 403 foundation; hearsay.
	121:19	123:24	Specifically, Plaintiff objects the questions and answers starting at 123:6 through 123:22 pursuant to Fed. R.E. 402 and 403. Plaintiff further objects to the inclusion of 123:23-5 as it is Defendant's question without Mr. Taylor's answer.
	125:16	126:25	
	128:3	129:3	
	131:8	132:12	
	132:13	132:23	
	133:23	135:14	
	138:2	138:4	
	144:5	144:19	
	150:2	150:8	Fed. R.E. 402 and 403.
	153:12	155:13	
	158:9	159:6	
	160:10	160:16	
	165:10	165:18	
	166:25	167:20	
Rosaria Taylor	8:3	9:1	
	19:24	20:14	Fed. R.E. 402 and 403; hearsay; foundation.
	26:19	29:8	Fed. R.E. 402 and 403.
	40:24	41:11	Fed. R.E. 402 and 403.
	41:23	42:9	Fed. R.E. 402 and 403. In addition, Mrs. Taylor is not an expert qualified to offer an opinion relating to TechShield's role in the fire; mischaracterization; foundation.
	43:21	43:23	
	48:12	49:2	Fed. R.E. 402 and 403.
	55:25	56:3	
Ronald D. Simmons	25:24	26:6	Fed. R.E. 402 and 403.
	33:22	34:18	Fed. R.E. 402 and 403.
	39:18	39:21	
	59:25	60:10	
	71:2	71:17	
	73:12	74:24	
	77:5	78:3	
	79:25	80:19	
	115:12	116:24	

	142:8	143:1	
	146:19	147:13	
	151:23	152:12	
	156:6	156:11	
	160:15	160:24	
	161:20	162:12	Fed. R.E. 402 and 403; foundation.
	162:16	163:12	
	163:13	164:1	
	164:3	164:18	
	167:18	168:2	
	168:6	169:1	
	169:3	170:2	
	170:3	170:21	
	173:14	174:14	
	174:15	175:21	
	181:1	181:15	Fed. R.E. 402 and 403. Further, such analysis is outside of Mr. Simmons' expertise; foundation.
	192:6	192:8	Fed. R.E. 402 and 403; foundation.
	192:11	193:4	Fed. R.E. 402 and 403.
	193:5	194:2	Fed. R.E. 402 and 403; foundation.
	194:3	194:22	Fed. R.E. 402 and 403. Further, aside from hearsay, there is no evidence to support the factual basis of defense counsel's question; foundation.
	194:23	195:1	
	195:6	196:3	
	196:4	196:11	
	196:12	197:5	
	197:25	198:4	
	198:5	198:16	
	199:14	200:15	
	200:16	200:23	
	201:14	201:21	
	202:20	202:25	Fed. R.E. 402 and 403.
	205:7	205:11	Fed. R.E. 402 and 403. And, the subject matter is beyond the scope of Mr. Simmons' expert report and opinion.
	206:11	207:1	Fed. R.E. 402 and 403. And, the subject matter is beyond the scope of Mr. Simmons' expert report and opinion.
	207:16	210:5	Fed. R.E. 402 and 403. And, the subject matter is beyond the scope of Mr. Simmons' expert report and opinion.
	210:8	212:11	Fed. R.E. 402 and 403. And, the subject

			matter is beyond the scope of Mr. Simmons' expert report and opinion; foundation.
	224:10	224:24	
J. Robert McGraw, Jr.	32:18	33:8	
	33:21	34:10	Fed. R.E. 402 and 403.
	57:8	57:12	
	57:21	58:1	
	71:9	71:12	
	72:14	72:25	Fed. R.E. 402 and 403. Hearsay (relating to what the fire department told Mr. Taylor); foundation.
	74:9	74:16	Fed. R.E. 402 and 403; assumes facts not in evidence; foundation.
	76:3	77:1	
	77:2	77:22	
	78:18	79:3	
	79:13	80:1	
	80:2	80:24	
	86:19	87:12	
	87:13	88:2	
	93:14	94:10	
	97:10	98:9	
	99:10	99:18	
	100:10	101:3	
	102:20	103:13	
	117:4	117:10	
	130:15	132:11	
	132:19	133:3	
	133:20	133:23	
	135:22	136:77	Hearsay; authentication; foundation.
	139:14	140:1	Fed. R.E. 402 and 403; hearsay; foundation.
	142:5	142:14	Fed. R.E. 402 and 403.
	181:11	182:3	
	212:10	213:22	Fed. R.E. 402 and 403; foundation.
	215:15	216:2	Fed. R.E. 402 and 403; foundation.
	219:16	220:25	Fed. R.E. 402 and 403.
	221:1	221:12	
	221:19	221:25	
	228:17	229:10	
	237:10	238:6	
	238:7	238:11	Fed. R.E. 402 and 403. Further, Mr. McGraw clearly stated that he was not asked to investigate TechShield itself, as

			such, he is not able to offer an opinion as whether it is defective; foundation.
	239:16	239:23	Fed. R.E. 402 and 403. Further, Mr. McGraw clearly stated that he was not asked to investigate TechShield itself, as such, he is not able to offer an opinion as whether it is defective. Additionally, Mr. McGraw is not qualified to offer any such opinion; foundation.
Gary Marshall Richetto	4:13	4:18	
	6:23	7:3	
	9:21	10:1	
	17:16	17:22	
	25:4	27:20	
	62:18	62:25	
	63:18	65:14	Defense counsel's questions improperly assume that Mr. McGraw and Mr. Scardino were asked to form an opinion as to whether the TechShield was hazardous. Both experts offered opinion regarding the cause and origin of the fire. Neither offered any opinion or comment on whether TechShield was hazardous; mischaracterizes testimony; foundation.
	67:22	68:7	
	70:25	71:11	
	71:13	71:20	
	73:15	74:8	Fed. R.E. 402 and 403.
	75:13	76:5	Fed. R.E. 402 and 403.
	77:18	78:8	Fed. R.E. 402 and 403, particularly because Dr. Richetto already testified that he is not an electrical engineer; foundation.
	81:14	82:23	Defense counsel's question mischaracterizes the opinions of Mr. Simmons; foundation.
	86:10	91:17	
	92:15	92:18	This beyond the scope of Dr. Richetto's report and opinion. Further, he is not an expert in lightning nor is he an electrical engineer; foundation.
	94:15	94:20	
	96:24	97:14	The hypothetical question posed to Dr. Richetto asks him for opinions beyond his expertise; foundation.
	101:11	105:11	Dr. Richetto is not an expert in lightning

			nor is he an electrical engineer and seeks information beyond the scope of his opinion; foundation.
	108:18	109:9	
	112:23	113:19	Defendant is asking Dr. Richetto to testify as to what another expert, Mr. Simmons, testified and mischaracterizes testimony; foundation.
	115:25	116:5	Fed. R.E. 402 and 403; Defense counsel's questions is directed at Dr. Richetto but seeks information about what data another expert has; foundation.
	119:3	120:3	Fed. R.E. 402 and 403. Further, Dr. Richetta is not an expert in insurance underwriting; foundation.
	121:1	121:14	
	122:9	123:4	Fed. R.E. 402 and 403. Again, Mr. McGraw was not retained to investigate TechShield itself. He was retained only to investigate the cause and origin of the fire; mischaracterization; foundation.
	123:15	124:16	Specifically, starting at 124:4, Defendant is soliciting information that is beyond Dr. Richetto's expertise; foundation.
	125:14	126:3	Dr. Richetto is not an expert in roofing or building materials; foundation.
	127:8	127:15	Fed. R.E. 402 and 403; foundation.
	131:9	131:23	Fed. R.E. 402 and 403.

A. The Parties reserve the right to introduce summaries of documents, rebuttal, cross examination and impeachment documents at trial.

B. The Parties reserve the right to introduce any documents necessary to demonstrate, clarify, summarize or illustrate evidence to be presented at trial.

V. WITNESSES.

A. Plaintiffs:

NAME	ADDRESS	PROPOSED TESTIMONY
Christopher Taylor	190 Cedar Valley Lane Louisburg, NC 27549	Mr. Taylor is the owner of the home damaged by fire. He is expected to offer testimony concerning the original

		construction of the home, as well as structural and personal property damages resulting from the fire. He will also testify about the events of the fire.
Rosaria Taylor	190 Cedar Valley Lane Louisburg, NC 27549	Mrs. Taylor is the owner of the home damaged by fire. She is expected to offer testimony concerning the structural and personal property damages resulting from the fire. She will also testify about the events of the fire.
Mark Coffey	State Farm Fire and Casualty Co. 4140 Parklake Avenue, Suite 400 Raleigh, North Carolina 27612	Mr. Coffey is expected to testify about the adjustment of the claim, damages to structure and personal property, and payments made by State Farm.
Luke Wind	Cary Reconstruction Company 2410 Reliance Avenue Apex, North Carolina 27539	Mr. Wind will testify about the repair and remediation of the damages resulting from the fire.
Tim Jackson	Cary Reconstruction Company 2410 Reliance Avenue Apex, North Carolina 27539	Mr. Jackson will testify about the repair and remediation of the damages resulting from the fire.
J. Robert McGraw, Jr.	Elemental Analytical, PLLC Post Office Box 1091 Knightdale, North Carolina 27545	Mr. McGraw is an expert in the areas of and expected to render expert testimony relating to the investigation, cause and origin of the fire at the Taylor residence. Objection by Defendant: Untimely expert testimony from Plaintiffs previously disclosed expert J. Robert McGraw, Jr. should be excluded for violation of Fed. R. Civ. P. 26(a)(2) and 37(c)(l) and the Court's Scheduling Order, and excluded pursuant to Rule 7 of the Federal Rules of Civil Procedure, Local Civil Rule 7.1, EDNC, and Rule 702 of the Federal Rules of Evidence, for failing to satisfy the requirements for admissible expert testimony set forth by the U.S. Supreme Court in *Daubert v.*

		Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 579-80 (1993).
Ronald D. Simmons	McDowell Owens Integrated Forensic Engineering 740 East 13th Street Houston, Texas 77008	Mr. Simmons is an expert in the areas of electrical and electro-mechanical engineering. Mr. Simmons is expected to render expert testimony relating to the defective nature and the unreasonable dangers and hazards of radiant barriers, and in particular the Louisiana-Pacific TechShield radiant barrier installed in the Taylor home. He will also offer testimony concerning the cause of the Taylor fire, electrical arcing, lightning induced arcing, radiant barrier composition, and the effects of heating on radiant barriers. He will provide testimony concerning his testing results. Objection by Defendant: Untimely expert testimony from Plaintiffs previously disclosed expert Ronald. D. Simmons should be excluded for violation of Fed. R. Civ. P. 26(a)(2) and 37(c)(l) and the Court's Scheduling Order, and excluded pursuant to Rule 7 of the Federal Rules of Civil Procedure, Local Civil Rule 7.1, EDNC, and Rule 702 of the Federal Rules of Evidence, for failing to satisfy the requirements for admissible expert testimony set forth by the U.S. Supreme Court in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 579-80 (1993).
Gary M. Richetto	9711 South Sandusky Ave. Tulsa, Oklahoma 74137	Dr. Richetto is expected to render expert testimony relating to human factors, duties to test and examine products prior to placing them into the stream of commerce, warnings related to

		and instructions which accompanied the Louisiana-Pacific products, including TechShield, and Louisiana-Pacific's failure to properly disseminate information and warnings to its sellers, consumers and users. Dr. Richetto is expected to testify in regard to the inadequacy of the warnings selected and published by Louisiana-Pacific.
Thomas W. Eagar	MIT, Room 4-136 77 Massachusetts Ave. Cambridge, Massachusetts 02139	Dr. Eagar is an expert in the areas of metallurgy and materials science. Dr. Eager is expected to render expert testimony relating to the defective nature and the unreasonable dangers and hazards of radiant barrier systems, and in particular the Louisiana Pacific Corporation's TechShield Radiant Barrier installed in the Taylor home. Dr. Eagar will rebut the analysis and scientific basis and methodology utilized by Defendant's expert witnesses relating to their hazard rate analysis, as well as rebutting the findings of Mark Goodson of Goodson Engineering and Dennis Scardino of Engineering Systems, Inc. Dr. Eagar will also testify about the properties of melted aluminum and the overall effect of covering the roof with a metal foil, as they relate to the increased hazard rates of radiant barrier systems. He will also offer testimony concerning electrical arcing, lightning induced arcing, TechShield composition, and the effects of heating on the metallurgic properties of radiant barriers. Dr. Eagar is expected to testify concerning the scientific method, and the deficiencies in

		the methodology demonstrated by Defendant's experts. Objection by Defendant: Untimely disclosed reports and expert testimony of Plaintiff's undisclosed expert Thomas W. Eager should be excluded for violation of Fed. R. Civ. P. 26(a)(2) and 37(c)(l) and the Court's Scheduling Order.
Matthew Strawbridge	Bunn Fire Department 2882 NC Hwy. 98W Louisburg, North Carolina 27549	Mr. Strawbridge is expected to testify about facts related to the fire, including but not limited to his response to the fire scene, fire suppression activities, fire report and 911 response.

B. Defendant:

NAME	**ADDRESS**	**PROPOSED TESTIMONY**
Dennis J. Scardino , P.E., CFI, CFEI, CFII, CVFI	ESI 16770 Imperial Valley Dr. Suite 150 Houston, TX 77060	Dennis Scardino is a mechanical engineer and expert in forensic failure and fire cause and origin analysis. He may testify as to his background and qualifications, his investigation and inspection of the fire at the Taylor residence, his findings as to the cause(s) thereof, lightning, both generally and its role in the Taylor fire. He may also testify as to the composition, uses and performance characteristics of Techshield and related issues. Defendant directs the Court and Plaintiff to Dennis Scardino's report and file materials previously produced to the Plaintiff, as well as his deposition testimony given in this lawsuit, all of which are incorporated herein. Mr. Scardino may also testify as to the opinions, analysis and testing of State Farms experts, including Robert McGraw and Ron Simmons and

		the deficiencies related thereto.
Timothy Rhoades	Applied Safety & Ergonomics 3909 Research Park Drive Suite 300 Ann Arbor, MI 48108	Dr. Rhoades is expected to testify about: warnings and increased risk of harm in the context of radiant barriers and lightning strikes; that there is no evidence of an increased risk of harm from TechShield; that consequently, a lightning-related warning for TechShield is not necessary; and that manufacturers of other building products including radiant barrier do not publish warnings about lightning strike risks.
Mark Goodson, P.E.	Goodson Engineering 1500 Spencer Road Denton, TX 76205	Mark Goodson is a professional engineer and an expert in failure analysis, material composition and analysis, and origin and cause of fires. He may testify as to his evaluation and analysis of Techshield, of materials preserved from the Taylor fire, and lightning, generally and specifically as it relates to the cause of the Taylor fire. He may also testify to radiant barrier products, generally, including their uses, performance characteristics and applications, and the viability of alternative products, and related issues. Defendant directs the Court and Plaintiff to Mark Goodson's report and file materials previously produced to Plaintiff, as well as his deposition testimony given in this lawsuit, all of which are incorporated herein. Mr. Goodson may also testify regarding the opinions, analysis and testing performed by Ron Simmons, and the deficiencies related thereto.
Brian St. Germain	Louisiana Pacific Corporation 414 Union Street, Suite 2000	Brian St. Germain is the Quality and Technical Manager for the

	Nashville, TN 37219	OSB business of Louisiana-Pacific Corporation. He may testify as to his experience and job duties with Louisiana-Pacific Corporation, as well as his inspection of the Taylor residence. He may also testify regarding the Louisiana-Pacific Techshield product generally, including but not limited to its composition, manufacturing process, performance characteristics, uses, application, certifications, and related issues. He may also testify regarding radiant barrier products in general, including applicable standards and applications, as well as Louisiana-Pacific's Techshield warranty.
David Dellwo	Louisiana Pacific Corporation 1322 Serene Trails Tomball, TX 77375	David Dellwo is a technical field representative for Louisiana-Pacific Corporation. He may testify as to his experiences and job duties for Louisiana-Pacific, as well as his inspection of the Taylor residence. He may also testify regarding the Techshield product generally, including but not limited to its composition, performance characteristics, usage and applications, and related issues. He may also testify regarding the warranty Louisiana-Pacific's Techshield warranty.
Matthew Strawbridge	Bunn Fire Department 2882 NC Hwy. 98W Louisburg, North Carolina 27549	Mr. Strawbridge is expected to testify about the emergency response to the fire at the Taylor house and the preparation of the report by the fire department which concluded that the cause of the fire at the Taylor house was a lightning strike.
Billy Wusterhausen	Round Rock Fire Dep't 221 East Main Street Round Rock, Texas 78664	Mr. Westerhausen is expected to testify that he has never spoken with Ronald Simmons about radiant barriers and that his fire

		department's interest in lightning-related house fires had nothing to do with radiant barriers. Objection by Plaintiffs: F.R.C.P. Rule 37 for failure to comply with Rule 26(a) disclosures. Further, upon information and belief, Mr. Wusterhausen has no information about the Taylor fire, TechShield or other radiant barriers, or any information about radiant barriers' role in lightning related fires.

C. The Parties reserve the right to call at trial any and all witnesses identified by the other Party.

D. The Parties reserve the right to call at trial Rebuttal and impeachment witnesses as necessary.

TRIAL TIME ESTIMATE 5-6 days.

This the 26th day of March, 2014.

Respectfully submitted,

/s/ L. Skye MacLeod
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APPROVED BY:

_____
WILLIAM A. WEBB
UNITED STATES MAGISTRATE JUDGE

_____, 201__.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION
Civil Action No. 5:12-cv-289-BO

STATE FARM FIRE AND CASUALTY COMPANY as subrogee of CHRISTOPHER TAYLOR Plaintiffs, v. LOUISIANA PACIFIC CORPORATION, Defendant.	)	**CERTIFICATE OF SERVICE**

I HEREBY certify that on March 26, 2014, I electronically filed the foregoing ***Joint Pretrial Order*** with the Clerk of the Court using the CM/ECF system which will serve such filing on the below-named parties:

L. Neal Ellis, Jr., Esquire
Nathaniel C. Parker, Esquire
Ellis & Parker PLLC
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Wake Forest, North Carolina 27587
Attorneys for Louisiana Pacific Corporation

George Murphy, Esquire
Vinson & Elkins
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Attorneys for Louisiana Pacific Corporation

Respectfully submitted,

/s/ L. Skye MacLeod

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November 19, 2012

Law Offices of Stephen R. Paul, PLLC
P. O. Box 16099
Chapel Hill, North Carolina 27516

Attention: L. Skye MacLeod

RE: State Farm Fire and Casualty Company, a/s/o
Christopher Taylor v. Louisiana Pacific Corporation

Dear Ms. MacLeod,

At your request, I have reviewed the reports of Goodson Engineering and ESI in the above referenced matter, wherein it is claimed that the Louisiana Pacific TechShield Radiant Barrier "does not assure or increase the likelihood that a fire will occur in the eventuality that a residential structure is struck by lightning" [ESI report, p.10] and "LP TechShield does not present an increased risk of lightning related fire when lightning strikes a home in which it is installed" [Goodson Engineering report, p.5]. It was requested that I evaluate the scientific bases for these opinions and whether the scientific methodology which was used was proper.

In performing my investigation, I reviewed the following materials:

1. Goodson Engineering report by Mark Goodson to Mr. Neil Ellis, undated.
2. ESI report by Dennis Scardino to Ellis and Anthony, undated.
3. Triad Associates, Inc. report by Dr. Gary M. Richetto, dated October 13, 2012.
4. Element Analytical reports by J. Robert McGraw, Jr. dated August 22, 2012 and November 6, 2012.
5. R.D. Simmons, E.M. Benstock, "A Strange New Source of Structural Fire Ignition."

6. P. Farrey, "Radiant Energy Transfer and Radiant Barrier Systems in Buildings," Florida Solar Energy Center Publication No. FSEC-DN-6-86.

7. NFPA 921 Sections 14.1 and 14.9 through 14.12.2.

8. "Reflective Radiant Barriers – Energy Saving Wonder or Disaster Waiting to Happen?," McDowell Owens Engineering, Kingswood, Texas.

9. RIMA International Technical Bulletin #108.

10. LP TechShield MSDS 11/08/07.

11. LP TechShield Installation Instructions 12/18/10.

12. LP TechShield Warranty.

13. Vaisala STRIKEnet report 328577 for August 29, 2011.

14. Intertek Test Report No. 100544731SAT – 001A dated October 31, 2011.

15. Stereomicrographs and SEM of copper wires performed at Goodson Engineering.

Based upon my investigation, training and education I have made the following observations and I have formed the following conclusions within a reasonable degree of engineering certainty.

1. Both the ESI report and the Good Engineering report expound at length that lightning can cause fires in residential structures. Based upon this discussion both reports conclude the LP TechShield does **not** increase the hazard of lightning causing a fire in a residential structure. There are several problems with this method of scientific inquiry.

   a. There is no data, test, experiment, literature, etc. provided that compares the hazard rate of lightning striking OSB versus lightning striking RBS. Thus, there is no basis for the conclusion that this hazard rate for OSB and RBS is the same. ESI and Goodson Engineering have merely stated their hypothesis as a conclusion without testing the hypothesis. This violates the scientific method as outlined in NFPA 921, Chapter 4.

This is the fallacy of a "question-begging epithet" [S.M. Engel, *Fallacies and Pitfalls of Language*, Prentice Hall, 1994, Chapter 11].

b. Both reports attempt to prove a negative, i.e. that RBS does **not** increase the hazard rate of OSB. Proof of a negative requires either considerable statistical data or eliminate of all potential alternatives. Neither the ESI or Goodson Engineering reports provide any statistical data comparing the hazard rate of RBS and OSB nor a thorough analysis of the potential fire ignition modes when lightning strikes these materials.

c. Both reports confirm that lightning causes fires and appear to agree that lightning caused this fire. Without any further analysis both conclude that RBS is equivalent to OSB. By claiming knowledge of how lightning ignites OSB, the ESI and Goodson Engineering attribute the same properties of OSB to RBS without any proof, connection or analysis. There is no nexus between the data they present for OSB products and RBS. This is the fallacy of a sweeping or hasty generalization [Engel, Chapter 8].

d. By focusing most of their reports on the fact that lightning can cause fires, ESI and Goodson Engineering have committed the "irrelevant thesis" fallacy [Engel, Chapter 16]. The question is not whether lightning can cause fires, but whether the presence of the aluminum foil increases the likelihood of a fire. There is no such analysis in either the ESI or the Goodson Engineering reports.

For all the reasons noted above, the methodology of both ERI and Goodson Engineering is scientifically flawed.

2. There is affirmative evidence from the Taylor residence that the aluminum on the LP TechShield melted [for example see photographs 19 and 23 of the Element Analytical report of August 22, 2012]. Melting of the aluminum foil over such large areas will produce aluminum beads of sufficient size to detach by gravity. The size of the drops are controlled by surface tension forces, gravity forces and any electromagnetic forces if electrical arcs are present [References 1 and 2]. If the melting is caused by resistive heating (as demonstrated by McDowell Owen tests on RBS), the temperature of the aluminum beads (drops) will be greater than the melting point (1200°F) and

less than the boiling point (3000°F). If the melting is caused by arcing, the temperature will be closer to the boiling point [Reference 3]. In either case, the temperature and size of the beads is sufficient to ignite nearby combustibles. Examples (evidence) of such ignition by molten metal beads is provided in NFPA 51B Standard for Fire Prevention During Welding, Cutting and Other Hot Work.

Thus, it is clear that RBS differs from OSB in that RBS can produce molten aluminum beads, whereas OSB, which does not contain aluminum cannot produce aluminum beads. On this basis alone LP TechShield RBS is most assuredly different than OSB, and these differences were observed by melting and beading of thealuminum foil on the RBS in the attic of the Taylor residence. RBS is more hazardous than OSB when struck by lightning because the aluminum can (and did) melt and the molten metal can drop by gravity onto highly combustible materials such as the Styrofoam vents that were immediately below the LP TechShield.

Photograph 23 from the Element Analytical report of August 22, 2012 confirms that the lightning produced arcing which led to melting of the aluminum foil on the LP TechShield. This photograph shows the steel exhaust vent penetrating the RBS with localized melting of the foil several inches distant from the penetration. Such arcing would be initiated by the localized contact between the foil and the exhaust vent [Reference 4] and the arc would have been sustained to a distance of several inches from the initial point of contact by the high voltages in the lightning event.

3. By placing a metal foil in the roof cover of the building, the manufacturer of LP TechShield created a poor man's Lightning Protection System (LPS). An LPS is a metallic shield (Faraday cage) which rearranges the static electric field created by the lightning storm [References 5 and 6]. Metallic conductors that reach above the house, such as the stainless steel chimney cap or the peak of an RBS roof, act as air terminals to attract the lightning. These principles are described in NFPA 780 and References 5 and 6. This ability to act as an air terminal is a feature of RBS that does not exist in OSB.

The problem is that the aluminum foil is too thin to act as a down conductor the lightning current to ground [NFPA 780 Table 4.1.1.1.1]. According to the NFPA, aluminum down conductors must be 1.63 millimeters thick, whereas the foil on the RBS is 0.01 mm thick or stated in the reverse, RBS is just too thin to serve as a down conductor in the LPS that is designed into the RBS by

the manufacturer. LP TechShield violates the known scientific requirements of NFPA 780. On this basis it is not fit for its purpose, whether that purpose was intentional or not. LP TechShield is a defective product.

CONCLUSION

The methodology used by ESI and Goodson Engineering to conclude that RBS and OSB do not differ in their response to lightning was scientifically flawed. The analyses presented herein concerning arcing and melting of the aluminum foil in the RBS during a lightning strike, as well as the propensity of the RBS to serve as an air terminal and a down conductor in an unintentional LPS, are based upon known scientific principles described in various NFPA documents. These principles demonstrate that RBS is indeed more hazardous than OSB when assaulted by lightning, contrary to the unsupported assertions of ESI and Goodson Engineering. While the extensive use of RBS is relatively recent and there is insufficient statistical data to establish the relative hazard rate of RBS versus OSB, the question with respect to the Taylor residence is whether the LP TechShield demonstrates the damage and the location with respect to the fire origin such that a reasonable person could conclude that the presence of the foil backing on the RBS contributed to the fire. Statistics are not possible, nor are they relevant to a single building. The proper question is whether the LP TechShield contributed to ignition of the fire at the Taylor residence. That is a factual question that must be determined by others.

Sincerely yours,

Thomas W. Eagar

Thomas W. Eagar

jh

REFERENCES

1. J.F. Lancaster, *The Physics of Welding*, 2nd Edition, Pergamon Press, 1986, Chapter 3, Section 3.7.1

2. Y.S. Kim and T.W. Eagar, "Analysis of Metal Transfer in Gas Metal Arc Welding," *Welding Journal*, 1993, p.269s – 276s

3. A. Block-Bolten and T.W. Eagar, "Metal Vaporization from Weld Pools," Metallurgical Transactions Volume 15B, 1984, p.461

4. R. Holm, *Electric Contacts*, 4th Edition, Springer Verlag, 1967

5. V.A. Rakov and M.A. Uman, *Lightning*, Cambridge University Press, 2003

6. M.A. Uman, *The Art and Science of Lightning Protection*, Cambridge University Press, 2008

Element Analytical, PLLC

November 6, 2012

Ms. L. Skye MacLeod, Esq.
Law Offices of Stephen R. Paul
Post Office Box 16099
Chapel Hill, North Carolina 27516

Subject:	Residential Fire Investigation
Case:	State Farm Fire and Casualty Company a/s/o Christopher Taylor v. Louisiana Pacific Corporation
Case No:	5:12-cv-289-BO
Loss Location:	190 Cedar Valley Lane Louisburg, North Carolina 27549-9713
Claim Number:	33-D493-449 (State Farm Insurance Co.)
Date of Loss:	August 29, 2011
Element File:	11-0186-02

Dear Ms. MacLeod:

Pursuant to your request, this writing supplements and amends my original report dated August 22, 2012. The purpose of this supplement is to correlate my field observations of 2011 with data collected during recent joint inspection occurring after issuing my original report. Additionally, this report amends my opinion regarding the artifacts of electrical activity present along the fire alarm branch circuit wiring.

My *curriculum vitae,* list of my testimony within the last four (4) years, list of publications, and rate schedule remain unchanged from that provided with my original report. Element Analytical, PLLC, has received $8971.20 in compensation for this investigation, with an additional $4,145.75 in invoicing pending.

I may use photographs, diagrams, documents, or other demonstrative aids to explain or clarify my opinions and testimony. I reserve the right to supplement this report to the extent necessary if additional relevant information becomes available, in response to testimony offered by other witnesses or experts, or in response to questions presented during my deposition, trial, or other testimony.

Materials reviewed in preparation of this supplemental and amended report include:

1. Element Analytical, PLLC, File 11-0186-02
2. Wiring artifacts (evidence items 5 and 6) collected from 190 Cedar Valley Lane, Louisburg, North Carolina 27549-9713
3. House plans for "Residence of Chris & Tasha Taylor", drawn by Casey Design of Wake Forest, North Carolina, (undated) as provided by Christopher Taylor
4. Photographs/micrographs, x-rays, SEM data, and CT scans from Goodson Engineering generated during the September 27, 2012, joint inspection
5. Report of Goodson Engineering (undated) re: File #7376

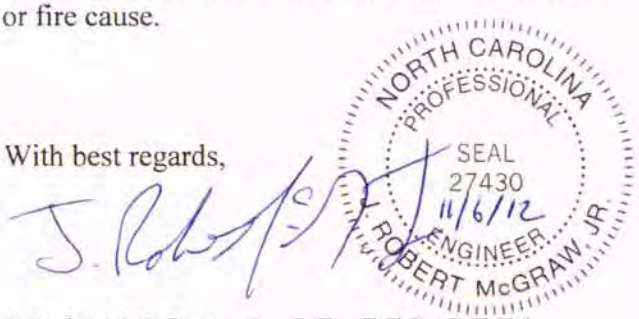
I relied on the above as well as my knowledge, skill, education, training, experience, first hand observations at the fire scene, and inspection of artifacts recovered from the scene to develop the opinions presented in this matter to a reasonable degree of engineering certainty.

During collection of the fire alarm branch circuit wiring from the fire scene, I noted two areas on those conductors displaying conditions consistent with electrical arcing activity. The following captioned and annotated photographs clarify and explain the fire alarm circuit wiring (14/3 cabling labeled evidence item #5) location before collection from the attic space to aid in correlating field and laboratory observations. The two regions of electrical arcing activity developed upslope from and outside of the area of fire origin previously discussed and described in my August 22, 2012, report.

Review of data generated during the September 27, 2012, examination by others and my visual inspection of the subject wiring since shows the artifacts of electrical arcing along the fire alarm circuit wiring (14/3 cabling labeled evidence item #5) on the grounding conductor absent a corresponding witness/arcing mark on an adjacent conductor. This condition supports arcing at these two regions, which falls outside my area of fire origin, likely occurring during the lightning event rather than from insulation degradation during fire progression.

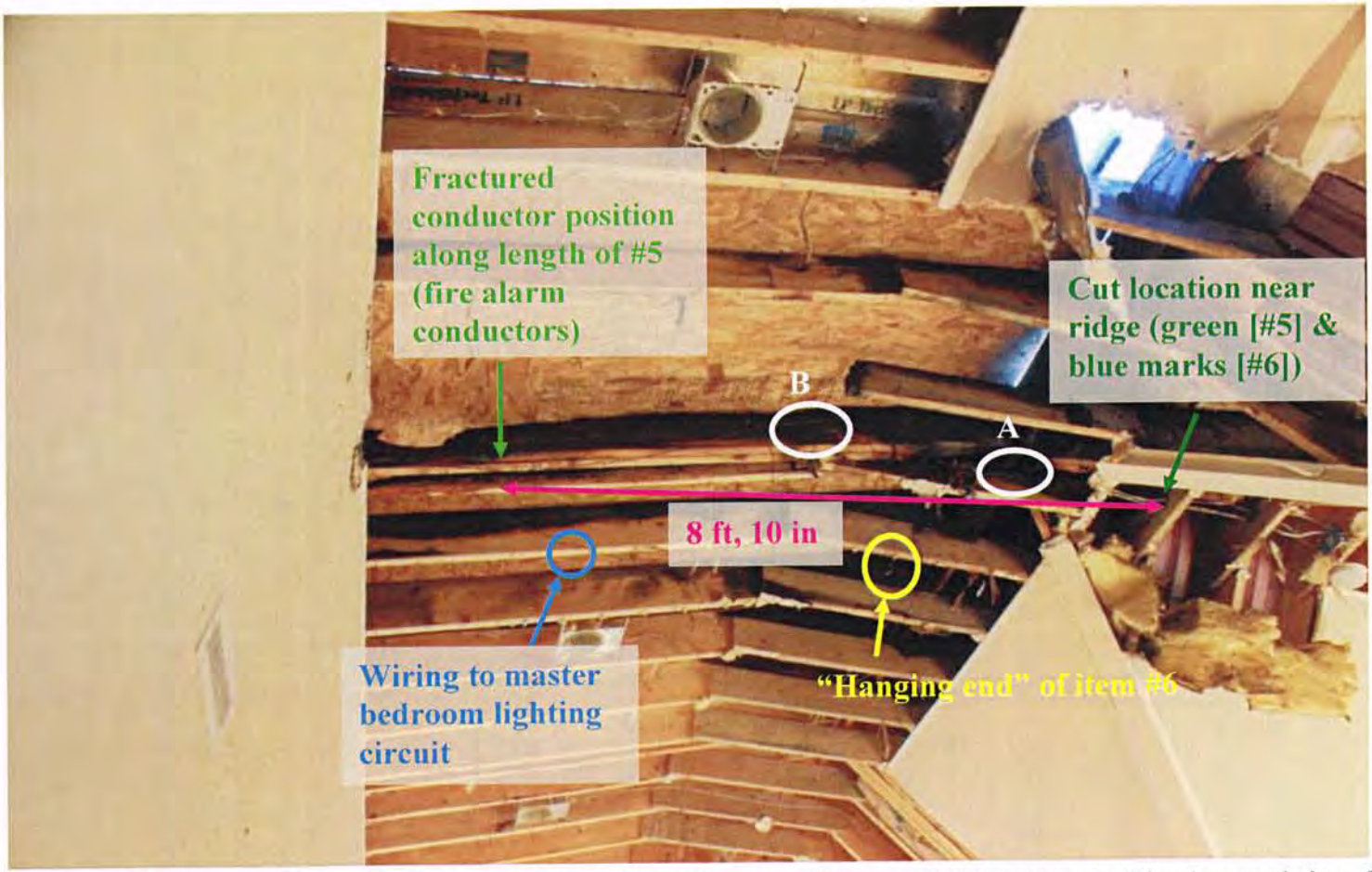
The area of fire origin discussed and described in my August 22, 2012, report remains unchanged, and none of this new information alters my opinions regarding the area of fire origin or fire cause.

With best regards,



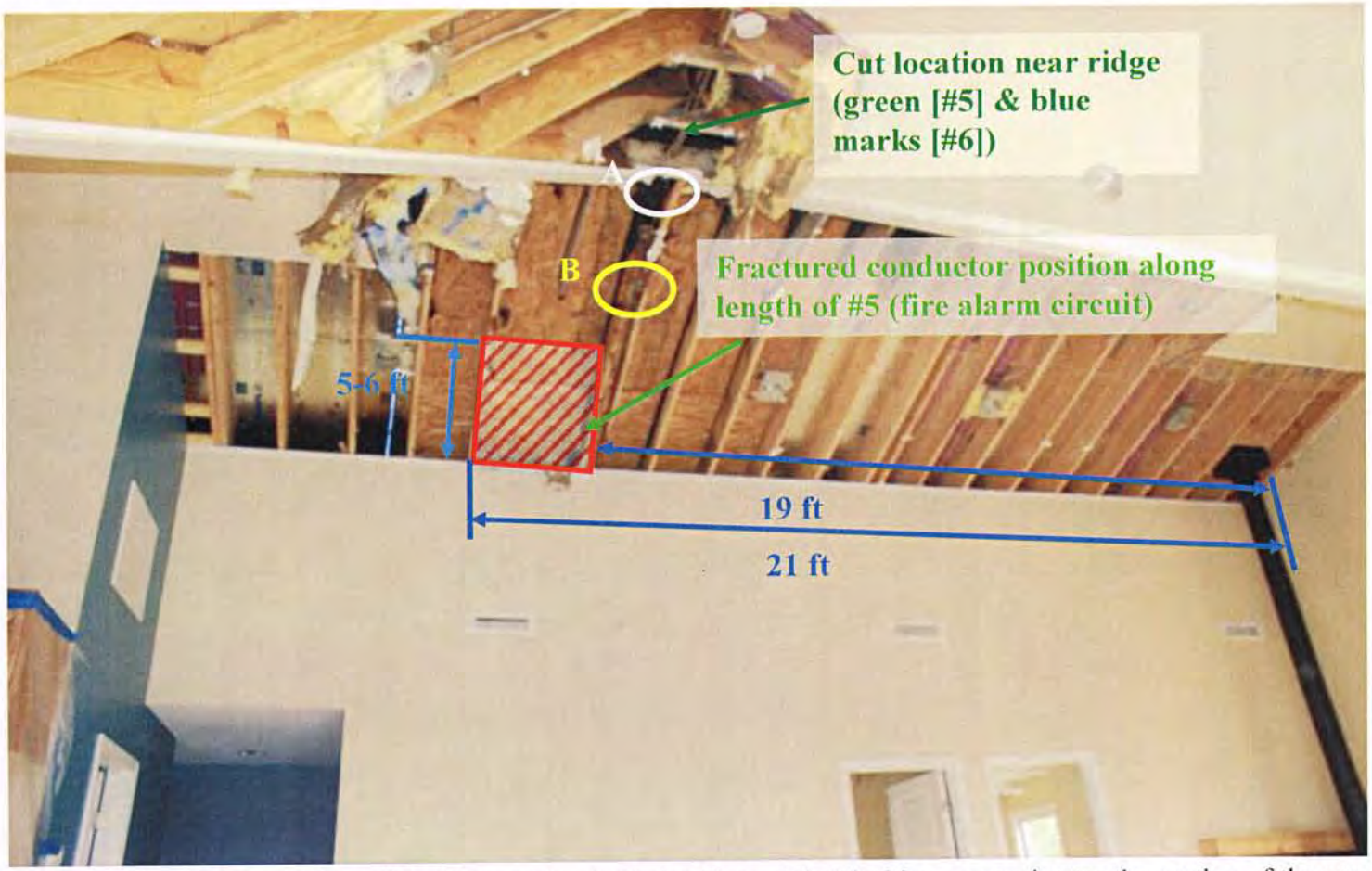
J. Robert McGraw, Jr., P.E., C.F.I., C.F.E.I.

Attachments: Captioned Photographs (21)



Photograph 1: View looking eastward toward the ceiling/attic space above the living room. Certain characteristics of the collected wiring (items 5 and 6) and the routing of wiring to master bedroom lighting are noted. The distance from the cut end of item #5 to the mechanically fractured conductor was 8-feet, 10-inches as shown. Measurements indicated regions of electrical activity about 22-inches (A) and 68-inches (B) from the field cut near the roof ridge. Region 'B' was sectioned from the collected wiring by others during the September 27, 2012, joint examination.

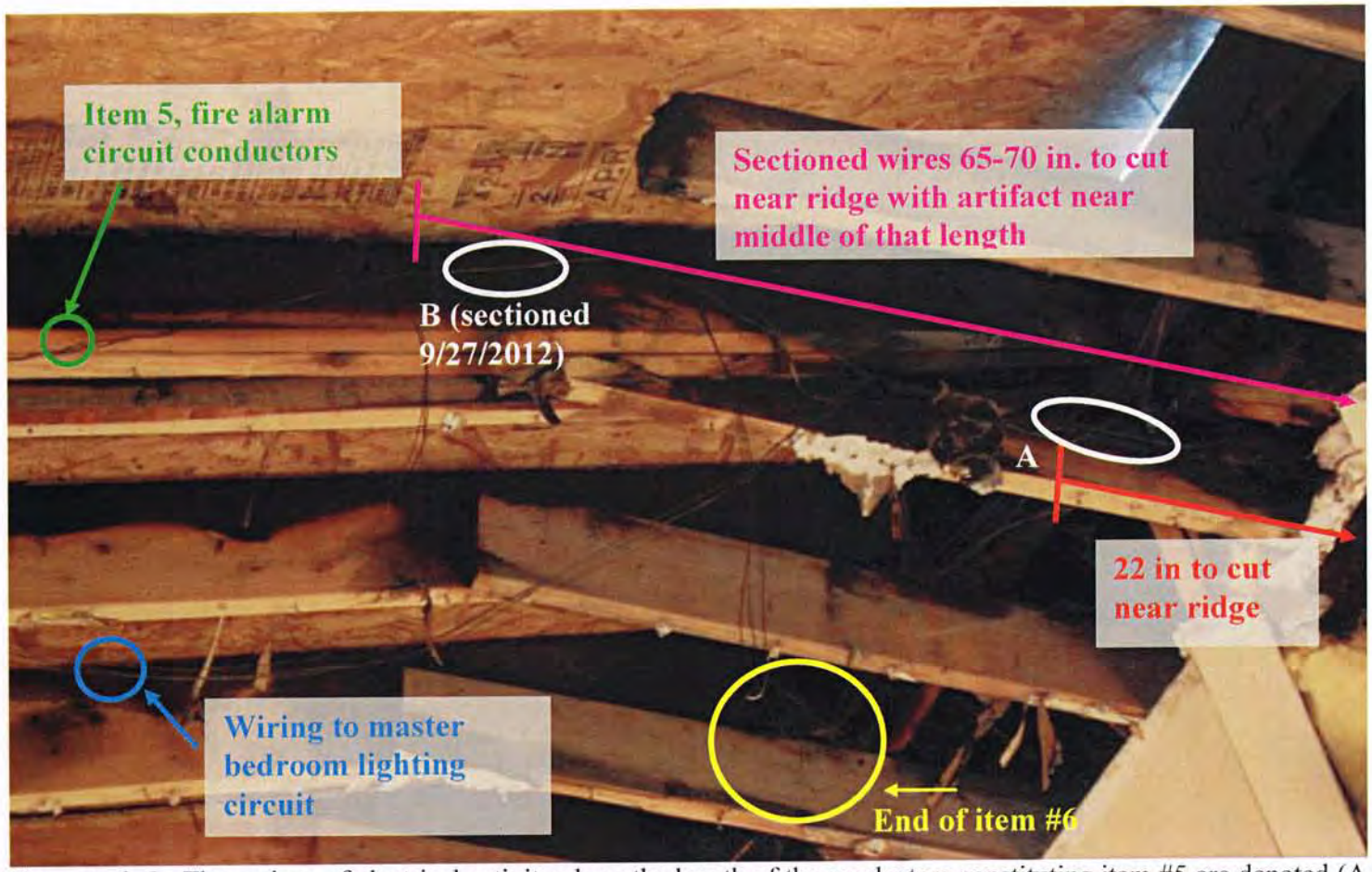
Element File 11-0186-02



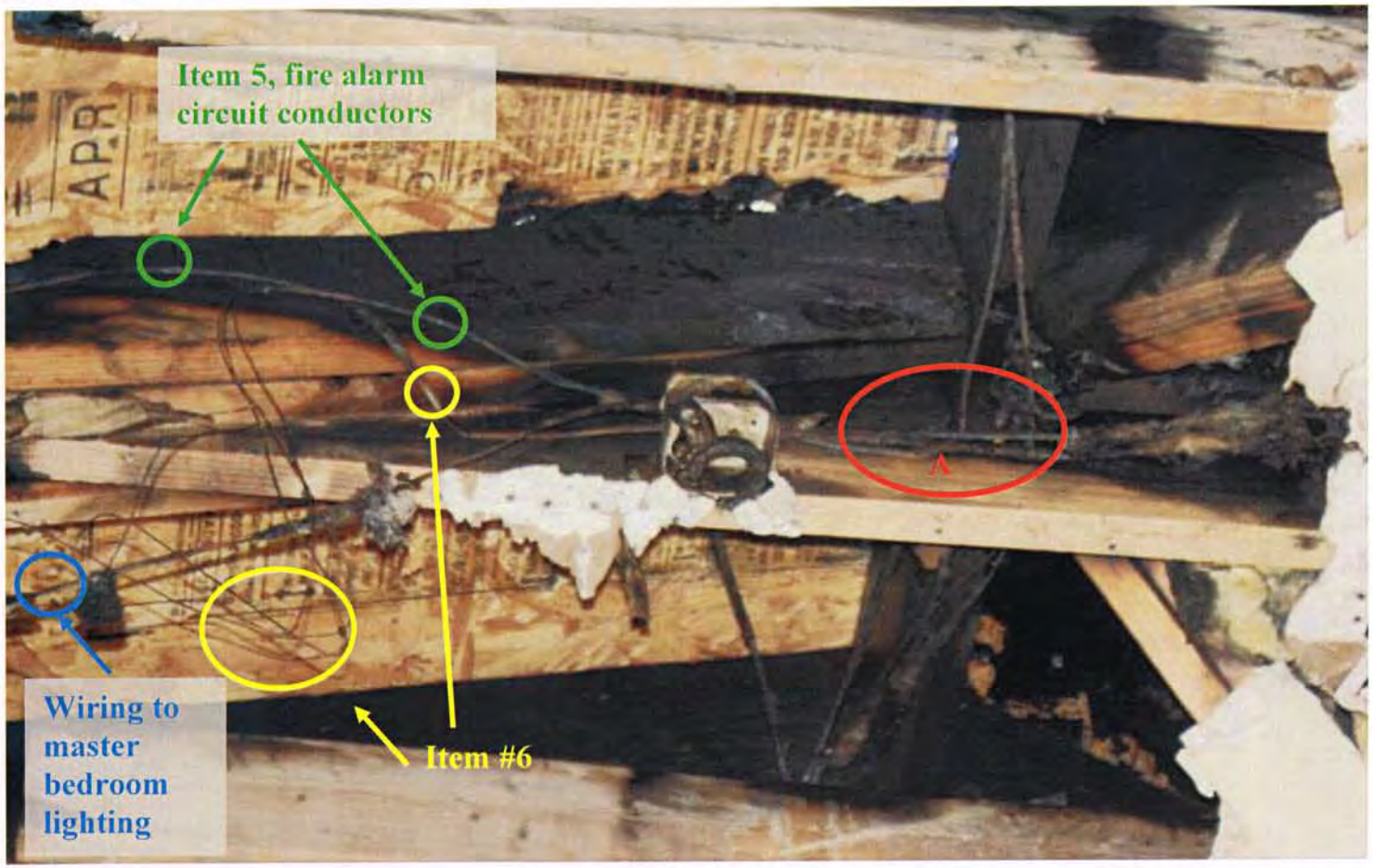
Photograph 2: Northward view of the living room vaulted ceiling. A hatched box approximates the portion of the area of fire origin above the living room described in my August 22, 2012, report. The approximate location of the areas of electrical activity (A and B) and the fractured conductor along the fire alarm branch circuit are denoted.

Photograph 3: Alternative view of the living room ceiling/attic space. Artifacts of electrical activity on item #5 identified during my October 21, 2011, field inspection were positioned upslope from and outside of the area of fire origin described in my original report.

Photograph 4: Looking upward at the forward projecting roof ridge, a circle surrounds the position where items 5 and 6 were cut out. For orientation purposes, a northerly cardinal direction is to the left of this vantage.

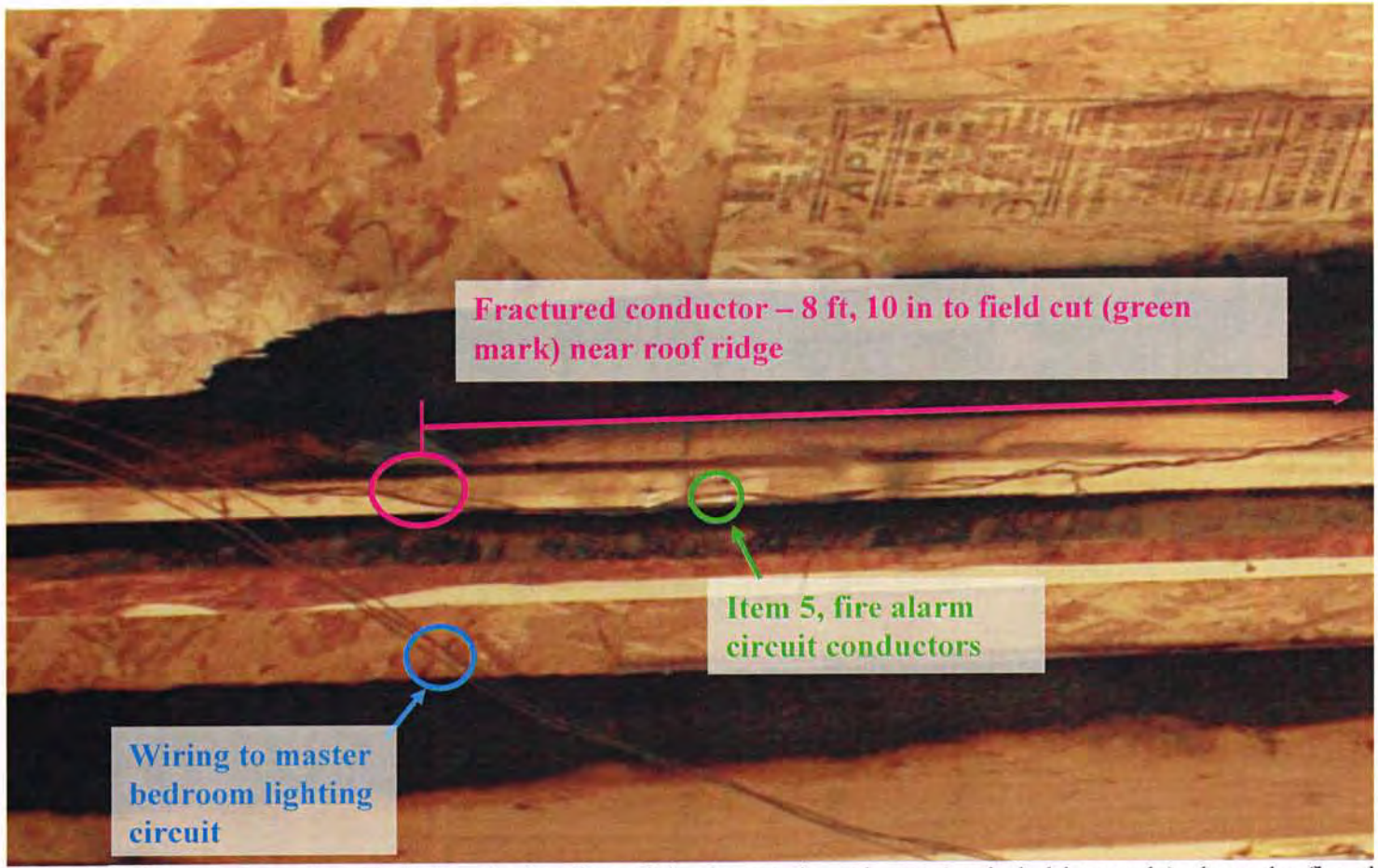


Photograph 5: The regions of electrical activity along the length of the conductors constituting item #5 are denoted (A and B). Respective dimensions to the field cut location near the roof ridge, shown in Photograph 3, are noted. The hanging end of item #6, the recovered section of which totaled about 88.5 inches in length, is encircled.

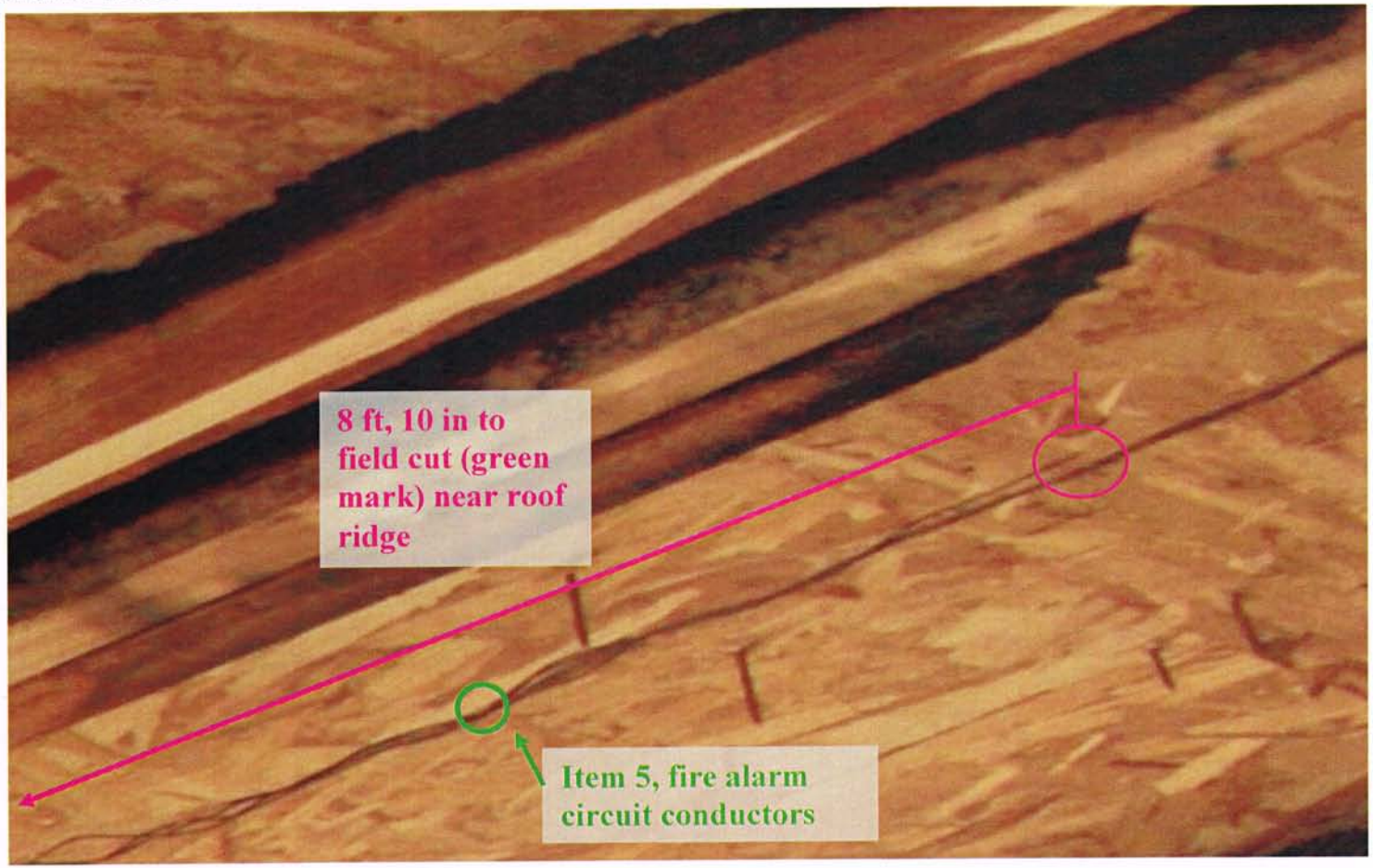


Photograph 6: A red oval surrounds the position of field-identified area of electrical activity, designated herein as region 'A', along the fire alarm circuit conductors (item 5). The respective positions of evidence items 5 and 6 are indicated.

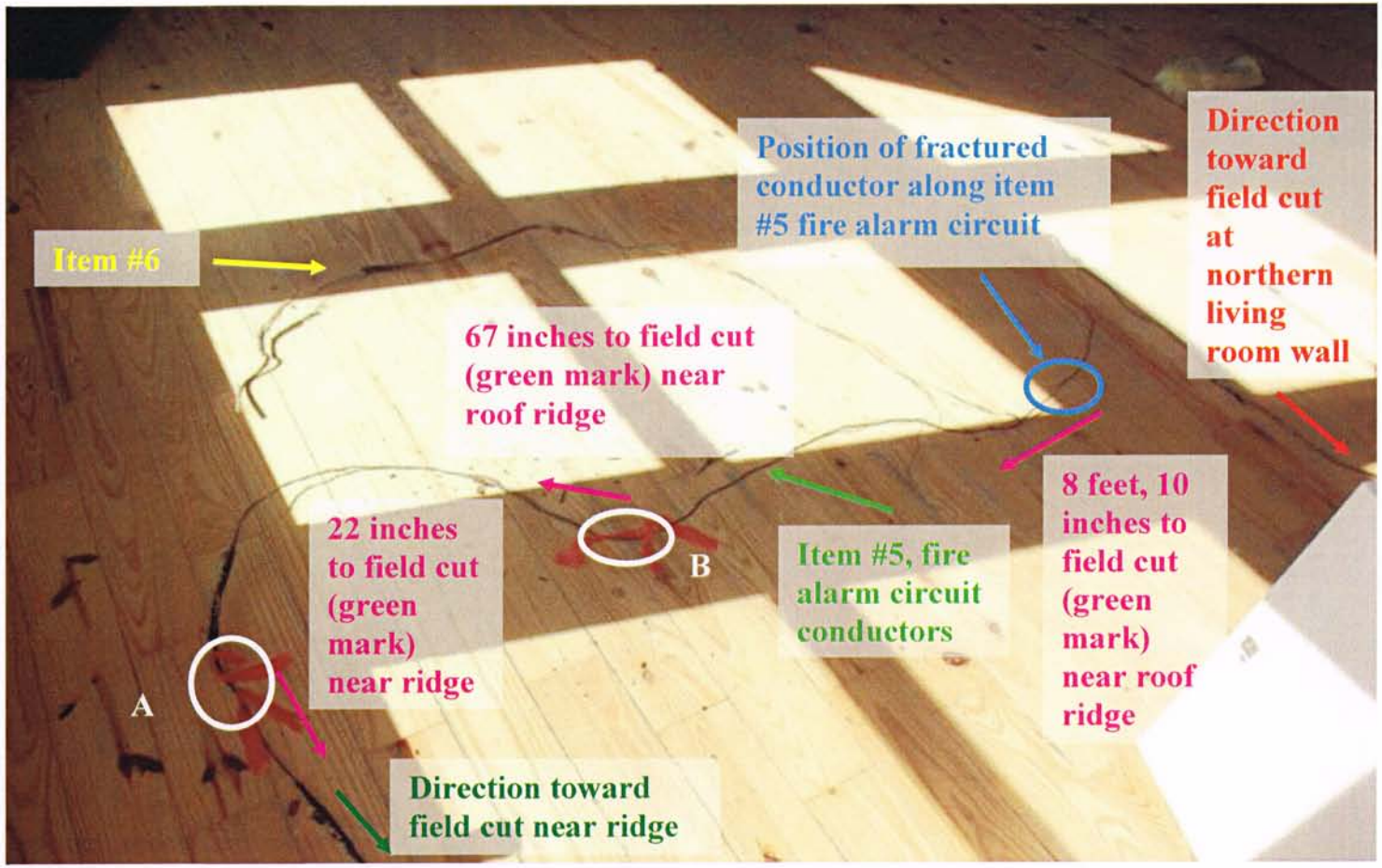
Photograph 7: View down slope toward the area of fire origin near the northern living room wall. Wiring serving the ceiling lights, master bedroom light circuit, and fire alarm circuit (item #5) are indicated.



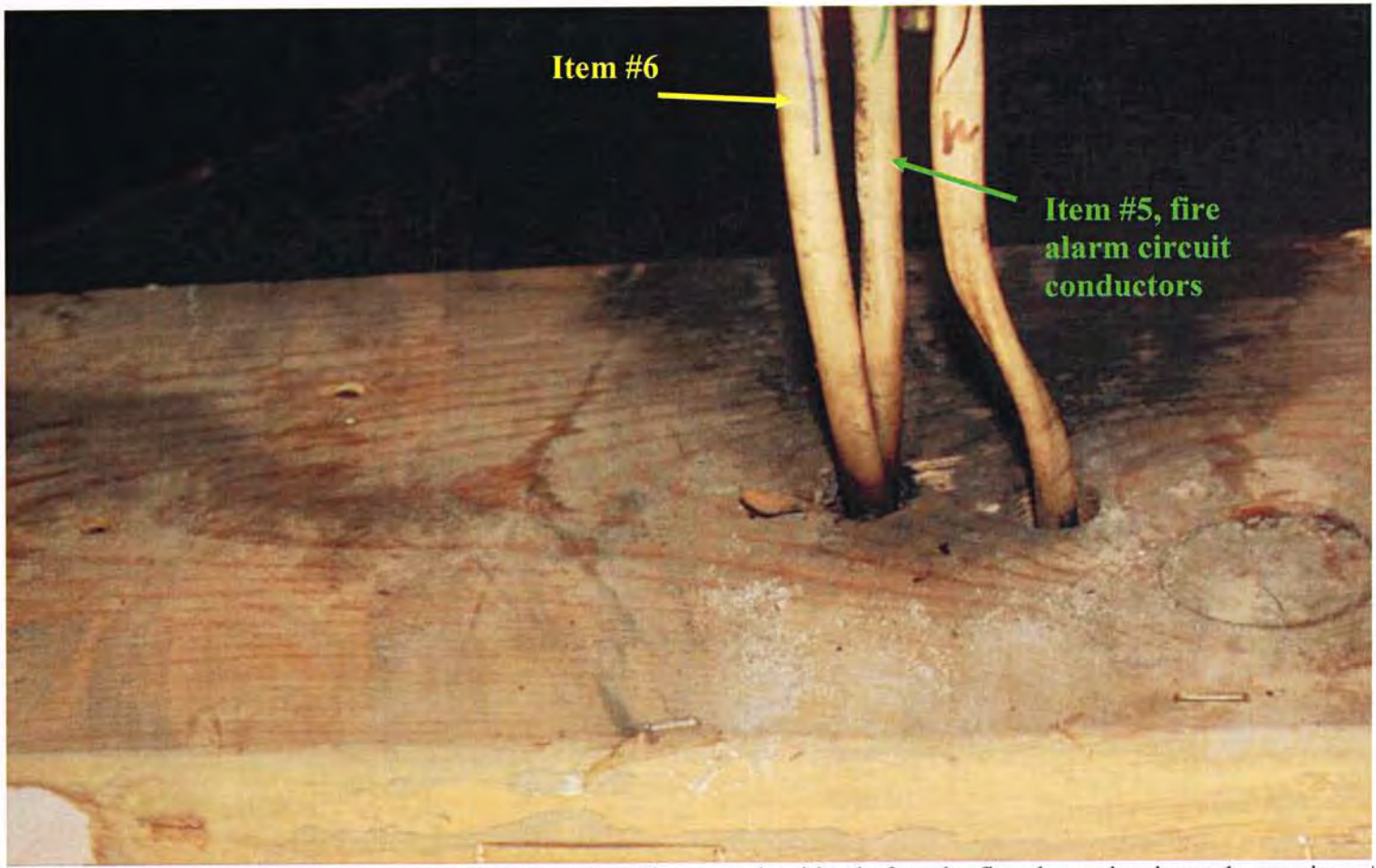
Photograph 8: Close-up view depicting the location of the fractured conductor (encircled in purple) along the fire alarm circuit (item #5) with the position relative to the field cut near the roof ridge indicated. (Note: image cropped and enlarged from Photograph 1)



Photograph 9: Alternative view of the fractured conductor (encircled in purple) along the length of item #5. (Note: Image cropped and enlarged from Photograph 3)

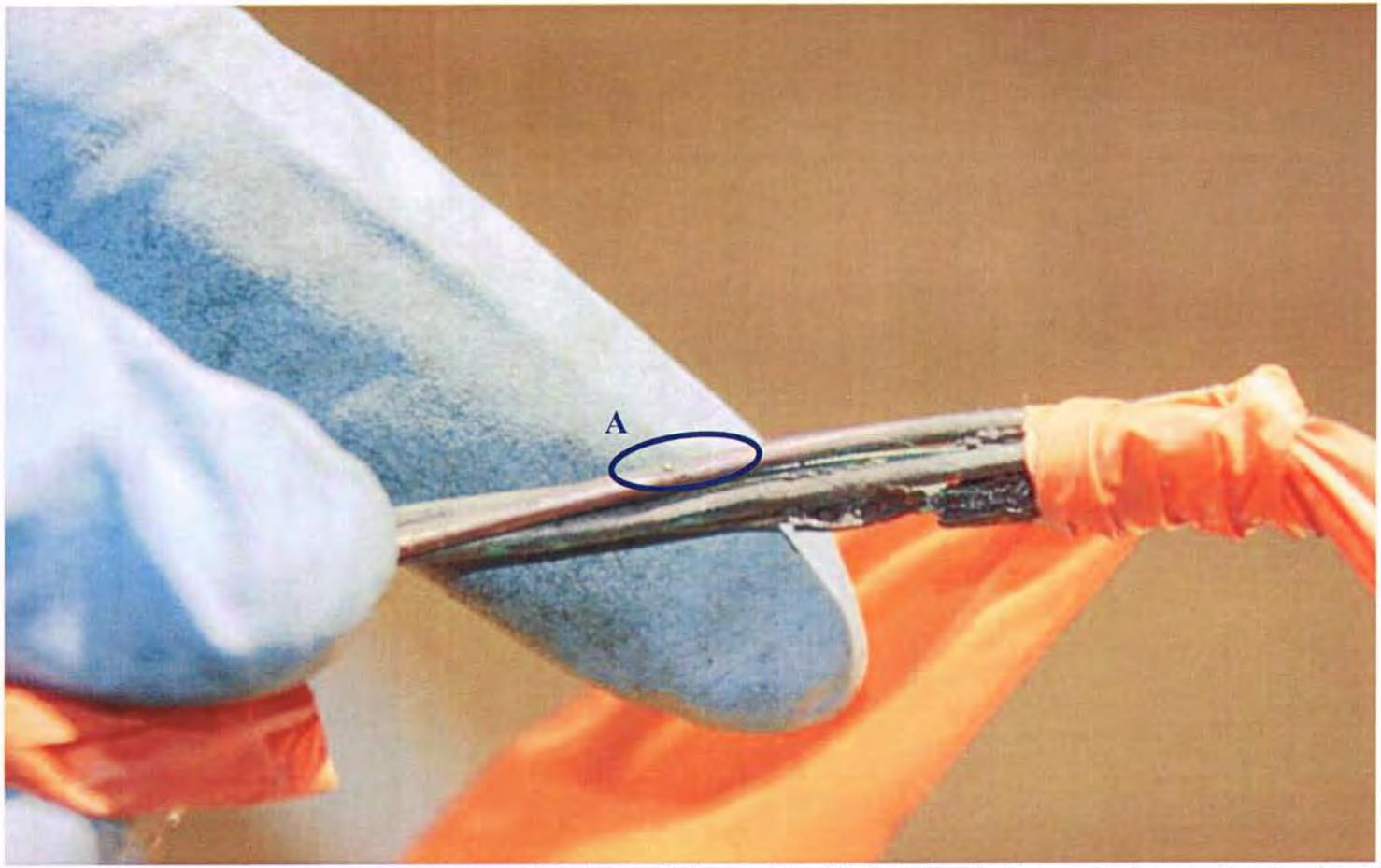


Photograph 10: View of wiring collected as items #5 and #6 during the October 2011 joint site inspection. The relative dimensions from the field-cut end (green mark) of item #5 to the regions of electrical activity (A and B) and the fractured conductor are depicted. Conductors of region 'B' were cutout from the length of this wire during the September 27, 2012 wiring inspection.

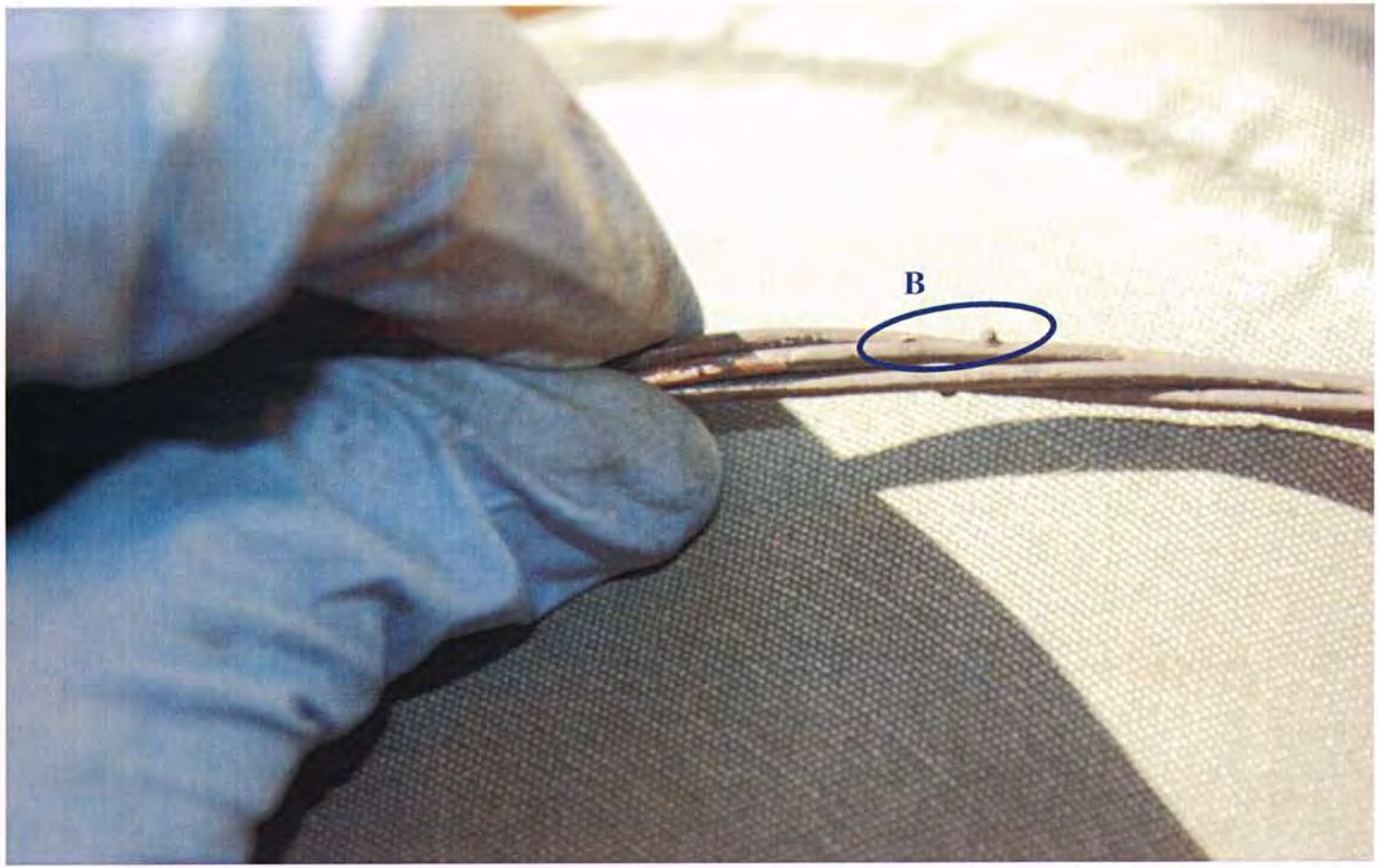


Photograph 11: Close-up view wires marked for orientation near the ridge before the fire alarm circuit conductors item #5 (green mark) and wires of items #6 (blue mark) were cut. This photograph is captured looking southward.

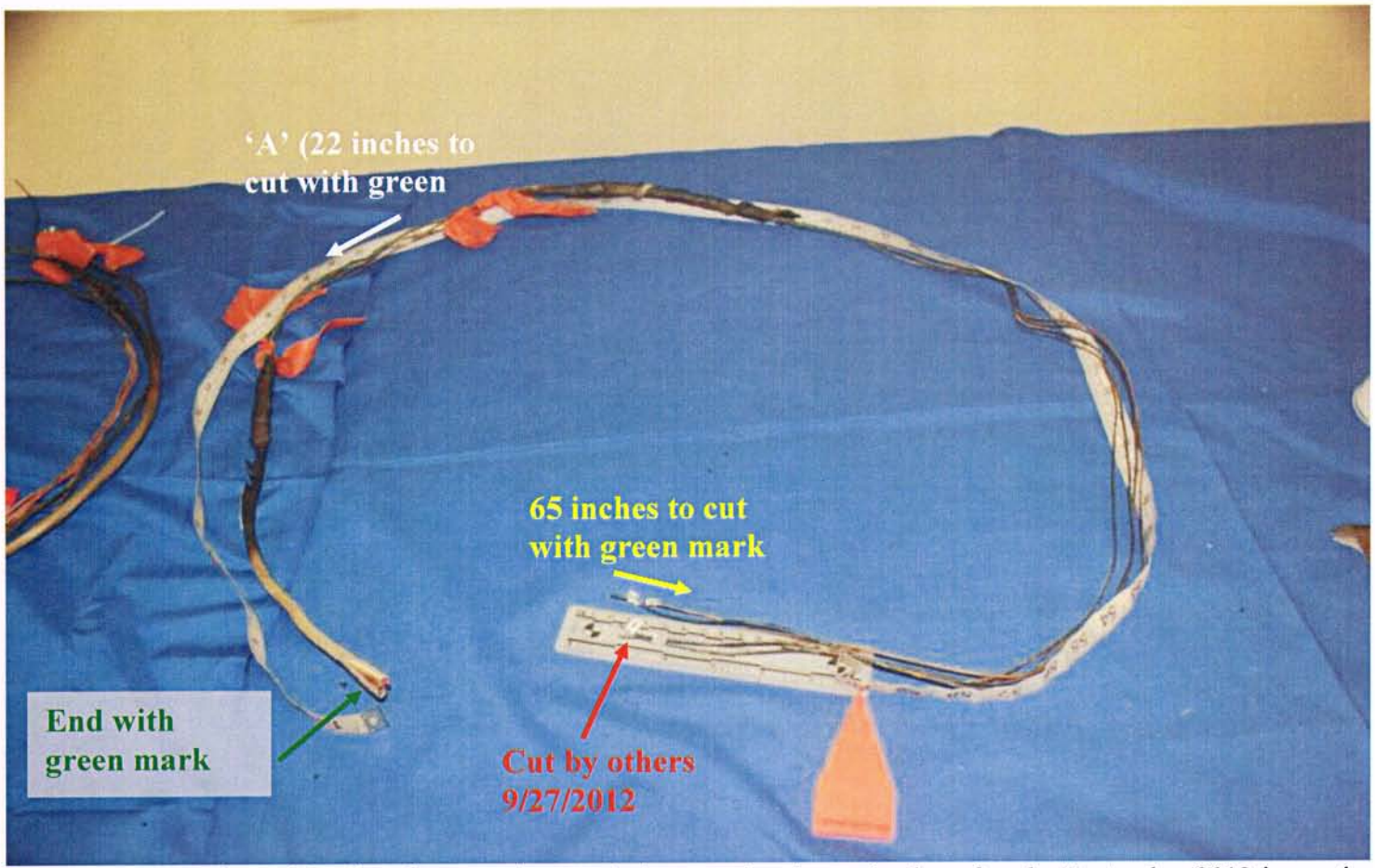
Photograph 12: View of the position along the northern living room wall where the fire alarm circuit conductors (item #5) were cut for removal at the field-applied red marking.



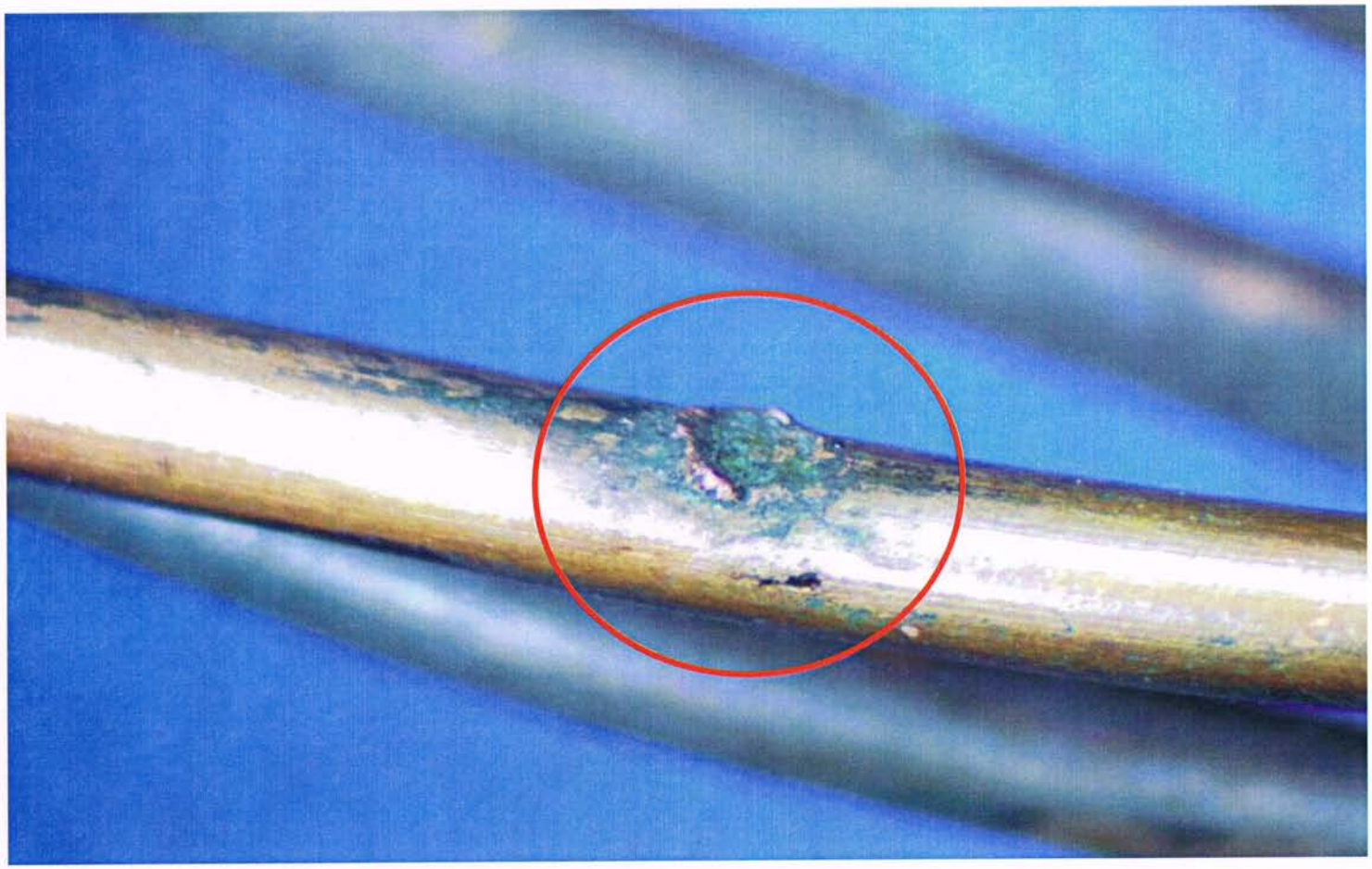
Photograph 13: An oval surrounds apparent electrical activity, as identified during field examination on October 21, 2011, denoted in this supplemental report as region 'A'. This condition presented 22 inches north along the fire alarm circuit conductors (item #5) from the field cut near the ridge (green mark). The artifact developed upslope from and outside of my area of fire origin.



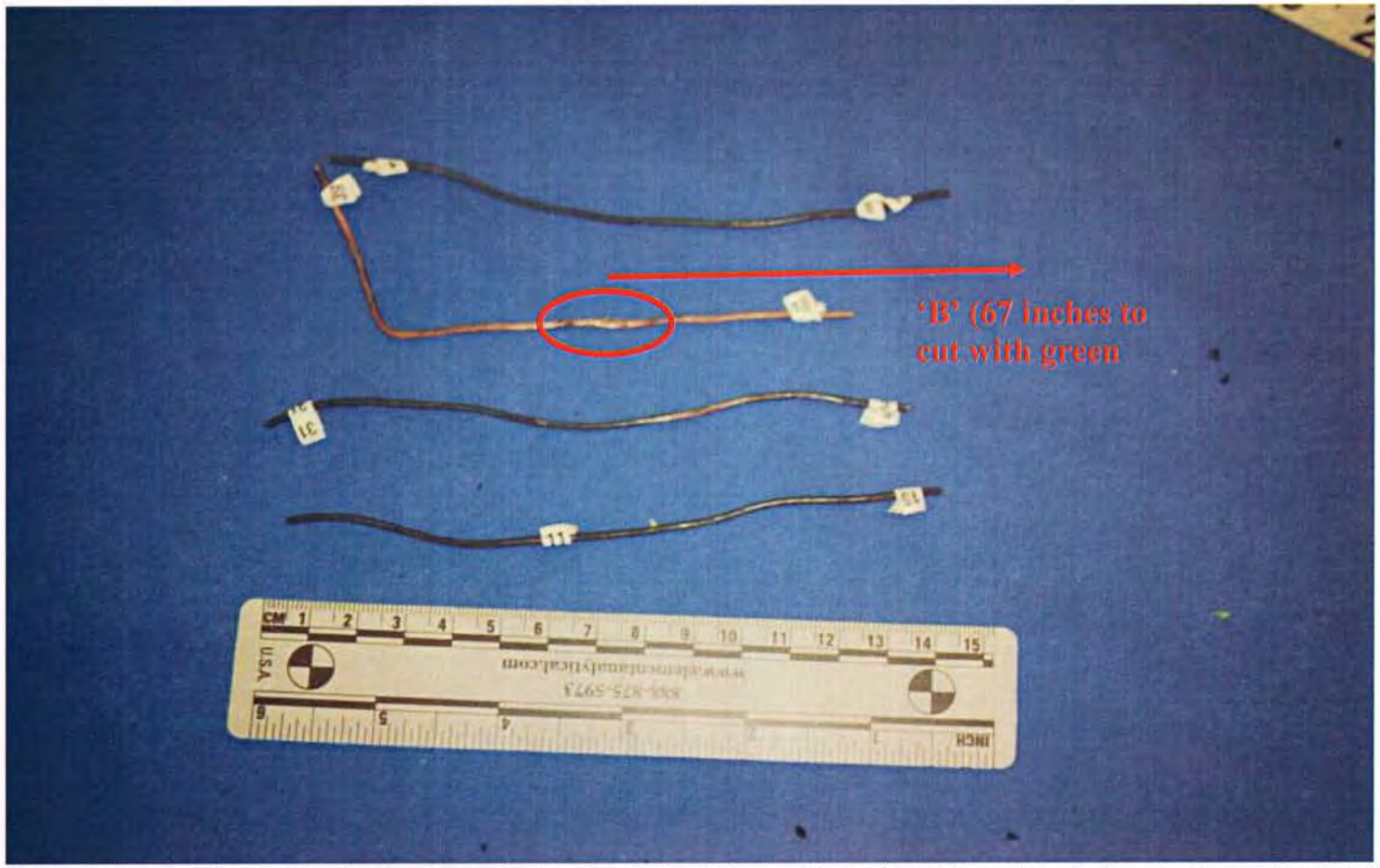
Photograph 14: An oval surrounds the artifacts of electrical activity identified during field examination on October 21, 2011, denoted in this supplemental report as region 'B'. The condition was positioned along the fire alarm circuit conductors (item #5) about 67 inches north from the field cut near the ridge (green mark.). This artifact was located in the middle of the region sectioned during the September 27, 2012, inspection by others. The artifact was located upslope from and outside of my area of fire origin.



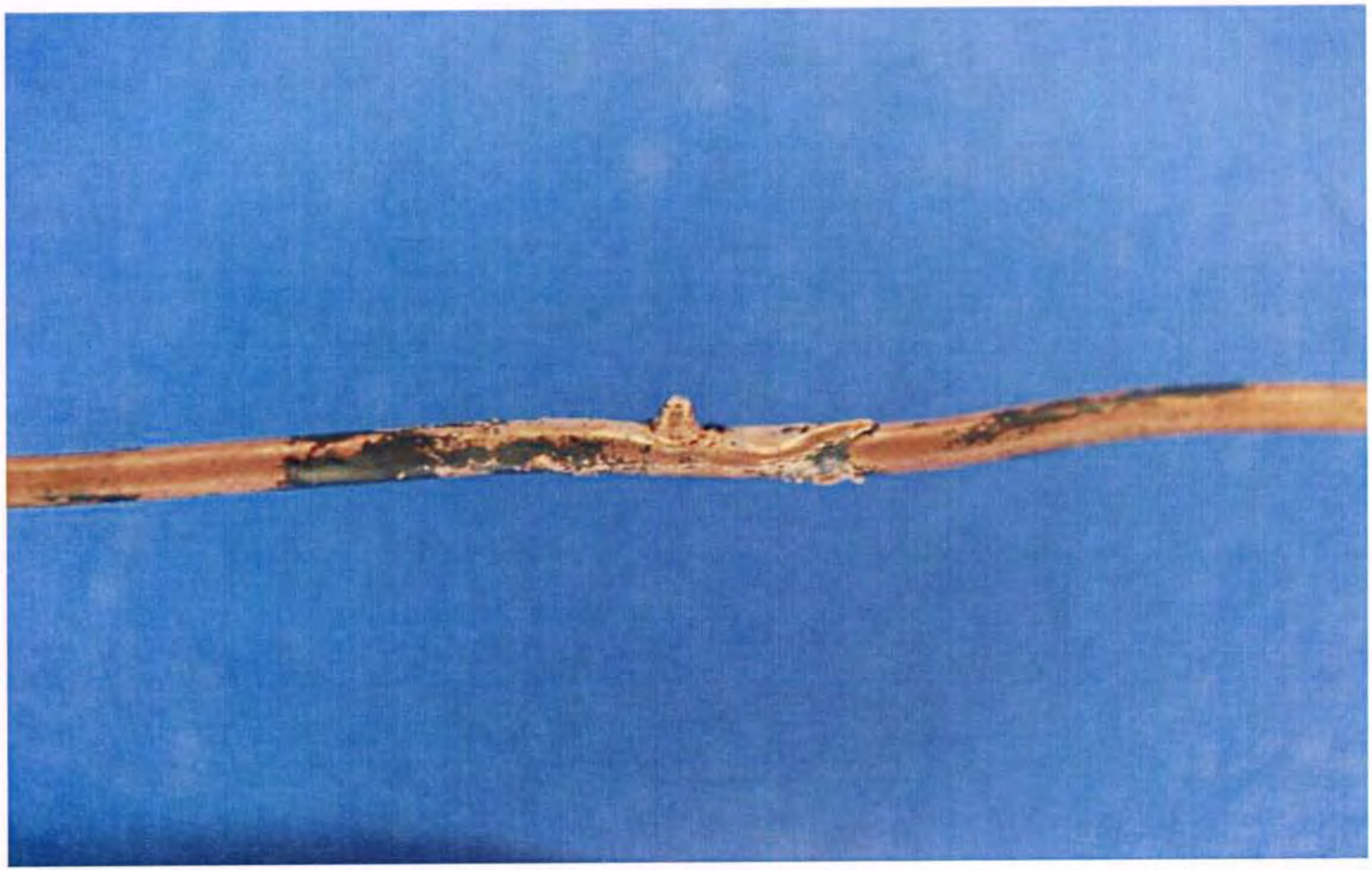
Photograph 15: View of the fire alarm conductors during my visual examination after the September 2012 inspection by others. The cut end (green mark) from near the roof ridge, position of the artifact in region 'A' and the length to the cut ends (5, 15, 18, 8) are indicated.



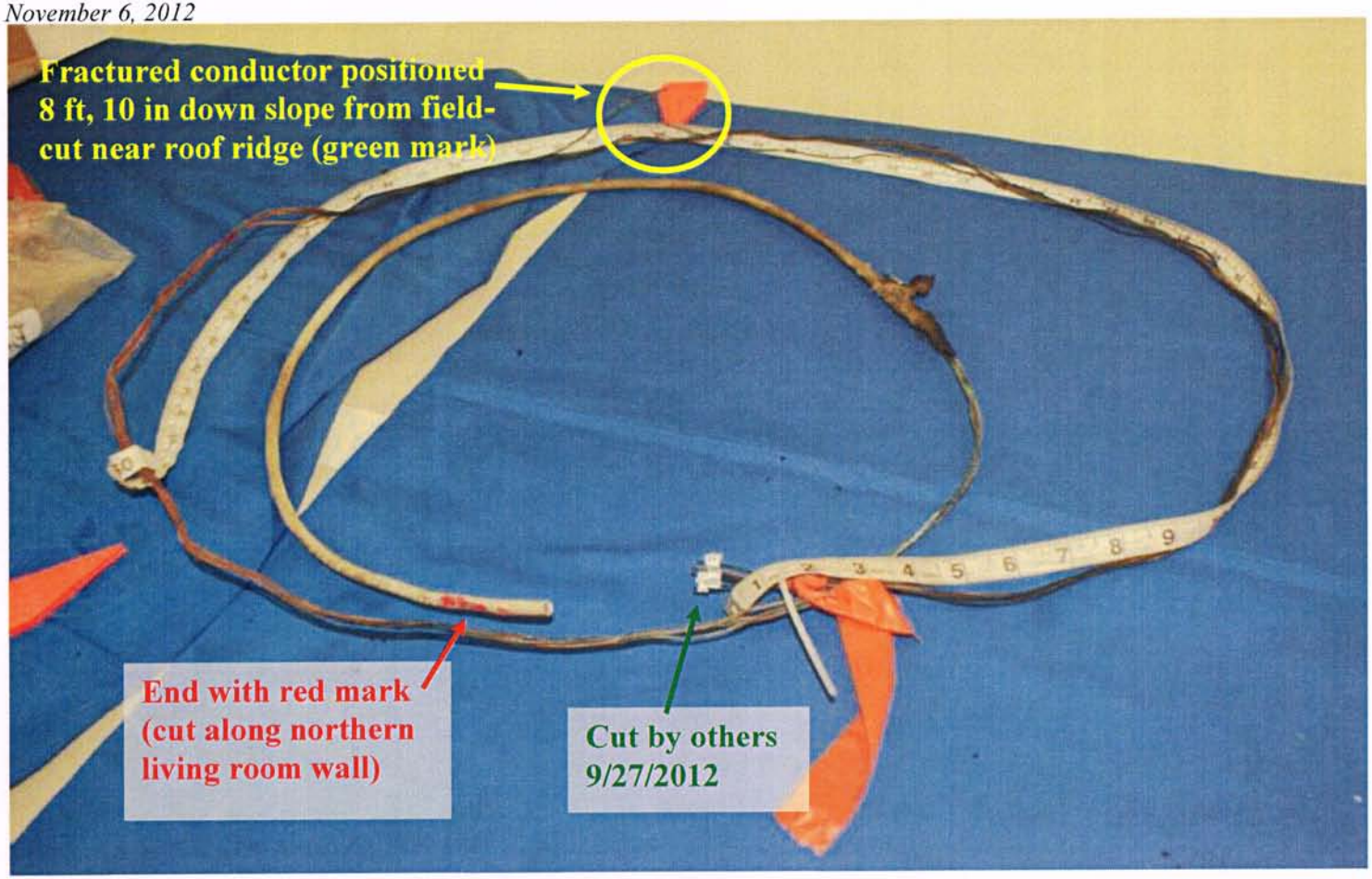
Photograph 16: Close-up view of the region identified in this supplemental report as 'A' captured during my recent visual examination of the fire alarm conductors (item #5). The encircled artifact was positioned 22 inches north of the field-cut end near the roof ridge.



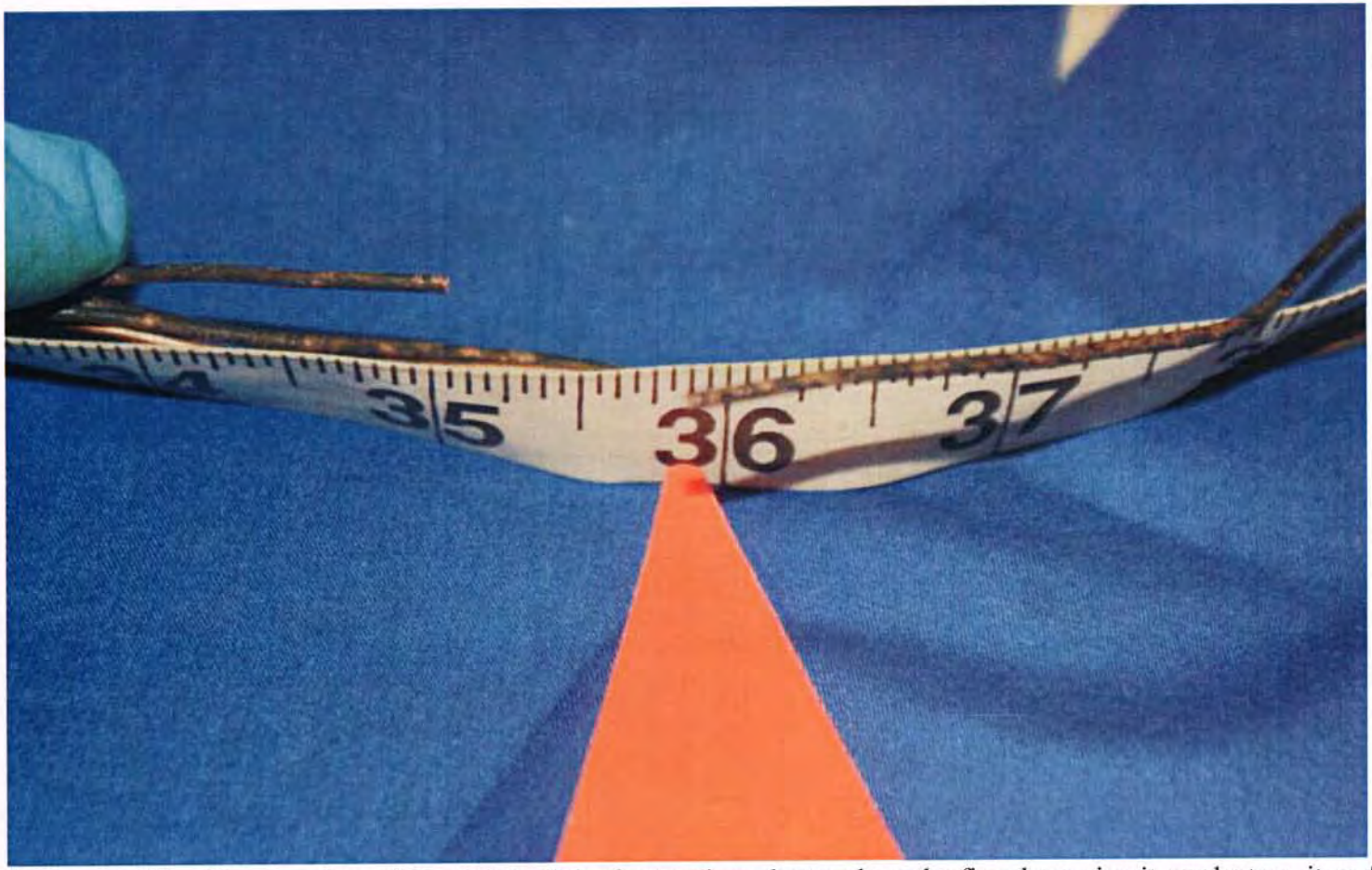
Photograph 17: View of conductors from the fire alarm circuit (item #5) sectioned by others during the September 27, 2012 inspection. A circle surrounds the artifact of electrical activity, identified as region 'B' in this supplemental report, that was positioned about 67 inches north of the cut end with the green mark near the roof ridge.



Photograph 18: Close-up view of the region identified in this supplemental report as 'B' captured during my recent visual examination of the fire alarm conductors (item #5). This artifact was positioned in the middle area of the conductor marked with ends 18 (southern extent) and 39 (northern extent) during the September 27, 2012, inspection by others. My measurements indicated this artifact positioned about 67 inches north of the field cut end near the roof ridge.



Photograph 19: View of the remaining portion of the fire alarm circuit conductors originally down slope from those sectioned during the September 27, 2012 inspection by others. The overall length of the wiring shown here is 12 feet, 4 inches, and the fractured conductors (encircled) were positioned 8 feet, 10 inches down slope from the cut near the roof ridge.



Photograph 20: Close-up view of the region of the fractured conductor along the fire alarm circuit conductors, item #15. Dimensional analysis revealed this condition positioned 8 feet, 10 inches north of the field cut end near the roof ridge.

Photograph 21: View looking upward at the northern roof slope above the living room in an image captured during construction and provided by the homeowner.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION
Civil Action No. 5:12-cv-289-BO

STATE FARM AND CASUALTY COMPANY as subrogee of CHRISTOPHER TAYLOR,	)	
Plaintiffs,	)	Volume I of I Pages 1-248
v.	)	
LOUISIANA PACIFIC CORPORATION,	)	9:02 a.m.-4:36 p.m.
Defendant.	)	(VIDEOTAPED)

Deposition of: J. ROBERT McGRAW, JR.
November 26, 2012

at the law offices of Ellis & Anthony, 343 South White Street, Suite C, Wake Forest, North Carolina.

APPEARANCES

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Reported By:
Frances A. Graham

Videographer:
Danny A. Graham

TABLE OF CONTENTS

E X H I B I T S

STIPULATIONS

It is hereby stipulated and agreed between the parties to this action, through their respective counsel of record, that:

1. The deposition of J. Robert McGraw, Jr. may be taken on November 26, 2012, beginning at 9:00 a.m. at the law offices of Ellis & Anthony in Wake Forest, North Carolina, before Frances A. Graham, a notary public;

2. Said deposition shall be taken for the purpose of discovery or for use as evidence in the above-entitled action, or for both purposes;

3. Any objection of any party hereto as to notice of the taking of said depositions or as to the time or place thereof, or as to the competency of the person before whom the same shall be taken, is hereby waived;

4. The Federal Rules of Civil Procedure shall control the taking of said depositions and the use thereof in court;

5. Objections to questions and motions to strike answers need not be made during the taking of this deposition but may be made for the first time during the progress of the trial of this case, or at any pretrial hearing held before any judge for the purpose of ruling thereon, or at any other hearing at which said deposition might be used, except that an objection as to the form of

the question must be made at the time such question is asked or objection is waived as to the form of the question;

6. The signature of the deponent to the transcript of his testimony is hereby required;

7. Except as waived by these stipulations, the provisions of the Federal Rules of Civil Procedure shall apply to the taking of said deposition and to its submission to the respective deponent, certification, and filing with the appropriate noticing attorney.

(Whereupon at 9:02 a.m.)

J. ROBERT MCGRAW, JR., being first duly sworn, testified as follows on

EXAMINATION BY MR. ELLIS:

MR. ELLIS: Why don't we begin by identifying who is here. I'm Neal Ellis and I'm here for Louisiana Pacific.

MS. MACLEOD: And I'm Skye MacLeod and I'm here on behalf of State Farm Mutual Insurance Company.

MR. ELLIS: The witness is Mr. McGraw?

MR. MCGRAW: Yes. Rob McGraw.

Q. Mr. McGraw, tell us, first of all, what your full name is.

A. My name is James Robert McGraw, M-C-G-R-A-W, Jr., I go by Rob.

Q. And where do you live?

A. I live at 315 Camden Branch Drive in Cary, North Carolina.

Q. Where are you employed?

A. I'm self-employed. The company name is Element Analytical; we are based out of Knightdale, North Carolina.

Q. When you say you are self-employed does that mean that you are the only employee of the company or are there others?

A. Myself and my partner. We don't have any employees, we are both owners.
Q. What is your partner's name?
A. Michael Lester.
Q. How long have you been with Element Analytical?
A. Four years and three months.
Q. And would you tell us what the nature of the business of Element Analytical is?
A. We are consulting forensic engineers.
Q. What does that mean to be a consulting forensic engineer?
A. We apply our engineering knowledge, education, and training to the investigation and analysis of failures that may involve anything related to structures, fires, water damage, storm damage, product failures, component issues.
Q. Can you give us some examples of what that means, what kinds of products you work with? What kind of product failures are you involved with?
A. Yes, sir. We look at various appliance failures that may be the result of, or produce water damage, or fire damage. Any kind of variety of product that may sustain a loss or sustain some sort of damage we may be involved in looking at, whether it be a fire or

explosion, water damage, personal injury. Those are the types of products we can become involved and look at.
Q. Do you work with automobile accidents?
A. I do not.
Q. Have you in the past?
A. I have.
MR. ELLIS: I'm going to ask the reporter to mark as the first deposition exhibit your curriculum vitae. That would be Exhibit No. 27; is that correct?
(DEFENDANT'S EXHIBIT NO. 27 MARKED)
Q. Do you have Exhibit 27 in front of you?
A. I do.
Q. Can you identify that, please?
A. Yes, sir. It is my resume or curriculum vitae.
Q. Tell us, first of all, where you were educated, sir.
A. I received a Bachelor of Science degree in Civil Engineering with a Construction Option from North Carolina State University. I followed that with a Master of Science in Fire Protection Engineering from the University of Maryland at College Park.
Q. When you studied civil engineering at N.C. State, could you tell us basically what that involved?
A. It involved understanding how things were

constructed. After establishing a basic fundamentals of engineering statics and dynamics and solid mechanics, the focus then was on additional structural analysis, building systems, and various construction activities, estimating, things of that sort.
Q. This says here that you had a construction option; is that correct?
A. That is correct.
Q. What does that mean?
A. Well, the degree program has now changed; it's now entitled, I believe, Civil Engineering and Construction Management, I don't know the exact current designation. But a civil engineering degree with the construction option at that time was a focus on, essentially, the management and activities that might undergo someone, that might be undertaken, rather, by someone that's a general contractor.
Q. Were you ever involved in the construction business yourself?
A. No, sir.
Q. Have you ever constructed a home?
A. No, sir.
Q. Next on your resume you indicate that you attended the University of Maryland at College Park and obtained your Master of Science; is that correct?

A. In Fire Protection Engineering; yes, sir.
Q. Tell us what is meant by fire protection engineering.
A. Fire protection engineering is the application of engineering principles to the study and analysis of fire dynamics, flame spread, investigation of fires, protection of life safety, design and development of life safety systems, sprinkler systems, and other fire protection particular applications or products.
Q. Does that mean that you concentrated, then, in devices or equipment that would protect a home from fires?
A. No, sir.
Q. What does it mean?
A. Well, the concentration that I had was related to fire dynamics, flame spread, and heat transfer.
Q. What do you mean by fire dynamics?
A. Well, fire dynamics is the understanding of the physics of fire, how it interacts with its surrounding environment, and then understanding how that applies for predicting heat release rates, measuring heat release rates in the laboratory we did in certain cases, and how that then interacts with the building systems.
Q. You also mentioned flame spread; what does that mean?

A. Well, flame spread in and of itself is just the study of the buoyant gases produced by combustion.
Q. I'm sorry, say that again. What?
A. Flame spread would just be understanding and studying the buoyant gases in the products of combustion, the flame itself, and how that affects the materials it's around in terms of ignition, or after ignition, then preheating and self-exposing other materials nearby, and how that fire then progresses through the spread of flame.
Q. I think you mentioned a third area that was part of this concentration. What was that? Fire dynamics, flame spread, and something else.
A. I don't recall exactly what I mentioned.
Q. Is there another area?
A. Well, there are a variety of different areas of concentration that can be undertaken. There are a variety of different aspects of fire protection engineering, whether it's an area of concentration or not.
Fire protection engineering encompasses, in addition to what we've discussed, fire investigations, understanding different material behavior. There are certain people that undertake certain studies of specific material rather than more broad.
Q. All right. Working down your resume here, in terms of your professional experience, you indicate that

you are a principal engineer with Element Analytical; is that right?
A. Yes, sir.
Q. And that's your present position?
A. Yes, sir.
Q. Were you a principal engineer with Element Analytical beginning in August 2008?
A. Yes, sir.
Q. Looking at the description there of what you do as a principal engineer, can you describe for us what you do with respect to each one of these items, management of engineering investigations first?
A. I can.
Q. Go ahead.
A. In terms of management of engineering investigations and inspections, I would categorize that together, just means the overall management of our assignment, our investigation or inspection assignment, from the beginning of receipt of it to coordinating an inspection, performing whatever inspections may be needed, follow up with our clients or whoever else they may choose to have involved, and then up to and including and through today's type of events, depositions, and wherever cases may end up.
Q. What does "consultation in the solution of

technical questions pertaining to fire origin and cause analysis" mean?
A. That means providing my services in a consultative manner to help answer technical questions related to fire origin and cause analysis; fire origin and cause analysis could otherwise be stated fire investigations.
Technical questions arise from anything from clients wanting to know where did the fire start, what caused the fire, all of the above, what other issues may be involved? There can arise questions such as survivability during fires, fire spread, discussion about products that may cause fires to spread faster or further or sooner. Other technical questions that arise oftentimes involve fire suppression and detection systems and how they interacted with the environment during the event.
Q. The next item is fire protection systems evaluations; what does that mean?
A. Evaluation of fire protection systems that I've performed include analysis of sprinkler systems for performance, analysis of sprinkler systems for failures, analysis of fire suppression systems, mostly in the commercial kitchen hood type of environment or application, as well as detection systems and smoke detector presence or absence during or after an event.

Q. All right. The next item is structural damage assessment; what does that mean?
A. We assess the nature and extent of damage to structures for various types and causes of loss.
Q. When you say you assess it, what does it mean you actually do? Do you assess dollar amounts of damage that have been caused to a structure as a result of the fire, or something else?
A. Typically, not a dollar amount. The structural damage assessment can be due to fires. We have done post fire damage assessments to help clients understand what needs to be removed and replaced, and we also do structural damage assessment related to foundation settlement, storm damage, water damage. Most often it involves the nature and extent of the damage, how much is affected, and then what component or components require removal, replacement, or augmentation.
Q. How soon after a fire has occurred would you do a structural damage assessment?
A. Depends on when the client calls. It depends on when the client calls to receive the assignment, and then they may have certain other requirements or stipulations or boundaries under which scheduling might occur after that.
Q. Would you want to be on the scene in order

Page 14

to perform an assessment like that as soon after the fire has occurred as possible?
A. Yes.
Q. Why is that?
A. Well, any type of assessment you would want to be able to look at it as soon as after the event as possible. That's a broad term, "as soon as possible." That can vary, depending on the nature and the circumstances of any situation, what the soonest is. But in order that things may not change or that they would change as little as possible, then, that would be a factor involved in that question.
Q. All right. Would you also want to be on the scene in order to investigate the location of origin of a fire as soon as possible after a fire has occurred?
A. Ideally, but it's not always necessary.
Q. Have you been on the scene of a place where a fire has occurred as soon as the day that the fire has taken place?
A. I have. I have been on the scene as late as six months or a year afterwards for a first inspection.
Q. But, ideally, you would want to be there as soon after the fire occurs as possible, correct?
A. I think, ideally, anybody that does this type of work would want to see the situation as much as

Page 15

possible in an undisturbed state, but we don't always work under ideal conditions.
Q. The next item here is building material defects; what does that mean?
A. That means assessment of various building materials that may have or may be alleged to have a defect.
Q. Can you tell me what kind of building materials you have investigated for defects?
A. The most prevalent building material that I've looked at typically involves cladding for windows, doors. In the early 2000s we did a lot with the exterior insulation of finish systems for synthetic stucco. We looked at a lot of hardboard Masonite products.
Building material defects can also include roofing, wallboard, gypsum sheathing, roof sheathing. Any sort of building material that could be applied could be investigated for various aspects, and that's what that is intended to encompass.
Q. Who have your clients typically been when you've investigated for building material defects?
A. They typically have been a representative of the homeowner's insurance company or, rather, the property's insurance company, or representative of an insurance company for a contractor or entity that may have performed work at that location.

Page 16

Q. Have you ever investigated radiant barrier sheathing as a possible building material defect?
A. Yes.
Q. In what case?
A. This particular case.
Q. Just this one?
A. Yes, sir.
Q. So you have never before this case been involved with investigating radiant barrier sheathing as a possible defective product?
A. That's correct.
Q. Have you been involved with investigations of fires and structures where radiant barrier sheathing was present, other than the Taylor house?
A. Not that I'm aware of.
Q. You don't know?
A. I have not seen it, but it may be present and I wasn't aware of it, in terms of it may have been obscured from whatever area I may have been dealing with.
Q. All right. When we are talking about areas in the home, do you recognize that radiant barrier sheathing could exist, not just in a roofing system of a home, but in other parts of a home as well?
A. Yes. From what I've reviewed, I can see that to be a possibility. I have not seen radiant barrier

Page 17

sheathing in another structure other than this structure.
Q. I see. But you have heard of it being used in parts of structures other than as part of a roofing system?
A. Based on my review of materials from this case, yes. That's the only exposure I have to it.
Q. All right. This also says that you've looked at water damage assessments; what does that mean? What is water damage assessment?
A. Investigating the source, nature, and cause of water damage, whether that be from potable water, rainwater intrusion, or surface water flooding; any of those would fall into that category.
Q. The next item here is appliance/product failures; what does that mean?
A. Inspection or investigation of appliances or -- when I say product, it may not be an electronic appliance or electrical appliance, rather, for an alleged failure, whether that be that it produced or was the origin for a water leak, or maybe it was the origin for some sort of fire, or some other event that has caused damage. We've been asked to undertake an inspection to answer the question why. That's typically what our work involves; there is a why question and we seek out to answer that.
Q. Give me some examples of the kinds of

Page 18

appliance or appliance failures you've dealt with.
A. I've looked at recessed ceiling lights, I've looked at laundry appliances, washers and dryers, kitchen, excuse me, small kitchen appliances, countertop items such as coffeemakers, toasters. I've had occasions to look at dishwashers. Any of those would fall in that category.
Q. The last item here is interpretation of codes and standards. What do you mean by that?
A. We are sometimes called upon to review a particular code or standard by our client and ask how it may apply to their case in our evaluation of the data that we've been presented.
Q. In connection with the Taylor home were you asked to interpret any codes and standards?
A. No, sir.
Q. Did any codes and standards apply to the investigation which you conducted in connection with this case?
A. The code or standard that would apply to the investigation would be the National Fire Protection Association Guide for Fire and Explosion Investigations, No. 921.
Q. No. 921. All right. And did you follow NFPA 921 in connection with the investigation in this case?
A. I strive to follow it and use it as guiding

Page 19

principles in my investigation.
Q. Were there parts of the standard that you could not follow in this case?
A. Yes.
Q. What parts of the standard were you not able to follow?
A. There would be parts of the standard that would relate to maybe marine vehicles, automotive vehicles, wildfire investigations, things that don't apply to structure.
Q. As to those parts of NFPA 921 that would apply to the Taylor home, were there any parts of the standard that you were not able to fully comply with?
A. I haven't done an assessment for compliance; I'm not sure that's my role to determine compliance. I strove to meet the general principles of it during the course of my investigation and analysis. I'm not aware that I did not comply and there was no particular section that I have chosen to not comply with.
Q. I'm not talking about your personal compliance now, necessarily. Are you aware of any part of NFPA 921 that you were not able to meet because of the status or condition of the home as you saw it, or anything else that might have prevented you from being able to conduct your investigation fully in accordance with 921?

Page 20

A. No. None of that would have changed the ability to conduct the investigation in accordance with 921.
Q. What does that mean? You said --
A. You asked a broad question.
Q. Yes.
A. So none of the status of the home, which I believe was your question, affected the ability to conduct the investigation in accordance with the guiding principles of NFPA 921. So am I aware? No, I'm not aware of any.
Q. All right. Who are your principal clients?
A. The majority of our clients are related to the insurance industry as most of our casework is derived from some kind of insurance claim, whether they be adjusters, attorneys, or some in-house investigators for those type of entities.
Q. Have you done work for State Farm in the past?
A. I have.
Q. About how many fire investigations have you conducted for State Farm?
A. I do not know; it's not something that I track.
Q. Just give me an estimate.
A. I'd prefer not to estimate. I do not know

Page 21

off the top of my head how many fires I've investigated for State Farm.
Q. You can't even give me an estimate?
A. It would be a guess at this point.
Q. How many total fire investigations have you done as a principal engineer for Element Analytical?
A. I don't know. I'd have to look back at my records. If I was to estimate, and this is just an estimate, somewhere on the order between 150 and 200 since we began the company in 2008. That's just an estimate. I don't know. I'd have to look at my records.
Q. And were all of those for insurance industry clients?
A. No.
Q. Who else have you done fire investigations for?
A. For various law firms that have hired us, hired me.
Q. Do you know whether or not they were representing insurance industry clients?
A. I don't know for certain. Some of them were, some of them likely were not. I don't know who they represented; they don't always tell us.
Q. All right. As you sit there, would you be able to tell us how many fire investigations you estimate

you've done for State Farm in excess of five?
A. I'm not going to estimate how many I've done and try to give bracketing to the number. I don't know. If it's a number that you need, we can deal with that if you need to know specifically. I don't know how many I've done for State Farm. It would just be pulling a number out of thin air, and I don't think that's appropriate for a deposition.
Q. Can you tell me whether or not the number exceeds ten?
A. I believe that it would, yes.
Q. Can you tell me whether it exceeds twenty?
A. Yes.
Q. Does it exceed fifty?
A. I don't know.
Q. The next item here on your resume is professional engineer with Forensic Engineering, Incorporated, in Raleigh, from January 2002 to 2008; is that right?
A. Yes, sir.
Q. Can you tell me how the work that you were doing with Forensic Engineering from 2002 to 2008 differed from what you presently do as a principal engineer with Element Analytical?
A. The general work was the same. There was

some less management, company management of course, since I was not an owner. There was a period of time when I did supervise additional investigators, provide some level of oversight there. And for some period of time during that duration I did work on vehicle accident reconstruction investigations, which I no longer perform.
Q. Would you tell us what you mean by vehicle accident reconstruction?
A. Vehicle accident reconstruction, the types of activities we undertook in that situation, involved collisions between automobiles or automobiles and pedestrians to understand whether it's a question of speed, sight distance, fault. There were a variety of different questions, technical questions, that could have been applied to any particular case.
Q. About how many vehicle accident reconstruction cases did you do while you were with Forensic Engineering?
A. I do not know.
Q. Are you able to estimate it?
A. No, sir.
Q. About how many fire investigations did you do while you were with Forensic Engineering?
A. I do not know.
Q. Are you able to estimate it?

A. I'm not able to estimate.
Q. Are you able to estimate what part of your time was devoted to vehicle accident reconstruction as distinguished from other parts of your job elements here at Forensic Engineering?
A. During that time frame, less than five percent if I had to estimate.
Q. Are you able to estimate what part of your job was devoted to fire investigation work?
A. Probably along the lines of 60 percent. That's an estimate.
Q. One of the items here under Forensic Engineering is fire cause and origin. Do you see that?
A. I do.
Q. Are you able to estimate how many times while you were with Forensic Engineering you were involved with the determination of fire cause and origin?
A. I believe you asked me that a moment ago. I am not able to estimate that.
Q. I said generally fire investigation, but with respect to fire cause and origin, specifically?
A. No, sir.
Q. You are not able to estimate that?
A. No, sir. Not as I sit here today.
Q. Prior to 2002 what was your job?

A. Prior to 2002 my job title was engineer in training, also at Forensic Engineering.
Q. In what way was being an engineer in training different from being a professional engineer with Forensic Engineering?
A. Well, the notable difference was I had no supervision role as an engineer in training, number one. Number two, the engineer in training designation resulted from my passing the first Principles of Practices of Engineering examination during college, which sets a professional designation, so the company chose that same designation for their personnel.
So after January 2002 when I completed the second half of that Principles and Practices of Engineering exam, which necessitated requisite experience, then the title was changed because I had professional licensure at that point.
Q. I thought you mentioned something about a supervision role with respect to engineer in training. What was that about?
A. You asked what the difference was.
Q. Yes.
A. One of the differences with my role at that company is I did not have a supervision role while I was an engineer in training; that did not come until a later time.

Q. And during the period of time that you acted as an engineer in training were you involved with fire cause and origin work?
A. Yes.
Q. Can you estimate, approximately, how many fire cause and origin investigations you did during that period of time?
A. I cannot. During my tenure at Forensic Engineering I investigated hundreds of fires. That's the best I can tell you.
Q. But you are not able to tell me or give an estimate as to how many fire cause and origin cases you worked on?
A. No more definitively as I sit here; no, sir.
Q. When did you obtain your professional engineering license?
A. January of 2002, for North Carolina.
Q. If I ask you to tell me by looking at the various items that are listed here under Engineer in Training experience, are you able to give me an estimate as to what part of your time was devoted to each one of these?
A. Probably not.
Q. Prior to being an engineer in training with Forensic Engineering how were you employed?
A. Prior to being an engineer in training with

Forensic Engineering I was in graduate school.
Q. That was the period of time that you spent at the University of Maryland?
A. Yes, sir.
Q. And prior to going to graduate school how were you employed?
A. Prior to going to graduate school I was in undergraduate school at North Carolina State University.
Q. Your resume indicates that you served with the Swift Creek Fire Department in Wake County; is that correct?
A. I still serve there.
Q. All right. Are you a volunteer fireman?
A. Yes, sir.
Q. And that started in February of 1999?
A. That's correct.
Q. Were you responsible as a member of the Swift Creek Fire Department for performing fire investigation work?
A. We do, yes. In certain situations, yes, sir.
Q. I'm asking about you; you said "we do."
A. Yes. In certain situations, yes, I do.
Q. Are you able to estimate for me how many fire investigations you've actually done for the Swift

Creek Fire Department?
A. I cannot estimate that. The fire investigations that I undertake as a member of the department are those fires that are small or incipient in nature and, typically, would not require any type of follow up. The way our arrangement is, when we undertake an investigation that requires documentation and additional witness statements and follow up, we bring in the local fire marshal's office to undertake those activities.
Q. What would the local fire marshal's office be for Swift Creek?
A. Wake County fire marshal's office.
Q. This indicates that you were with another fire department for some period of time; is that correct?
A. Yes, sir, while I was in graduate school.
Q. That's Prince George's County, Maryland, then?
A. Yes, sir. The Greenbelt Fire Department, which is part of the Prince George's County system.
Q. During the course of your work with the Prince George's County fire department did you perform fire investigations?
A. No, sir.
Q. In turning the page on your resume there is a list that begins under an item entitled Professional

Development. Do you see that?
A. Yes, sir.
Q. What are those? This goes over two pages.
A. Yes, sir. The professional development list are various courses or seminars and activities undertaken to maintain my professional continuing education.
Q. What is the requirement for continuing education for a professional engineer?
A. Fifteen hours per year.
Q. So these are all courses, then, that you went to in order to maintain that licensure requirement?
A. These are courses that I've attended and participated in in order to maintain my licensure requirement as a licensed professional engineer and also my fire investigation certifications.
Q. Have you taken any courses that are devoted strictly to the study of lightning?
A. I've taken one seminar that was related to lightning, particularly, and that was put on by one of the companies that has a lightning detection network, I guess is the right term.
Q. What is a lightning detection network?
A. Well, it was put on by the Vaisala Company that produces the STRIKEnet/STRIKEfax data product, and they have a system of technology that detects the location,

Page 30

presence, and details of lightning events.
Q. Which course was that?
A. It was entitled Lightning 101, it's on page number three. I attended that during 2003.
Q. That's Lightning 101 Seminar by Vaisala, Inc. in Raleigh, North Carolina, April 30, 2003; is that correct?
A. That's correct.
Q. How many hours was that seminar?
A. I don't recall.
Q. Was it a full day?
A. I don't recall.
Q. Do you know whether it was a half day?
A. I don't recall.
Q. You don't know? That's the only one on your list that's devoted to a study of lightning?
A. Yes, sir.
Q. Looking down at the Professional Associations which you've listed on the next page of your resume, do you hold a leadership position in any of those associations?
A. I do not.
Q. Do you do anything with those associations other than to participate as a member?
A. No, sir.

Page 31

Q. The next item further down on your resume is Publications. Do you see that?
A. Yes, sir.
Q. Were these publications all performed in connection with your master's degree work?
A. Yes, sir.
Q. And they are, principally, devoted to painted gypsum wallboard; is that correct?
A. That was the study undertaken; flammability and dehydration of painted gypsum wallboard.
Q. Why did you pick painted gypsum wallboard as a product to study?
A. Kind of the nexus for developing the thesis was to understand two aspects of gypsum wallboard as it could pertain to fire investigations, one being flammability and two being dehydration.
The dehydration aspect with regard to how the calcium sulphate dihydrate performs under various exposures to fire heat fluxes and how can that predict anything about the fire? And the second being, it's listed first but the second being flammability, to understand how different amounts of paint on gypsum wallboard affects flammability. One aspect that comes to mind is tenements or apartments that are rented and painted consecutively and over maybe tens or dozens of times, how does that affect fire spread

Page 32

on those surfaces.
Q. Have you had occasion to use that study work while you were at the University of Maryland in connection with your work as an engineer?
A. Yes.
Q. And was that in connection with trying to determine cause and origin of fires in buildings that may have had painted gypsum wallboard?
A. Yes.
Q. At the top of this page you've listed your Professional Registrations. Are all those current?
A. Yes.
Q. You've also listed Certifications. Do you see that?
A. Yes, sir.
Q. Are all those current?
A. Yes.
Q. Can you tell me, in connection with all of your work as a professional engineer or even as an engineer in training, approximately how many homes you've seen damaged by fires caused by lightning?
A. I cannot tell you that.
Q. Can you give me even an estimate?
A. No, sir.
Q. More than a hundred?

Page 33

A. Sir, I'd be purely guessing at this point. It's not something that I track, specifically, or that I have on the top of my head.
Q. Are you able to say whether it's more than ten?
A. Not as I sit here, no. Not with a level of certainty that I would feel comfortable telling you under oath. I'd have to review records to get that information.
Q. All right. And if I asked you whether or not you could tell me if you investigated fires caused by lightning in homes more than five times, you wouldn't be able to tell me that either?
A. I can probably think of five specific instances; after that, it would be purely guessing.
Q. And you're not able to tell me, by estimate or otherwise, the number of homes in which you investigated a fire where the home had radiant barrier sheathing?
MS. MACLEOD: Objection to form.
Q. Yes, that may have been way complicated. I didn't follow it myself.
Can you tell me, as you sit here, approximately how many homes where you investigated fires radiant barrier sheathing was present?
A. I know of one.
Q. And that's the Taylor home?

A. That's correct.
Q. All right. And you can't tell us whether or not it was present in any others?
A. It may have been present and I wasn't aware of it. I have not seen it in another residence.
Q. So the very first occasion on which you've done some work, fire investigation work, on a home that was damaged by a lightning-induced fire and radiant barrier sheathing was present, was the Taylor home?
A. Yes.
Q. In this particular case, can you tell me who it was that retained you?
A. I was retained by Mark Coffey.
Q. Who is Mark Coffey?
A. Mark, as far as I know he still is, at the time was an adjuster for State Farm Insurance Company.
Q. Can you tell me when you were first contacted by Mr. Coffey?
A. I was first contacted on the 12th of September 2011.
Q. You're looking at something now; is that correct?
A. Yes.
Q. What is it you are looking at?
A. Contents from my investigation file.

Q. What is the specific thing which you are looking at?
A. The Case Form is what we call it; it's the form we input all the information we receive on the location and what the assignment is of a particular case.
Q. And has that been produced to us, do you know?
A. I've been told that it has.
Q. That indicates that you were first contacted in connection with this case on September 12, 2011?
A. Yes.
Q. About a fire that occurred at the Taylor home on August 29, 2011; is that correct?
A. That's what I was told.
Q. What were you told by Mr. Coffey about your project?
A. I was told that this house had sustained fire; that they thought that lightning may possibly be related to this; that it was located in Louisburg, North Carolina; and he needed an origin and cause investigation into the fire. He informed me that the house had sheathing with radiant barrier and he was going to send me some information on that, as well as the details of the claim he would forward by email.
Q. What else did he tell you about the fact

that the house had radiant barrier sheathing?
A. The only other thing, I have a note that he told me that he was going to send me an article on it.
Q. An article?
A. Yes, sir.
Q. Did he tell you what the article was?
A. I don't recall if he told me at that time, specifically, about it. I recall he said, I believe, that an article had been found or located by the homeowner and it had to do with the radiant barrier performance under the influence, potentially under the influence of lightning, or just the radiant barrier performance.
Q. Did he ask you to read the article?
A. I don't know that he indicated one way or the other.
Q. He said he was going to send you the article?
A. He did.
Q. Did he send you the article?
A. He did.
Q. What was the article titled?
A. The article is entitled "Reflective Radiant Barriers Good for Energy Savings - Bad for Fire Safety."
Q. Is that an article that was prepared by McDowell Owens Engineering?

A. It is.
Q. When did you receive that article?
A. September 12, 2011.
Q. So the same day that Mr. Coffey called you, you received a copy of the article?
A. He forwarded the article to me as he indicated he would.
Q. By fax? Emailing?
A. Email.
Q. I'm sorry?
A. Email.
Q. Email attachment?
A. Yes, sir.
Q. What did Mr. Coffey tell you was the significance of the article that he was sending to you?
A. I don't recall specifically what he told me. I don't have a note of what he told me about anything regarding the significance of it. He indicated he would send me the article that the homeowner had located about this particular product.
Q. When you received it on September 12, did you read it?
A. I read it. I don't know when I read it.
Q. Did you read it before you went out and did any fieldwork in connection with this investigation?

A. Yes.
Q. After having read the article but before conducting any fieldwork, did you have any additional discussions with Mr. Coffey about radiant barrier sheathing?
A. No, sir.
Q. Did you have conversations with anyone about radiant barrier sheathing before actually going out and doing fieldwork in connection with this case?
A. No, sir.
Q. I'm going to ask you a broader question.
Do you recall having discussions with anyone about radiant barrier sheathing in connection with the Taylor home fire?
A. I have spoken with my business partner about it in the course of normal case review in discussion and review of cases that we do. I've spoken with Ms. MacLeod; I've spoken with Mr. Coffey; I've spoken with Mr. Taylor; I've spoken with Frank Strakonsky.
Q. I'm sorry. Could you spell that for me?
A. S-T-R-A-K-O-N-S-K-Y. Strakonsky. I'm not sure how you pronounce it. He's a representative of State Farm.
Q. Strakonsky?
A. S-T-R-A-K-O-N-S-K-Y.

Q. Strakonsky maybe.
MS. MACLEOD: I think it's Strakonsky.
MR. ELLIS: Strakonsky? Okay.
A. And I have spoken with Ms. MacLeod, and I've spoken with Ron Simmons of McDowell Owens.
Q. When did you first begin to perform work in connection with this investigation?
A. I'm not sure what you mean by work.
Q. Anything? Anything that you did?
A. On September 12, 2011.
Q. You had a call?
A. Uh-huh.
Q. What's the next thing that you did in connection with the investigation?
A. Entered the information that we received, set up a case file, then coordinated an inspection with the appropriate parties.
Q. All right. When you say "coordinated an inspection with the appropriate parties," does that mean that you set up a time to go investigate and look at the scene of the fire?
A. Yes.
Q. And who was it you contacted in connection with that?
A. Christopher Taylor.

Q. The homeowner?
A. He was my point of contact I was told to coordinate with.
Q. When did you talk to Mr. Taylor?
A. September 15, 2011.
Q. Did you try reaching him before September 15?
A. I do not have a note of that. When I took the case in from Mr. Coffey, I informed him that my first availability would be the 19th or the 20th of September, and he assigned the case and I accepted it under that understanding.
Q. Meaning your first availability to go out and actually look at the scene of the fire?
A. Yes, sir.
Q. What was the actual day that you went out and looked at the fire scene?
A. September 19, 2011.
Q. Prior to going out on September 19, 2011, did you do any work in connection with this investigation?
A. None other than what we've discussed.
(DEFENDANT'S EXHIBIT NO. 28 MARKED)
Q. I'm showing you what's been marked as Exhibit No. 28. Can you identify what that is for us, please?
A. I can.

Q. What is it?
A. It is a listing of our company's rate schedules.
Q. Does that show your billing rate?
A. It does.
Q. It also shows Mr. Lester's billing rate; is that correct?
A. It does.
Q. Your billing rate is $160 an hour?
A. Yes, sir.
Q. This also indicates what the fees would be for certain kinds of charges that may be incurred in connection with your work; is that right?
A. Yes, sir.
Q. Can you tell me, to date, how many hours you've put into this particular matter?
A. I cannot tell you off the top of my head how many hours, no.
Q. Can you give me an estimate of the number of hours of work you've performed on it?
A. I cannot. I can look at my recent reports and give you the number of what we've billed as a company. I would have to break out expenses and any time Mr. Lester may have to get to a number of hours.
Q. Can you tell me whether or not you've spent

more than ten hours on it?
A. Yes.
Q. Twenty?
A. Yes.
Q. Thirty?
A. I don't know. I'd have to run the numbers.
Q. Are you able to tell me how much you and Element Analytical have charged in connection with your work on this matter?
A. Yes.
Q. How much is that?
A. As of the 6th of September and issuance of my supplemental report, we had received $8,971.20 in compensation with an additional $4,145.75 in pending invoicing.
There's been additional time in preparation for the deposition and gathering the evidence and renting a trailer for today's activities as well that I have not yet recorded.
Q. Since September 6?
A. Yes.
Q. Do you know about how much additional time you've spent since September 6?
MS. MACLEOD: I'm going to object to form.
A. Since the 6th of September I've probably

spent between sixteen and twenty-four hours related to this matter.
Q. Has that been charged to your client?
A. Some of that will be. Some of that would be charged to you for deposition and evidence gathering for today's compliance with the subpoena.
Q. All right.
A. I apologize, Mr. Ellis. I said September 6, my supplemental report was November 6, so the numbers and all apply, the date is different. I apologize for that.
Q. So if we just substitute November 6 for September 6, we will come out with the right hours?
A. Yes, sir.
Q. Other than the testimony which you've given here today in connection with this case, have you given testimony in other pieces of litigation?
A. I have.
Q. And did you create a list of those in connection with your expert report?
A. I did.
(DEFENDANT'S EXHIBIT NO. 29 MARKED)
Q. I'm showing you what's been marked as Exhibit No. 29. Can you identify that?
A. I can.
Q. What is it?

A. It's a list of my deposition and trial testimony given in the last four years.
Q. The first one on the list there is David Stagemeyer et al versus John R. Sturges et al. Do you see that?
A. Yes, sir.
Q. And in the column on the far left of this page there is a "D" which appears next to it; is that correct?
A. Yes.
Q. Does that stand for deposition?
A. It does.
Q. You gave a deposition in that case then?
A. Yes.
Q. Was that on January 30, 2008?
A. Yes.
Q. And can you tell us the subject matter of your testimony?
A. That was a fire origin and cause investigation involving a residence under construction.
Q. Was the residence in Nash County?
A. Yes. To the best of my recollection.
Q. What did you determine to be the fire cause and origin?
A. The fire origin, the specific origin was

undetermined due to the extent of damage and delay in notification. The cause was determined to be -- specific cause was undetermined, but the nature of it was that it was an incendiary event.
Q. And what does it mean to be an incendiary event?
A. Incendiary means that the fire was started by a person or persons in a situation in which they should have known that it should not have been started.
Q. Were you able to determine how the person started the fire?
A. In this particular case, no.
Q. How soon after the fire were you asked to investigate it?
A. I do not know.
Q. Was it a day?
A. I do not know.
Q. A week?
A. The fire was five or more years ago. I do not know, do not recall, and I no longer have access to those file records.
Q. When you say you no longer have access to the records, what does that mean?
A. That's a Forensic Engineering file; I'm no longer associated or employed with them.

Page 46

Q. You never testified at trial in connection with that case?
A. No, sir.
Q. Do you know whether or not it went to trial?
A. I do not know.
Q. Was there an attorney that you worked with on the case?
A. There was.
Q. What was the attorney's name?
A. Steve Lawrence.
Q. Was Mr. Lawrence's firm representing the plaintiff or the defendant in the case?
A. In that case they were representing the plaintiff.
Q. Do you know whether or not this was a subrogation matter where an insurance company was involved or not?
A. I don't know the details there. An insurance company was involved. There may have been some subrogation matters involved at some point in time. I recall that being an issue that he was dealing with, with potentially some other attorneys, so I do not know the details of that; I was never privy to that.
Q. Do you know who the attorney was for the defendant in the case?

Page 47

A. I do not recall.
Q. The next item here is Leonard Spruill et al versus Energy Systems Analysts, Inc. Do you recall that matter?
A. Yes.
Q. And that has a "D" next to it, so that was a deposition you gave; is that correct?
A. Yes.
Q. And did you appear on behalf of Energy Systems Analysts, Inc.?
A. Yes.
Q. They were the defendant in the lawsuit; is that correct?
A. One of the defendants.
Q. That matter was in Johnston County, correct?
A. Yes.
Q. You gave the deposition on May 27, 2011?
A. Yes. That's not where I gave -- That's not where the incident occurred nor where I gave my deposition; that's where that case was brought forth, Johnston County.
Q. Understand. The deposition, though, that you gave in connection with the case was on May 27, 2011?
A. Yes, sir.
Q. Can you tell us what the subject matter of your testimony was?

Page 48

A. I was deposed as a standard of care expert with regard to the installation and purging of gas systems and oversight of that by other associated entities.
Q. Did you testify at trial in that case?
A. No, sir.
Q. Who was the attorney that you worked with in connection with that one?
A. David Coates.
Q. Do you know who the attorneys were that were representing the plaintiffs?
A. I can think of two right now, I believe there was a third and I'm drawing a blank. Ted Smythe, S-M-Y-T-H-E, and David Stradley, and I think there was a third but I'm drawing a blank. Andrew Cioffi.
Q. So it was the explosion of the plant in Johnston County?
A. No, sir.
Q. What was the explosion?
A. It was at a plant in Wake County.
Q. In Wake County?
A. Yes, sir.
Q. Which plant was it?
A. The ConAgra Foods plant.
Q. ConAgra?
A. Yes, sir.

Page 49

Q. And what opinion did you give in connection with that case?
A. I gave opinions regarding the standard of care with regard to installation and purging of gas piping that was pertinent to the development of events leading up to the incident.
Q. And was your opinion that the standard of care with respect to the installation of the piping was negligent?
A. I think I'd have to go back and actually review the documents in that case to tell you what my specific opinions were. I don't recall the specific opinions of this case. They had to do with the standard of care for a variety of entities, not necessarily as it pertained just to one sole entity.
Q. So your opinion, then, as to either breach or maintenance of the standard of care was given as to more than just one entity?
A. Yes.
Q. Do you recall what those entities were?
A. The particular entities that were involved, in addition to Energy Systems Analysts, was Jacobs Engineering, Southern Industrial Constructors -- I think it's Constructors, or Contractors -- we call them Southern Industrial, and I don't recall the other -- ConAgra

Page 50

themselves -- the other defendants or potential defendants. Questions arose about what the role of each particular party or employee of a party was, or should have been, or could have been.

Q. And did you determine in your view that any of these entities breached the standard of care?

A. Yes.

Q. Which ones?

A. Well, I think they -- I think I'd have to look back at my specific listing of opinions and how I was disclosed as an expert to give you those details, without talking off the top of my head, and I don't want to either neglect someone that I may have included nor include someone or some aspect of an issue that would be improper to recollect.

Q. The answer is as you sit here you don't know?

A. I don't recall, specifically.

Q. The next item down -- By the way, I can't recall whether I asked you this. Did you testify at trial?

A. No.

Q. The next item here is Nationwide Mutual Fire Insurance Company versus Research Products, Gwyn Electrical, Plumbing, Heating, and Cooling Company, John Does 1-5. Do you see that?

Page 51

A. Yes.

Q. You gave a deposition in that case?

A. Yes.

Q. The deposition was on behalf of Nationwide Mutual Fire Insurance Company; is that right?

A. Yes.

Q. And you gave that deposition on September 9, 2011; is that correct?

A. Yes.

Q. And the case was pending in Guilford County and has the file number on the far right-hand side of the document; is that correct?

A. Yes.

Q. What was the subject matter of your testimony in that case?

A. Fire origin and cause.

Q. What kind of a fire was it?

A. This was a fire in a residential structure that originated at an air cleaner in the basement of the dwelling.

Q. What was your opinion?

A. My opinion was that the fire originated at the April Aire brand air cleaner, and that the damage indicated the fire originated inside that product and that, generally, that product was the cause of the fire; failure within that product.

Q. And what was it specifically that led you to determine that the product was the cause of the fire?

A. The product itself exhibited localized heat damage and electrical arcing activity evidence inside of its housing, and that was the extent of my discussion or investigation assignment with regard to cause.

Q. What attorney did you work with in connection with that?

A. I don't recall his name.

Q. Do you recall the name of any of the lawyers on the other side of the case?

A. I was deposed by Marshall Wall.

Q. Did you testify at trial in that case?

A. No. It did not go to trial.

Q. All right. The next one is Bost Construction Company versus Mary Lynn Baukmun Blondy, and Bost Construction Company versus Tri-City Contractors, Inc.; is that right?

A. Yes, sir.

Q. And you testified in that case on behalf of Tri-City Contractors; is that correct?

A. Yes, sir.

Q. And that was a deposition, correct?

A. Yes.

Page 53

Q. Did you testify at trial in the case?

A. No.

Q. The deposition was given on November 17, 2011; is that right?

A. Yes.

Q. The case was, or is, pending in Chatham County with the number that is given on the far right-hand side of the form; is that right?

A. Yes.

Q. What was the subject matter of your testimony in that case?

A. The subject matter in that case was regarding alleged construction defects pertaining to water intrusion, with the allegation being that the drainage installed by my clients, or the contractor that I represented, was improper.

Q. So this didn't relate to a fire; it related to water damage?

A. Yes, sir.

Q. And can you tell me specifically what your opinion was in the case?

A. My opinion was that the drainage system as installed was properly sized for the anticipated normally occurring weather and that the events that led to the water damage weren't related to the design of that system.

Page 54

Q. What attorney did you work with?
A. David Wisz, W-I-S-Z.
Q. Do you recall the attorney's name on the other side of the case?
A. The deposing attorney was Dan Bryson.
Q. Is that case still pending?
A. I believe not.
Q. Are any of the cases on this list still pending?
A. Not to my knowledge.
Q. So you've never given testimony at trial in connection with any case; is that right?
A. That's not correct.
Q. What cases have you given testimony at trial in?
A. I've given testimony at trial in cases previously; one time as a fact witness, the second instance as an expert.
Q. Would that be prior to the four years on this form?
A. Yes.
Q. Tell me first about the fact witness testimony that you've given at trial.
A. The fact witness matter, I became involved in an accident reconstruction involving a pedestrian and I

Page 55

documented the accident scene location and testified as to the physical geometry of that incident site.
Q. And you were just giving fact evidence?
A. Yes.
Q. And that was while you were employed by Forensic; is that correct?
A. Yes.
Q. And you said you also testified at trial as an expert in a case?
A. Yes.
Q. When was that?
A. I don't recall. The 2003, 2004, 2005 time frame; I'd have to look at my records.
Q. Do you recall the name of the case?
A. I do not recall the specific case name.
Q. Do you recall any of the names of the parties that were involved in the case?
A. The only party I can recall specifically is I think it was Bern, B-E-R-N, Square, and the only reason I know that is because I drive by it frequently and I see the shopping center sign at the incident location.
Q. You said Bern Square?
A. Uh-huh.
Q. And what attorney did you work with in connection with your expert testimony in that case?

Page 56

A. Bill Lederer, L-E-D-E-R-E-R. It was two attorneys, the other one's name was Curtis, and I don't remember his last name as I sit here.
Q. Who were the attorneys on the other side of the case from you?
A. The two attorneys I recall, Scott Hart and Scott Scurfield.
Q. What was the subject matter of your expert testimony in that case?
A. It was a personal injury slip/fall case in a parking lot.
Q. What was the nature of the opinion that you gave?
A. The nature of the opinion that I gave was that the material applied to the parking lot presented a slippery surface and that the parking lot, that there are no standards for parking lots in terms of slip resistant slope designed for pedestrian use.
Q. Did you give a deposition in that case before testifying at trial?
A. I believe I did.
Q. Other than the Bern Square matter which you just identified, have you ever testified as an expert at trial in a case?
A. No.

Page 57

Q. Were you qualified as an expert in that case?
A. Yes.
Q. And the nature of the expertise that you were qualified to give?
A. I believe the judge qualified me as an expert civil engineer.
Q. So you've never been qualified to testify at trial in a case as an expert witness in fire investigations, fire cause or fire origin; is that correct?
A. Never had the occasion to get to that point; no, sir.
Q. Have you given other depositions than the ones that are on this list here?
A. Yes.
Q. How many of those have you given?
A. I don't recall exactly how many I've given. The few we just spoke about. I'd have to look at my records. I don't recall. I did not produce those as that was not a requirement for the Rule 26 report.
Q. Understand. Do you know whether or not you've ever testified about fire cause and origin in a residential home fire involving lightning?
A. I have not. Have not had the occasion to.
Q. Neither by deposition or at trial?

Page 58

A. No, sir.
MR. ELLIS: Let's take a short break.
(Pause in proceedings 10:17-10:25 a.m.)
Q. Mr. McGraw, we had talked a little bit earlier about the work that you had performed initially on the fire investigation of the Taylor home. Do you recall that?
A. Yes, sir.
Q. And you told us that you went out to visit the home for the first time on September 19, 2011; is that correct?
A. Yes, sir.
Q. Were there any other occasions on which you visited the Taylor home?
A. Yes.
Q. What were the other occasions?
A. I returned on October 21, 2011 with representatives of Louisiana Pacific to conduct a joint inspection of the residence. I returned on the morning of October 22, 2011 to retrieve or recover an item, a section of the radiant barrier sheathing at the back of the house outside, that I did not pick up the previous day.
Q. When you say a section of the radiant barrier sheathing, where was the section taken from?
A. The section was lying on the back of a

Page 59

structure, a wooden structure, I don't know if it was a doghouse or what it was, behind the house. I had occasion to view it with my client's representative on the 21st and she asked me to collect it, and in the course of the afternoon's activities the day before I forgot to pick it up, so I went back to get it as requested.
Q. When you say you had a chance to view it with your client's representative, do you mean Ms. MacLeod?
A. Yes, sir.
Q. Was that section of the radiant barrier sheathing ever seen by the representatives of Louisiana Pacific?
A. I don't know if they saw it laying out there in the back and open for everybody to see or not. It was back there in the back laying out on the top of this wooden shed roof.
Q. When you say you retrieved it, where did you take it?
A. I took it to our evidence storage locker and annotated the evidence control form and kept it with the other items that were collected the previous day.
Q. Where was this piece of radiant barrier sheathing located on the roof of the Taylor home?
A. I do not know. It was not on the roof; it was separated from the house, laying on this other lower

Page 60

level structure when I first saw it.
Q. When was the first time you saw this section?
A. I probably observed this section being there -- I think if I look at my pictures, it was there on the 19th of September. It may have been a separate one that was loose laying on the ground nearby, but that's where it was collected from.
Q. Do you know what part of the roof that section came from?
A. I do not.
Q. Did you ever ask the homeowner where it came from?
A. I did not. It was a section that may be a foot square; it had no identifying indications on it to indicate specifically from which part of the roof it was originally installed.
Q. Prior to going out to see the Taylor home for the first time on September 19, did you read the article that was furnished to you that had been authored by Mr. Simmons?
A. Yes.
Q. What conclusions did you draw, if any, from reading the article by Mr. Simmons?
A. I didn't draw any conclusions from the

Page 61

article.
Q. Did you do any additional work or study into the nature of radiant barrier sheathing before visiting the Taylor home on September 19?
A. I don't recall doing any; no, sir.
Q. After the inspection which you made on September 19, did you do any additional study or work into the nature of radiant barrier sheathing?
A. I'm not sure what you mean by "into the nature of radiant barrier sheathing." After the 19th, I would have re-reviewed the article, probably performed a Web search to see if there were other articles of that nature related to the product, and also at some point in time I retrieved from the Louisiana Pacific website the installation instructions for the product.
Q. Do you remember doing a Web search on radiant barrier sheathing?
A. I've done a number of them since the case began just to see what's out there and what documentation or comments or whatever may be around.
Q. Have you looked or reviewed any articles about radiant barrier sheathing that you found on the Web?
A. The articles I've reviewed are those that have been published by McDowell Owens.
Q. All authored by Mr. Simmons; is that

Page 62

correct?
A. Yes, sir.
Q. So that's the only literature you found on the Web about radiant barrier sheathing?
A. I believe it is, yes, sir, other than the insulation instructions. I did find a -- if I can refer to my file so I can get the right name here for you. I did find a document entitled "Seven Important Tips for the Installation of Radiant Barrier, Reflective Insulation, or IRCCS." That was after my initial investigation activities.
Q. When did you find that?
A. I don't recall. Late October or November of this year.
Q. And were you tipped off to the presence of that article before you found it, or did you find it in the course of doing a search yourself?
A. No. I found it in the course of doing a search myself in preparation for what I thought was the night of your deposition.
Q. So you went to the Taylor home on September 19. What time of day did you go there?
A. Pardon me for a second and let me get this organized. I agreed to, and don't have reason to otherwise think that I met with Mr. Taylor at 9:00 a.m., so morning

Page 63

hours.
Q. Was anyone else present at the Taylor home other than you and Mr. Taylor?
A. No, sir.
Q. No?
A. No.
Q. Tell me about your discussion with Mr. Taylor when you arrived on September 19.
A. What do you want to know?
Q. What was said?
A. I arrived before Mr. Taylor, so when he arrived, we met in the front yard and I asked him to give me some background history about the house and what he knew about the events surrounding the fire, its discovery, and activities that had occurred since that incident.
Q. You asked him about the discovery of the fire?
A. Yes.
Q. What did he tell you?
A. Mr. Taylor told me that his family was away from the house, he was the first to arrive home, observed smoke from the roof ridge, went into the house; it's a two story house with the essential living quarters upstairs. He found smoke on the first floor, proceeded to the second floor, and observed additional smoke there. Sometime

Page 64

during this period he called 9-1-1. He observed the gypsum board ceiling finish of the northern roof slope over the living room to be turning brown, and he evacuated I believe it was some pets from the house, and awaited the arrival of the fire department.
Q. What time did he arrive at the house?
A. I recall him saying sometime after 5:00 o'clock p.m. I don't know that he told me, specifically. I'm happy to look through my notes here. I don't recall specifically what time he told me, if he told me an exact time that he arrived.
He had noted there being an ongoing thunderstorm in the area, and he did tell me that his 9-1-1 call was at 5:51 p.m. How long he had been there exactly, I don't have a note of that.
Q. You said there was an ongoing thunderstorm in the area?
A. There were thunderstorms in the area that day, is what he told me.
Q. Did he tell you anything about the severity of the thunderstorms in the area that day?
A. He told me there was sufficient rainfall or such intense rainfall that he actually delayed coming home a few minutes to not get completely drenched from wherever he was departing, led me to believe it was a severe event

Page 65

in terms of copious lightning and thunder and deluge rainfall.
Q. Did you yourself have any specific recollection as to what the weather conditions were like on August 29?
A. August 29 would have been during the passage of some portion of Hurricane Irene that passed the coastal area of North Carolina. Do I specifically recall the weather that day, today? No. Other than that, I do not.
Q. Did you do any study into the severity of the thunderstorms that were in the Louisburg area on August 29?
A. I obtained weather records from weatherunderground.com, from local recording stations, as well as lightning reports.
Q. And what can you say about the severity of the thunderstorm that occurred on August 29 in the Louisburg area?
A. It was a thunderstorm with lightning. I don't know that I am here to discuss the severity of it, or don't know that I understand how you classify the severity of it in the nature of your question.
Q. Do you know whether the frequency of lightning strikes during the course of that thunderstorm was greater than usual with a thunderstorm, or less?

Page 66

MS. MACLEOD: Objection to form.
A. I have not studied the frequency of lightning within any particular storm or storms. I can tell you what the results of the lightning data show in terms of number of strikes for the time periods that were collected, and that the intensity of the strikes increased between, I believe, before -- When I say intensity, the number of lightning strokes increased between 4:24 p.m. and 5:53 p.m. time on the day of the fire within a five mile radius of his house.
Q. Were you able to determine, either by talking with Mr. Taylor or otherwise, about when it was that the lightning struck his home?
A. No. I spoke to the neighbor who -- Not with any specificity. I spoke to the neighbor that was home and observed what he termed a decidedly louder thunder boom and a flash of lightning in the late afternoon hours the day of the fire, but he could not -- And then he later observed the fire department having arrived at Mr. Taylor's house. He could not give me a time frame other than late afternoon hours after he arrived at home.
Q. Were you able, independent of that, to place the timing of the lightning strike, even within a range of time?
A. The information that I have shows 392

Page 67

strikes between the 4:24 p.m. and the 5:53 p.m. within that range of Mr. Taylor's -- within a five mile radius of Mr. Taylor's house. The closest strikes within a tenth of a mile or so were around 5:00 p.m. Which particular stroke affected the residence, I don't know. Or strokes.
Q. So you met in front of the house with Mr. Taylor on September 19; he told you about his discovery of the fire. What else did he relate to you?
A. He provided access to the house, the house was locked when I got there, and he described to me just the general construction of the house since he served as the general contractor, described what he observed when the fire department was there, described what the fire department had told him, and what activities had occurred since the fire, and provided some background information about other contractors involved in the construction of the house.
Q. What did he tell you about the construction of the home? What did Mr. Taylor tell you about the construction of the home?
A. The house was built in 2009. I'm not sure what else you want to know. That's a broad question.
Q. I'm just asking what he told you about the construction of the house.
A. He told me that the house was built in the

Page 68

2009 time frame; he served as the general contractor. He provided a list of the contractors that assisted during the construction activities as the best he could recall at the time.
Q. He tried to identify the contractors who were involved in the initial construction of the house?
A. Subcontractors, yes.
Q. All right. Is there anything else that you can recall that he related to you about the construction of the home?
A. He related a variety of things. I'm not sure, I mean, if you have a specific question to help me understand what you want to know without me reading every note that I have.
Q. Well, I'm just trying to find out what he told you.
A. He just described the layout of the house, and described to me the interaction between himself and the subcontractors and how the house was built. It's a two story house with a slab on grade first floor and the second floor is framed with wood stud walls and shingle roofing, much of which could be discerned without his presence because of the nature of the building.
Q. Did he tell you who did the electrical wiring in the home?

Page 69

A. He did.
Q. Who did that?
A. He stated that the electrical wiring was done by himself and his father.
Q. What did he tell you about his own background in terms of construction experience?
A. He told me that after this particular house was built, the market, housing market, kind of went south, so to speak -- sorry to use a colloquium -- his company went out of business, so he no longer was doing construction work. He had a general contractor's license before that slump in the housing market.
Q. Did he tell you who did the installation of the roof?
A. Which portion of the roof?
Q. Well, since you've got several portions of the roof there, apparently, tell me which portions and who did it.
A. Well, he had J & H Framers frame the roof structure and install the roof sheathing, and then he had another company, actually it wasn't a company, an individual, Rocky Faircloth, did the roofing.
Q. I'm sorry. I couldn't hear what you just said?
A. He did the roofing, so I just wanted to

Page 70

provide the distinction between the framing and the roofing.
Q. The contractor that provided the roof sheathing was J & H; is that correct?
A. They are the ones that installed the roof sheathing.
Q. They installed it. Okay. Who specified the roof sheathing?
A. As far as I know from what he told me, Mr. Taylor purchased and provided the roof sheathing to J & H Framers.
Q. Did you and he on the 19th of September have any discussion about radiant barrier sheathing?
A. I believe so.
Q. Can you tell me what discussion you had with him?
A. I believe he informed me that radiant barrier sheathing was installed on the roof; Louisiana Pacific TechShield. He was familiar enough with the product and it being his house that he knew some details about it.
He probably, I don't know for certain, asked me whether I had received the article that he had provided to, either provided to or directed Mr. Coffey to. I think he inquired if I had ever seen the material before, and he

Page 71

may have had some general questions about that.
Q. What were his general questions about the article or about radiant barrier sheathing?
A. I think his general questions were if I had seen the material before, and if I had seen the article before, or known of anybody else that may have run across that article or the product. I don't recall with specificity everything that we spoke about.
Q. When he asked you whether or not you had seen radiant barrier sheathing before, what did you say?
A. I think I would have had to have said no, this is the first instance I've had to see it in place.
Q. When he asked you whether or not you had read the article by Mr. Simmons, what did you say?
A. I would have indicated that it was provided by Mr. Coffey and that I had reviewed it.
Q. What discussion did you have with Mr. Taylor about the article?
A. I don't recall.
Q. Were you discussing with Mr. Taylor the possibility that radiant barrier sheathing was involved in some way in the causation of the fire?
A. I don't know exactly what we discussed, or not, and I don't recall if observations were pointed out to him about the condition of the sheathing or not. I don't

Page 72

recall.
Q. You mentioned that Mr. Taylor apparently had some knowledge about radiant barrier sheathing. Did he tell you how he had acquired his knowledge?
A. No, sir, I don't believe that he did.
Q. Do you know whether or not he had used it in his prior construction work?
A. I do not know.
Q. Is the nature of his work residential construction, or do you know?
A. That was the impression he gave me; that was the nature of the work that he had been doing. I don't know what the nature of his work is now.
Q. You also indicated that the discussion with Mr. Taylor before you entered the house also had to do with what the fire department told him.
A. Yes.
Q. What did the fire department tell Mr. Taylor?
A. The fire department told him they'd had, what he reported as about five other lightning fires the same night of his, in the area. He possessed a copy of the fire department report at the time, which indicated that the cause of his fire, the fire damaging his house rather, was lightning related.

Page 73

Q. Did he hand you a copy of the fire department report?
A. I don't recall.
Q. Do you have a copy of the fire department report now?
A. I do.
Q. Do you remember getting it from some other source other than Mr. Taylor?
A. I requested a copy of the fire department report from the Bunn Fire Department; they faxed me a copy. I don't know whether he handed me his copy to review or not.
Q. We'll get to that in just a minute.
But you said that Mr. Taylor told you that there were five other fires, meaning residential fires?
A. He did not say. He said five other lightning fires that night. That's what he told me.
Q. Five other lightning fires?
A. That's what the fire inspector told him. That's the best I know.
Q. Who was the fire inspector that he talked to?
A. He did not say, and he could not recall.
Q. Did you yourself ever talk to the Bunn Fire Department?

A. Only to request a copy of the fire department report.
Q. Did you ever talk with the fire inspector who talked with Mr. Taylor about the five other lightning fires?
A. No, sir.
Q. Did you try to find out who that was?
A. I did not.
Q. Did you make any effort to look into the five other lightning fires that occurred during that storm?
A. I was not retained to investigate those fires.
Q. I understand that, but my question is, did you make any effort to look into the five other lightning fires?
A. No, sir.
Q. Your discussion with Mr. Taylor also involved activities since the fire occurred on August 29. What did he tell you about what other activities occurred?
A. He indicated that since the fire had occurred, certain contents and personal belongings had been removed from the residence, certain circuit breakers had been turned back on, and interior finishes and building materials, some of which had been removed, some had been discarded, and he provided general descriptions of those

specifics.
Q. Did you make notes of what he told you about what had been removed from the house?
A. I did.
Q. Do you have those with you?
A. I do.
Q. We will get to those probably a little later. Did he itemize what specifically had been taken from the house?
A. I don't believe he itemized, no. There may have been certain items or areas that I specifically inquired about and we discussed those in more specificity, but he didn't itemize furniture or contents that had been removed, nor did I ask for an itemized list for those items.
Q. All right. Had any construction work, repair construction work, been performed on the house at the time that you saw it on September 19?
A. At the time that I saw it, the area of fire damage had been covered with oriented strand board or OSB roof sheathing and a blue tarp over the north slope of the roof and part of the south.
Q. Who did that work?
A. My understanding that the restoration contractor, Cary Reconstruction, was the ones that

performed that work, and it began before I received my assignment.
Q. Had Cary Reconstruction performed any removal of any part of the fire damaged area before you saw it on August -- I'm sorry, on September 19?
A. Portions of it were removed. I don't know who removed it, whether it was removed by the restoration company or during fire department activities.
Q. What portions had been removed before you saw the house on September 19?
A. Some sections of the northern roof slope, roof sheathing and roofing had been removed. There was at least one, well, portions of two ceiling rafters or roof joists -- it was a vaulted ceiling so ceiling rafters may be the best term -- had been removed. Some wiring had been cut. And that's what, from the general area of origin, had been removed, in addition to some gypsum board ceiling finish.
Q. When you say "the general area of origin," what do you mean by that?
A. Well, you asked what fire damaged materials had been removed. Those materials were removed from the area of the roof that had burned, or general region of the roof that had burned through, so that's what I mean by general area of origin. Within the bounds of the extent of

fire damage.
Q. So portions of the northern roof slope, including the sheathing and roofing materials, had been removed; is that correct?
A. Yes.
Q. You don't know whether or not they were removed by the fire department when it came to respond to the fire, or by Cary Reconstruction; is that right?
A. I do not. I would have reason to believe some of both may have occurred. I don't know.
Q. As to those portions of the northern roof slope that were removed, did you make any effort to try and locate the removed portions?
A. I inquired with Mr. Taylor as to their location, and I was told that they had been placed into a dumpster and removed from the site to a landfill.
Q. By dumpster, what do you mean?
A. I mean a metal dumpster that is oftentimes termed a construction dumpster. That's what I mean.
Q. So that would have been a dumpster that was brought to the site after the fire damage occurred in order to place fire damaged material?
A. I don't know when it was brought there or who brought it.
Q. Mr. Taylor doesn't keep a dumpster on his

Page 78

property, though, does he?
A. I wouldn't expect so. He may, but I don't know.
Q. Was there a dumpster on the property when you were there?
A. There was.
Q. There was a dumpster on the property?
A. There was.
Q. Did you look into the dumpster to see whether or not any of the fire damaged material that had been removed from the roof was in that dumpster?
A. I looked in the dumpster and I don't recall seeing any fire damaged roofing materials. The materials in there appeared to be interior finishes. There were some ceiling fans in there, or ceiling fan remains. I don't recall any fire damaged roofing or roof structure materials in that dumpster from what I looked through.
Q. So Mr. Taylor told you, though, that the portions of the northern roof slope that had been removed had been placed into a dumpster and the material in them had been taken to where?
A. He said it had been emptied. There was an area of the -- I remember on the right-hand side of the house there was an area on the ground where there appeared material had been there that was burned or had been burned.

Page 79

I asked him where is it? and he said it had been placed into a dumpster and the dumpster had been emptied, did not tell me where it went to.
Q. Okay. Did you make any effort to determine whether or not Cary Reconstruction still had some of those materials?
A. Not of the roofing materials, no.
Q. What about the fire department, did you check with them to see whether or not they had retained any of the removed portions of the roof?
A. It would be unusual for them to retain that. I did not check with them.
Q. Do you know whether or not Mr. Taylor had had discussions with anyone about retention of those portions of the roof that had been removed?
A. I do not.
Q. Do you know whether or not Mr. Taylor had been warned by anyone that those sections of the northern roof slope might be evidence in a later claim or lawsuit?
A. I do not.
Q. Did you have discussions with Mr. Taylor about whether or not those portions of the northern roof slope that had been removed might be evidence in the case?
MS. MACLEOD: Objection to form.
A. I don't believe that I had discussions about

Page 80

that, no.
Q. Can you tell me what the approximate size was, in square feet, of the sheathing that was removed from the roof?
A. The approximate size of the sheathing removed from the roof was about twelve feet wide, that being east to west, and sixteen to twenty feet north to south down along the slope. That's an approximation from reviewing the photographs.
Q. So it's about twelve by sixteen to twenty feet?
A. Yes.
Q. And that would be about how many square feet? You've got a calculator, don't you? An engineer ought to have a calculator with him.
A. A twelve by twenty would be two hundred forty; is that right?
Q. Approximately two hundred forty square feet of the northern slope roof was removed?
A. Roof sheathing, yes.
Q. And that was replaced with OSB?
A. Yes.
Q. OSB stands for?
A. Oriented strand board.
Q. So you've had this conversation now with

Page 81

Mr. Taylor and he's allowed you access to the house. What did you then do?
A. Well, before I had the conversation with Mr. Taylor, I began documenting the exterior of the house with photographs and notes. And then once he provided interior access, then I began documenting the first and second floor and the attic of the house with notes and photographs and diagrams.
Q. And those notes are notes that you brought with you today?
A. Yes.
Q. What did you see of significance as you were documenting the condition of the house?
A. Well, the most significant, the thing of most significance that I saw was that the fire damage was focused at the northern roof slope of the house. No fire damage to the exterior walls. No fire damage to the first floor. And the living space of the second floor was void of fire damage was well. The damage was within the confines of the attic space.
Q. And why was that significant to you?
A. Well, it's significant in that it, number one, helps to establish, working from the areas of least damage to most damaged in a systematic manner, where the fire originated. And then once I established an area where

Page 82

the fire originates, then you start evolving various hypotheses as to potential ignition sources and causes. And fires in attics, by nature that there is limited materials there, starts to reduce your list of potential hypotheses as you perform your investigation.

Q. So you were taking notes as you went along, documenting the condition of the home with photographs and with your notes. What else did you do?

A. Took measurements. And then I inspected the first floor, second floor, the attic, exterior from ground level, and also inspected the roof.

Q. When you say you inspected the roof, how did you do that?

A. By ladder.

Q. You actually got up on top of the roof?

A. Yes.

Q. Did you remove the blue tarp?

A. No. The integrity of the roof was questionable and there would have been a safety concern at that point to remove the tarp or walk across that area.

Q. When you say it was questionable, why was that?

A. Well, there was rafters or ceiling joists, one of which was missing and others had been compromised or partially compromised by fire, so I didn't want to add any

Page 83

loading to it that might result in some type of collapse.

Q. So what were you looking for on the roof?

A. On the roof I was looking for evidence, at that point when I went to the roof, looking for evidence of a potential lightning strike.

Q. Did you find anything of significance when you were on the roof?

A. I did.

Q. Tell me what you found.

A. I found on the chimney cap, it had a stainless steel metal chimney cap, and the top of the chimney cap I found evidence of pitting and melting around the portion of the perimeter of it. I did not find that on other -- I did not find that on the dryer vent or other projections above the roof.

Q. And what significance did that have for you?

A. The artifacts there were indicative of melting, in my experience, and had the significance of being supportive of the point where lightning struck the dwelling.

Q. You said you got up into the attic area?

A. I did

Q. How did you access the attic area?

A. The attic area on the northern side above the bathroom and northern bedrooms was not vaulted and

Page 84

there was a pull-down staircase in the bathroom/laundry room; that's how I accessed that area.

In the front on the south side there was a small attic space formed by knee wall that you could access with a kind of a crawl space door there in the living room to that knee wall area.

Q. But you accessed the northern slope by a staircase?

A. A pull-down staircase.

Q. Pull-down staircase?

A. Yes, sir.

Q. What portion of the attic were you able to see from the staircase on the northern slope?

A. I could exit off of the staircase and walk through that area, the portion above the bathroom and the portion above the master bedroom and his daughter's room. They were only two bedrooms in the house.

Q. So were you able to get a pretty full picture of the northern slope of the roof?

A. As best as you can get crawling through an attic.

Q. You had to crawl, you say?

A. Yes.

Q. So you were on your hands and knees?

A. Squatting, crawling, yes. It was three,

Page 85

three and a half foot of height, so you had to crawl from rafter to rafter.

Q. All right. Did you also access the southern slope?

A. Just the areas in the knee wall spaces along the front wall.

Q. Was there fire damage on the southern slope?

A. Not in those regions.

Q. In any part of the southern slope of the roof was there fire damage?

A. The fire damage I saw on the southern slope was very much near the peak of the roof.

Q. Having then taken a look at the area in which the fire damage occurred on the northern slope, can you give us an approximate size to that area where the fire damage occurred? In square feet?

A. Where the fire damage occurred?

Q. Yes.

A. Where the fire damage occurred, I really can't give you an estimation of the approximation. We spoke about the area where the roof sheathing was removed. There are areas of that where they put the temporary roof sheathing that had minimal damage to the rafters. There are other areas of the roof slope outside those bounds that also have evidence of scorching, smoke stains, and there

Page 86

were melted plastics outside those bounds.
Q. Outside the one hundred twenty square feet that we were just talking about?
A. Two hundred and forty square feet.
Q. I'm sorry. Two hundred forty. Yes.
A. The two hundred forty square feet that we were talking about in terms of the area where temporary roof sheathing had been installed.
Q. So you photographed the area of interest on the northern slope of the roof; is that correct?
A. I photographed the northern slope from the inside and outside, yes.
Q. All right. You made notes. What did you do next after having accessed that part of the home?
A. I don't know that there was anything else that I did after documenting the scene, photographing it, and making my notes. After that point, I got to a point to call my client and give him an update.
Q. When you were in the house on September 19, were you able to identify a point of origin of the fire?
A. Due to the extent of fire damage and the materials removed, I have not identified a specific point of fire origin any more specific than the ten by twelve area that I can discern.
Q. And that's the ten by twelve area that

Page 87

you've identified in the course of your report?
A. That's the area where there is the greatest fire damage to the remaining rafters. And one rafter there is not present; whether it was removed or consumed I'm not certain. But that's where the heaviest fire damage is, and it extends upslope, actually extends upslope, down slope, and across the slope slightly from that region.
Q. So you weren't able to identify a specific point of origin of the fire because of the removal of parts of the roof; is that right?
MS. MACLEOD: Objection to form.
A. Correct.
Q. Were you able to identify a specific source of origin of the fire?
A. I'm not certain what you mean by source of origin.
Q. Where the fire started?
A. You mean the area of origin?
Q. No. I don't mean a square foot area or anything. I mean, you know, what exactly was it that caused the fire? Where did it initially combust?
A. That would be point of origin.
Q. You weren't able to do that?
A. We just discussed that.
Q. You weren't able to do that, were you?

Page 88

A. I have not identified a specific point of fire origin with the physical evidence that is here.
Q. All right. You said that you talked with your contact at State Farm; is that correct?
A. I did.
Q. How soon after you looked at the Taylor home did you make that call?
A. The same day.
Q. And was it Mr. Coffey that you called?
A. It was.
Q. What did you tell Mr. Coffey?
A. I informed Mr. Coffey that we had a fire that originated in the attic; that the most I could tell with the damage left was that the point of fire origin was above the height of the ceiling insulation; and the physical evidence at that time indicated lightning strike probably to the chimney cap with a path to ground through the radiant barrier sheathing and the dryer duct.
We discussed some of the background information that Mr. Taylor had given me regarding him being a general contractor and the other subcontractors involved; discussed whether he wanted me to obtain a lightning report; and also discussed my need or desire at that time to examine the dryer and also to look at the wiring through that region in more detail. That was not

Page 89

performed that day. I gave him a preliminary verbal report and requested further direction.
Q. Were you able to determine when you went out there on September 19 what the path to ground was of the lightning strike?
A. On September 19, yes, when I examined the chimney cap I saw evidence there of the melting that we discussed. And then from there, from the position of the chimney across the northern slope to the dryer, there was evidence that passed through the area where the roof sheathing had been removed and also the area of fire origin of what, in my estimation, appeared to be electrical damage to the aluminum lamina of the radiant barrier sheathing, that proceeded down the dryer vent components with evidence where the dryer would have connected to the duct transition.
Q. Did you examine the dryer that day?
A. No, sir. The dryer had been removed from the site before my inspection.
Q. Did there come a point in time when you did examine the dryer?
A. Yes.
Q. How were you able to determine without seeing the dryer that the lightning strike had passed through the dryer?

Page 90

A. Well, that was the path that I saw, and Mr. Taylor indicated that there was a dryer there that was functional at the time of the fire, so I deduced that that was the probable path to ground.

Q. What was it, evidence-wise, that led you to believe that it passed through the dryer?

A. I had electrical arcing on the dryer duct that was there, and if there had not been a dryer there, there would be no reason for that to be present.

Q. So you found arcing on the dryer duct?

A. Yes.

MR. ELLIS: Why don't we take a short break.

(Pause in proceedings 11:13-11:25 a.m.)

Q. Mr. McGraw, you told us earlier this morning that you located a piece of the radiant barrier sheathing that was on top of some structure outside the house, could have been a doghouse. Do you remember that?

A. I do.

Q. Do you have any photos of that?

A. I do. It would be on my disk of photographs. If you look at my photograph No. 2 in my report, the doghouse structure is visible.

Q. So the structure is visible. Is the radiant barrier sheathing section visible, too?

A. I don't see that section in that photograph.

Page 91

As I mentioned before, I don't recall whether it was on the ground nearby and I set it up there to just look at it, or whether it was already laying there. I do have photographs of it in the photographs that I understand have been provided.

Q. Had that section of the radiant barrier sheathing been affected in any way by the fire or by electrical activity, to your knowledge?

A. Yes.

Q. And what did it show?

A. That section of radiant barrier sheathing, to my recollection without looking at any of the specific photographs, showed that it had some soot damage and some smoke damage to it. The lamina was partially damaged as was the paper portion of the radiant barrier between the OSB sheathing and the lamina, and if paper is the wrong terminology, I apologize.

Q. How had it been damaged? By fire or by handling? By electrical activity?

A. I don't know.

Q. Did that section of the radiant barrier sheathing become a part of your inventory?

A. It did.

Q. Do you know what number on your inventory is associated with that section?

Page 92

A. I do.

Q. Can you tell us what it is?

A. It is actually two pieces; I may have said one earlier. No. 9, item No. 9.

Q. And who has possession of that now?

A. I have possession of that.

Q. Is that part of the material that you brought with you today?

A. Yes.

Q. Thank you. We were on the telephone call that you made to State Farm. Was that a call with Mr. Coffey, again?

A. It was.

Q. Can you tell us, specifically, what you told Mr. Coffey about your findings at that point in time?

A. I think we've reviewed that.

Q. Just tell me.

A. Again?

Q. Yes.

A. At that time, I told Mr. Coffey that the fire origin was in the attic above the height of the, appeared to be above the height of the roof insulation along the northern slope, and that the physical evidence indicated lightning strike to the chimney cap with a path to ground through the radiant barrier sheathing and

Page 93

indications of that going through the dryer as well.

Again, we discussed the work done by the, excuse me, the construction arrangements with Mr. Taylor's company being general contractor, and I provided additional information as Mr. Coffey requested. We discussed whether he wanted me to obtain a lightning strike report as well as getting the dryer -- I understood the dryer had been removed from the site -- getting that brought back, and to examine additional artifacts there on the scene. We also discussed the extent of damage and what materials may have been burned away, what may have been removed, which, I don't have specific knowledge of how that exactly played out because it was done before I was there.

Q. Did you discuss with Mr. Coffey what the cause of the fire was?

A. I think at that point I told him that the evidence at that time indicated it was a lightning event that sought a path to ground through the radiant barrier sheathing.

Q. But you did not tell him that the cause of the fire was the radiant barrier sheathing?

MS. MACLEOD: Objection to form.

A. I don't know whether we discussed that at that point in time or not. He, again, provided me the radiant barrier sheathing article. I discussed with him

where I felt the area of origin was across the roof slope as well as within the attic space and my observations with regard to potential evidence of lightning strike, and he indicated he would review all that with their in-house persons and give me direction as to how to proceed from there.

Q. But just to make clear, you did not tell him that you believed the cause of the fire was radiant barrier sheathing?

A. No.

MS. MACLEOD: Objection to form.

A. Not at that time.

Q. Now you mentioned that the dryer had been taken from the scene of the fire; is that right?

A. I believe in my discussions with Mr. Taylor I inquired as to its location, and it was collected with the -- The impression I got, it was collected with the other contents of the house.

Q. Meaning tossed in the dumpster or what?

A. No. I believe it was inventoried and retained by Cary Reconstruction, according to what Mr. Taylor told me.

Q. So Cary Reconstruction actually created an inventory of material that was taken from the house?

A. I don't know whether they created an

inventory or not. I requested, and the dryer was brought back for the October inspection. There was some type of inventory sticker on it; maybe they didn't apply it, maybe it was there before. I don't remember. It had an item number on it, I don't recall what it said. It would have been photographed.

Q. But Cary Reconstruction apparently retained some of the items that were taken from the home; is that right?

A. Apparently. I don't know what they took. I don't know exactly what their extent or scope of work was. I don't know what they -- I know how they oftentimes perform or what they are asked to perform. In this particular case, I don't know what they exactly did.

Q. Who was directing Cary Reconstruction?

A. I don't know. My point of contact to coordinate the dryer return was Luke Wynd, W-Y-N-D.

Q. Did you ever ask Cary Reconstruction for an inventory of what they took from the house?

A. No, sir.

Q. Have you ever had a conversation with Mr. Wynd or anybody else at Cary Reconstruction about what they took from the house?

A. None other than discussions for the dryer's return; no, sir. I don't know what their involvement

exactly is.

Q. Do you know whether or not they have retained any items other than the dryer from the house?

A. I don't know.

Q. Now you apparently came into possession yourself of some items from the home; is that correct?

A. Yes.

Q. And that's on an inventory that you've maintained?

A. Yes.

Q. When did you take items from the Taylor home?

A. The items that were collected from the Taylor home were collected on October 21 during the course of the joint inspection, and the two additional pieces that I got the following day.

Q. The two additional pieces being what?

A. The two additional pieces, item No. 9, the two pieces of damaged roof sheathing from the outside debris, laying on the outside of the house.

Q. All right. How have you maintained what you took from the house on October 21?

A. The items were wrapped individually with the exception of the dryer vent exhaust duct which was put inside of the dryer. They were numbered, wrapped, and I've

maintained them at our storage facility. We have a rental facility that we rent space to store items. Other than the particular items that have been shipped for inspection, items No. 5 and 6, that's where they have remained.

Q. Did Mr. Coffey in his conversation with you on September 19 ask for a written report?

A. No.

Q. Did you prepare a written report for him?

A. No.

Q. Did you tell him that you were not going to be able to identify a point of origin for the fire because of the removal of materials from the roof?

MS. MACLEOD: Objection to form.

A. I don't believe, no, I did not tell him that. I have identified an area of origin within a ten by twelve area on the northern slope of the roof; within that region. That being the area of fire origin within that region, I can't be more specific. That's the area of origin identified from my analysis.

Q. Is there a difference between an area of origin and a point of origin?

A. Yes.

Q. What's the difference?

A. Well, the area of origin is associated with the area where the fire started. It can be very large, it

can be more defined and refined.
Point of origin is typically defined by NFPA 921 as the exact point where the fire originated. The exact point. And sometimes the exact point can be no more than an area of a chair. In this particular case, I'd have to say my area of origin and my point of fire origin would be the same in that approximately hundred and twenty square foot area of the northern roof slope where there is the most fire damage remaining evident.
Q. All right. You do recognize that there is a difference, though, between a point of origin and an area of origin in 921?
A. There is.
Q. All right. And you are not able to identify the specific point of origin; is that correct?
A. I'm not able to identify a specific point of origin, no. While that is the case, I am able to identify an area of origin, and within that region I am able to make certain analyses from the remaining artifacts to help establish how the fire progressed and what potential ignition sources may be there. So while a specific point of origin may not be able to be discerned, that does not eliminate the potential for being able to establish the origin and cause of the fire.
Q. My question to you, though, was, you were

not able to identify a specific point of origin of the fire; is that correct?
MS. MACLEOD: Objection to form.
A. Oftentimes the specific point of origin of the fire is destroyed by the nature of the fire itself.
In this particular case, I believe that the point of origin along the roof slope was damaged during the normal course of the fire department operations and/or was consumed during that event, during the fire event.
Q. Is the answer to my question that you were not able to identify a specific point of origin of the fire?
MS. MACLEOD: Objection to form.
A. I have not been able to identify a specific point of origin where the fire originated within my defined area of origin, nor do I believe any of the other investigators involved have identified a specific point of origin.
Q. As a fire investigator, why is it important or significant to try and identify a specific point of origin of a fire?
A. Well, once we identify the area of origin, we want to identify the point of origin to understand what potential ignition sources are there and what materials first ignited.

In this particular case, with all of the evidence and looking at the totality of the information that's there, the area of origin is sufficient to identify and rule out a number of potential ignition sources. Other ignition sources routed through that area have been eliminated, and we can use our reasoning and logic to come to an analysis as to the nature of the fire event, regardless of being able to, or not to, pinpoint a specific point of origin.
Q. Were you ever able to identify a specific material that first ignited?
A. I was not asked to identify the specific material first ignited. I've identified the area of origin and I've identified that the lightning has energized the radiant barrier shield -- excuse me, the radiant barrier sheathing across the northern roof slope passing through my area of origin. The material classification that was first ignited, in my estimation, is some building material, building component, whether that be a specific portion of the radiant barrier, the lamina or its interaction with the nearby roof vents or other building materials; others were asked to investigate that.
Q. So you don't know what the material first ignited was?
MS. MACLEOD: Objection to form.

A. The material first ignited was building materials within the area of origin as I've identified and outlined in my report.
Q. Some kind of building material?
A. Well, within that area we have radiant barrier sheathing, we have wooden roof joists, we have Polyvent material, we have electrical wiring, we have fiberglass batt insulation. The fiberglass batt insulation is not going to ignite in and of itself; the electrical wiring there showed evidence of failure. So we are back to the radiant barrier sheathing interacting with the other nearby components.
Q. You told me just a few minutes ago that it was up to others to make a determination as to what the first ignited material was; is that correct?
A. In this particular case, I was asked to investigate or report on the origin of the fire and the cause, in a general sense. I was informed that Mr. Simmons was retained to discuss the propensity of radiant barrier sheathing and its material properties; its propensity to start fire, spread fire, whatever the findings of his study may result in.
Q. So does that mean you were not retained to determine what the first ignited material was?
A. I was retained to present an overview

Page 102

summary of my findings and to perform an analysis of the area of origin, and to discuss the causes as I could and as I have done in my report.

Q. My question to you was whether or not you were retained to identify what the first ignited material was?

A. Well, identifying the first --

Q. Is that yes or no?

MS. MACLEOD: Objection.

A. Yes.

Q. You were retained to identify the first ignited material?

A. When I was retained on September 12, 2009, I was retained to do an origin and cause investigation. During the course of the whole analysis and investigation process that's evolved, some of that assignment has been refined.

Q. Can you answer my question, though?

A. I think I have answered your question.

Q. I asked you whether or not you were retained to identify what the first ignited material was, and you told me earlier that that was up to others and now you are telling me that during the course of your examination it was refined in some way. So I really want you to answer the question as to whether or not you were retained to

Page 103

identify what the first ignited material was?

MS. MACLEOD: Objection to form.

A. I think I can answer your question this way.

I was retained to conduct a fire origin and cause investigation and analysis of the event; I have done so. I have established the area of origin along the northern roof slope within a ten by twelve square foot area, approximately, and within that region I have identified the material first ignited to be building components in that area that occurred when sufficient energy was imparted by lightning onto those materials. What that specific material was is burned away and I can't -- That's the nature of the fire, that it's not there.

Q. All right. After talking with Mr. Coffey and relaying to him what you saw during your visit on September 19, what did you then do?

A. After September 19, I requested a copy of the fire department report -- actually it was also on September 19. On the 20th I spoke with Mr. Strakonsky of State Farm and discussed the situation with him, essentially reviewing what I had already advised Mr. Coffey as to.

Q. Mr. Coffey is an adjuster; is that right?

A. Yes.

Q. He was the adjuster assigned to this

Page 104

particular fire?

A. He's the one that retained me.

Q. What's Mr. Strakonsky's relationship to this?

A. He works in what I've been told or what I understand to be termed the fire products unit for State Farm.

Q. What's your understanding of what the fire products unit of State Farm is?

A. My understanding is that they are the representatives that typically get involved with regard to subrogation or product, potential product liability issues. I don't think I've ever been given a specific description of what they do or seen a specific description of what they do or what their role is. That's my understanding.

When I provided my initial report to Mr. Coffey, his response was "I will check with our fire products unit and I will let you know, or someone from there will call you."

Q. So Mr. Strakonsky called you on September 20, the day after you talked with Mr. Coffey?

A. Yes.

Q. And tell us what was said during the course of that conversation with Mr. Strakonsky.

A. I reviewed with him the general scope of

Page 105

what I had performed at the Taylor residence. I informed him that the fire origin was in the attic above the height of the insulation along the roof sheathing area and that there was evidence of lightning activity. I, again, related the desire to examine the clothes dryer.

I discussed with him Mr. Taylor being the general contractor for the house, the subcontractors that were involved, and he indicated to me he would, in his words, do some additional research or look into whatever he needed to do with regard to his job and they would advise further as to what would occur.

Q. And did you have later conversations with Mr. Strakonsky?

A. I do not believe so. My records do not reflect any. I don't recall any.

Q. Did you have conversations with anyone else from the State Farm fire products unit?

A. No.

Q. Were all your subsequent conversations with State Farm with Mr. Coffey?

A. Yes.

Q. Are those documented in your notes?

A. Yes.

Q. After the conversation then with Mr. Strakonsky on September 20 -- Let me back up just a

Page 106

second.
During the conversation with Mr. Strakonsky on the 20th, did you discuss the role of radiant barrier sheathing in this fire, if any?
A. I believe we probably did. I believe, I don't have note of it, but I believe somehow or another he had a copy of the article that was originally provided to me. The discussions that I would have had with him would have revolved around the observations I had made on the scene indicating the electrical tracking across the surface of the radiant barrier and the lightning event being evidenced at that time, and that tracking passing through my area of fire origin.
Q. Did you discuss the article by Mr. Simmons?
A. I'm sure we did. I don't recall specifically what was discussed.
Q. Did Mr. Strakonsky ask you for your views about the Simmons' article?
A. I don't believe so.
Q. Did you tell him what your views were?
A. I don't recall being asked or telling.
Q. Did you make a written cause and origin report to State Farm?
A. I was never asked to, so, no.
Q. Did they ask you not to do it?

Page 107

A. At this point in time the investigation was ongoing, and my notes indicate soon after talking to Mr. Strakonsky, within a few days, I think nine or ten days, I received a voicemail from Mr. Coffey indicating that Louisiana Pacific was requesting a joint inspection of the house.
At that time, the next conversation I had with a representative of State Farm was with Ms. MacLeod and direction of my investigation and reporting at that point turned to her direction.
Q. Instead of State Farm?
A. At that point, I was directed to report to her.
Q. Instead of State Farm?
A. Yes. I'd have to look at my -- I'd have to look at my emails. I have an email from Mr. Coffey to me indicating she was their representative and I was to take direction from her.
Q. All right. So after you were told to begin conversing with Ms. MacLeod about this, you no longer had any conversations with State Farm people?
A. I think I had one more phone call from Mr. Coffey. I believe after our joint inspection I gave an update to Ms. MacLeod and asked whether I was to contact State Farm or her, and she said at that point she would

Page 108

take care of the contact there.
Q. Between the period of time when the joint inspection with Louisiana Pacific representatives occurred, and your conversation with Mr. Strakonsky, did you have conversations with anyone about the Taylor home fire?
A. Only with Ms. MacLeod and Mr. Coffey to coordinate that inspection, and to Mr. Wynd regarding the clothes dryer location.
Q. Prior to going on the inspection on October 21, did you have conversations with Ms. MacLeod about the Simmons' article?
A. I believe we probably did. I don't have specific notes of what we discussed other than that I gave her an update as to what I knew and what was planned for -- what I had in mind would plan to occur or anticipated would occur on the 21st.
Q. I understand you may not have notes of your conversations, but do you recall what was discussed with Ms. MacLeod about radiant barrier sheathing and the Simmons' article?
A. What I would have discussed would have pertained to my gatherings from the article and my observations from the site, being that we have a lightning event and apparent path to ground that passes through the area of fire origin. And at that point before the joint

Page 109

inspection, that would have been the extent of that conversation.
Q. So you didn't discuss the Simmons' article; you just discussed what you saw on the way of the path to ground of the lightning strike?
A. I'm saying we probably did discuss the Simmons' article, yes, in that context, and in the context of how the information that he's outlined pertains to this particular incident or could pertain to this particular incident.
Q. Tell me about that. What did you discuss about what Simmons was saying in his article and how it might pertain to this incident?
A. I don't recall the conversation, specifically. I guess what I would have discussed was that the data that I had to analyze supported a lightning event at the Taylor residence, and that the information conveyed in Mr. Simmons' article showed or confirmed or demonstrated how the path to ground can occur from chimney across the radiant barrier to a number or variety of different potential paths to ground, and that his article apparently, the testing they did, rather, showed the potential for that material to become ignited during that -- while becoming energized.
Q. Did you say that or did Ms. MacLeod say

that?
A. I believe I said that, because I had reviewed the article previously.
Q. Did she ask you for your opinion of how the Simmons' article applied to this particular case?
A. I don't recall. I believed at that time that the -- You asked a broad question there; did she ask my opinion? But at the time before the joint inspection I believe that I indicated to her that the evidence I had supported a lightning event, and my review of the article indicated that the particular properties that he had researched and identified may be pertinent to this fire, but I didn't know, and that's why we needed to go back and look at the house.
Q. What were you told about the arrangements to inspect the house on October 21?
A. I was told that Mr. Coffey had been contacted by Laura Proctor of Louisiana Pacific and they would like to have somebody inspect the Taylor house, and I was asked whether I wanted to be there at that time or not, I indicated in the affirmative, and the next phone call I got the following day was from Mr. George Murphy.
Q. George Murphy of what organization?
A. Vinson & Elkins is what I understood at the time. He indicated that he needed to coordinate a joint

inspection with me for himself and origin and cause personnel and representatives of Louisiana Pacific. We set up some tentative dates and he was to check back with me.
I advised Mr. Coffey of the contact, and at that time I was told to contact Cary Reconstruction for coordination of the dryer return.
Q. The dryer return to the Taylor home?
A. Yes.
Q. Was the dryer returned to the Taylor home?
A. Yes.
Q. Before October 21?
A. Yes.
Q. When was it returned?
A. I do not know. At that time I requested that it be returned and was told it would be returned to the site before October 13.
Q. So you don't know when it was returned, but you were told that it might be before October 13?
A. And the reason for the October 13 was that was the earliest date that Mr. Murphy and I were discussing at the time. I don't have confirmation that I made a note when it was returned.
Q. Who would be at the home to receive the dryer or anything else that was delivered to it before October 21?

A. I don't know. The house had a lock box on the front that was access for the restoration company personnel. Other than that, I don't know the answer to your question.
Q. So Cary Reconstruction people could have brought the dryer back at any time prior to October 21, for all you know?
A. For all I know.
Q. They had complete access to the home?
A. I don't know what their access arrangements were to the home.
Q. There was a lock box with a lock on it and a key inside; is that correct?
A. That's my recollection.
Q. Did you have access to that lock box?
A. I believe that for the joint inspection I did, yes. Before that time, I don't recall having access to it.
Q. Are we talking about a combination lock or a key lock?
A. It's a combination lock like a realtor may use on a rental dwelling.
Q. Did you get the combination to the lock, then?
A. Evidently, I did.

Q. At some point the Cary Reconstruction people obviously delivered the dryer to the house and put it back in place?
A. Yes.
Q. Do you know how much other access they had to the home other than replacing the dryer?
A. I do not.
Q. Did anyone else have access to the home that you are aware of?
A. I presume Mr. Taylor had a key to the house. I don't have reason to believe anyone else had access to the house. There was no evidence that anyone accessed the house, altered or changed anything, between the inspections that I performed.
Q. You were at the inspection that took place on October 21; is that correct?
A. I was.
Q. Who else do you recall having been present for the October 21 inspection of the home?
A. If you will let me look at the list of folks that signed in, I'll tell you.
Those present included myself, David Dellwo, I believe, of Louisiana Pacific, D-E-L-L-W-O. If I mispronounce names, I apologize;
George Murphy of Vinson & Elkins;

Mark Loose, L-O-O-S-E, of Exponent;
Dennis Scardino of ESI;
Laura Proctor of Louisiana Pacific;
Brian St. Germain, G-E-R-M-A-I-N -- I hope I pronounced that correctly -- of Louisiana Pacific; and
Ms. MacLeod.
Those were the persons present.

Q. As to the way in which the inspection was conducted, did you lead people around or did everybody look at the home on their own?

A. The way I conduct my joint inspections is, I, when everybody arrives, try to have a little introduction session and provide background information about what I know about the event at that time, the facts that I've been told, and then make access available for those other persons to do their documentation in their systematic manner. Usually that lasts an hour, maybe an hour and a half.

After such time, or during that time, sometimes it may occur we get to a point where there are items of interest that want to be looked at in more detail and then that becomes more collaborative and everyone might anticipate at that time.

Q. When you gave the background information to the folks from Louisiana Pacific, what did you say?

A. I develop a little background information sheet, kind of a brain tickler, and at that point in time I just reviewed that information with them. That includes the date of the fire, when I received the assignment, when I inspected, what I may have learned in terms of factual information from tax records, brief summaries from what the insured or homeowner occupant may have told me, or any other interviews, what information may be learned at that point from the fire department report or weather records, and then I generally follow up with just an outline of what the scene or site condition is, if anything has changed, or what I might know about that.

Q. Do you have the notes in front of you that you used?

A. Yes.

Q. Could I see those for just a second? I'll return it to you; I'm not going to mark it as an exhibit.

A. They should be in whatever has been produced.

Q. Did you stick pretty much to the outline that you prepared there?

A. I don't have any reason not to. Yes, sir.

Q. You did go over the report from the fire department about the fire investigation that they conducted; is that correct?

MR. ELLIS: Let's go off the record for just a second.
(Pause in proceedings 12:03-12:03 p.m.)

Q. Nathaniel has gone to make a copy of your notes and we will have them marked in just a second, but in the meantime, we will work off the copy that you've got in front of you.

A. I don't have a copy in front of me.

Q. Oh, that's right.

A. We can try to proceed.

Q. Maybe from your recollection then, and if you have any doubt about it, we can confirm it when the copy is back.

A. Clear it up.

Q. You said that you don't have any reason to believe that you deviated from what's on your outline; is that correct?

A. No, sir. I used the outline to make sure I hit the points that are there, and of course would answer whatever questions may arise.

Q. You covered what the Bunn Fire Department had found during the course of their investigation of the fire; is that correct?

A. I believe that I did. It's indicated in the notes specifically what I said. I probably would have just

indicated the general narrative text that they used and if asked would have made my copy of the fire department report available.

Q. So you would have told the people from Louisiana Pacific that the Bunn Fire Department investigation had showed that the Taylor home fire was caused by lightning?

A. I'd have to look at my notes, but I believe that's what the fire department report says and I believe that would have been conveyed.

Q. At any point during the course of your briefing of the Louisiana Pacific people did you tell them that you believed that the Taylor home fire had been caused by the radiant barrier sheathing?

A. I don't believe at any point I've had discussions with any Louisiana Pacific representatives, before today, about my opinions as to the cause of the fire. So that's not something I would have discussed.
(DEFENDANT'S EXHIBIT NO. 30 MARKED)

Q. I'm handing you what's been marked as Exhibit No. 30. Is that a copy of the notes that you used in connection with your briefing of the Louisiana Pacific people at the site on October 21, 2011?

A. Yes, sir.

Q. And you'll see that your outline does not

Page 118

include any item relating to cause of the fire; is that correct?
A. Only what the fire department report says.
Q. Just what the fire department said?
A. Yes. There is not any speculation or causation or opinion discussion as to my analysis.
Q. Did you tell the people from Louisiana Pacific where you believed the area of origin of the fire was?
A. I believe I probably did discuss with them where the area of damage was, being that we have most of the damage is in the attic. I don't think that we discussed it in any greater detail than that; I don't recall if we did.
Typically, during these types of on-site briefings that's one of the questions. Where is the most damage? or What's the area of focus? or something like that, and I'm sure that was asked and answered in a general manner.
Q. Answered by you?
A. Yes.
Q. So you would have indicated the general area of origin of the fire to the people from Louisiana Pacific; is that right?
A. I think I would have indicated where the

Page 119

greatest fire damage was, and they can make their assessment from there.
Q. Did the people from Louisiana Pacific, after having heard your briefing, go about their own inspection of the structure?
A. Yes.
Q. Did you lead them around or try to guide them in any way?
A. No, sir. They performed their inspection of the structure, inside and outside. I intermingled with, you know, crossed their paths or whatnot as I was preparing for other activities or performing other documentation, until such time as there were items that we wanted to look at collectively, and that was done in a collaborative manner. I don't think anybody was leading anybody; it was collaborative.
Q. So there were specific items, then, that you had a collaborative discussion with the Louisiana Pacific people about?
A. Yes.
Q. Do you recall what the specific items of discussion were?
A. The specific items we looked at, collaboratively and together, was the electrical service to the house. I think there was a question about where the

Page 120

LP gas line was, excuse me, LP gas tank was; I may have pointed that out to them.
The items on the left or the west side of the house, including the water heater, electrical service panels, meter base, and the network interface device for telephone or -- yes, just network interface device -- we looked at all those collaboratively together.
We proceeded then, I believe, I could have the order wrong, slightly out of order, looked at the electrical panels, both of them downstairs, together. We looked at the clothes dryer together. We did perform some inspections in the attic, I think; you know, they were in there, I was in there at the same time. I think we were on the roof together. And then there was discussion ultimately about the items that I had desired to collect and how to go about doing that, if there were any opinions or suggestions, as well as anything that they may have wanted recovered.
Q. Were there any specific items that they wanted to have recovered?
A. My recollection was that they requested the roof sheathing around the dryer vent and the chimney to be recovered. That required -- And the reason I recall that is, that required me to get in touch with Mr. Wynd, after discussing with Ms. MacLeod, to get them to come out and

Page 121

cover up the hole that I was preparing to cut in the roof so that the dwelling would not sustain additional damage from inclimate weather.
Q. Did you collect the sheathing around the dryer and the chimney?
A. I did. I collected some sheathing around the clothes dryer about the width of one rafter space and four/five feet long, I don't recall exact dimensions, and then about four square feet, four to six square feet around the chimney penetration, chimney flashing penetration.
Q. And you still have those?
A. Yes, sir.
Q. You also indicated that there were items that you desired to collect from the house; is that correct?
A. Yes.
Q. What were the specific items that you desired to collect yourself?
A. I collected the clothes dryer -- it was all collected; it's on the inventory list -- the clothes dryer with its dryer duct as well as some electrical wiring, routing, running through the area of origin, and I collected a section of the purple-colored vent material, and then the two pieces of roof sheathing from the outside debris.

Page 122

My evidence list has nine items shown, but during the course of the activities I never had an item No. 4, so there is no item No. 4; it's listed as no item.

Q. The electrical wiring that you wanted to collect, those were pieces of what part of the wiring system?

A. The wiring that was collected, items No. 5 and 6. Item No. 5 is branch circuit wiring for the smoke detectors; I think it may have been labeled electrical panel fire alarm. And item No. 6 actually served the recessed ceiling lights in the living room area -- it's a great room, I call it the living room -- along the northern slope.

Q. Approximately how much wire did you collect?

A. The section of the fire alarm circuit is about sixteen feet long, and the section of the -- let me look at my notes -- the section serving the recessed ceiling fixtures is about seven feet and a quarter; seven feet four inches long.

Q. You said that you did some collaborative inspections in the attic with the LP people; is that right?

A. I seem to recall that one may have been in the attic space and another -- When you went up in the attic from the pull-down stairs there was a little bit of a landing, so to speak, near the HVAC unit, I seem to recall

Page 123

being in there, you know, somebody was in taking pictures and then we swapped out in the course of what we were doing. Specifically other details I don't recall.

Q. Do you remember anything about what you discussed with the LP people as you were inspecting the attic area?

A. No. No, I don't.

Q. All right. What about when you were on top of the roof with the LP people, do you remember any of the discussion with them as you were on the roof?

A. The only discussion I recall with them was just to point out where I made certain observations on the chimney cap.

And as far as the attic, thinking back, the only discussion I would have had with them would have been to identify areas of the rafters where I had marked apparent artifacts, positions of apparent artifacts, on the radiant barrier sheathing so they would understand what I saw and why I made markings on the chimney cap. I made cardinal directional markings on the chimney cap as well as indications on the sides of the rafters.

Q. Did you say you made some markings on the radiant barrier sheathing?

A. No. I made markings on the -- I made markings on the ceiling rafters below those potential

Page 124

locations. Just drew an arrow for future reference so when we came back we could reference those, and so they would show up in photographs as well.

Q. Did you make any comments to the LP people about radiant barrier sheathing as you were inspecting the attic or the roof?

A. Not that I recall.

Q. Did they make any comments to you about it?

A. I don't recall. Don't recall any, no.

Q. Did you make any comments to the people from LP about the removal of portions of the roof and the fact that they were not available?

A. I don't think I made comment. I think I made them aware through the course of my briefing that portions of the roofing were cut out by the fire department and some of the fire debris -- some of the roof section had burned away and was consumed by the events of the combustion, and some other of the debris had apparently been removed from the site and discarded before that date.

Q. Did you make any comments to the people from LP, the representatives of LP, about the impact on your investigation due to the removal of materials from the home?

A. I don't think I made any comment with regard to removal of materials, the impact of materials removed or

Page 125

consumed during the fire, to them.

Q. When you looked at the home on October 21, that approximately two hundred forty square foot part of the northern slope of the roof had already been removed, correct?

A. There's an area of two hundred forty square feet where there is OSB sheathing that's been applied temporarily, covered by tarpaulin. Some portion of that I understood to be removed, other portions of that likely burned away during the fire. That's all I know about the extent of either.

Q. All right. But that's the condition that existed at the time of the inspection on October 21; the two hundred forty square feet had been removed and replaced by OSB?

A. Two hundred twenty [sic] square feet of the roof sheathing, the roof area, had been covered by temporary OSB, the TechShield that was there before, what hadn't burned away, had apparently been removed and discarded.

Q. All right. Do you know whether or not the part of the roof that was not damaged during the fire or removed for any reason, that was clad in TechShield, was that TechShield ultimately removed or not?

A. I don't know how it became not to be on the

roof anymore. I don't know what was -- I believe some burned away, I don't know who may have removed it, I don't know how it got removed; I don't know about it. I was not there for that.

Q. Let's take the south slope of the roof, okay. Was any part of that TechShield sheathing removed, to your knowledge? Ever?

A. That along the south slopes of the roof there is some missing at the peak. Looks to me like it's burned away.

Q. All right. So that part of the TechShield is gone; is that correct?

A. That part of the roof structure, yes.

Q. Is there still TechShield on the roof? If we went out there today would we see TechShield?

A. I have no idea. I have not been to the house since October 22 last year.

Q. So you don't know whether or not the condition has changed?

A. No idea.

Q. So the last time that you actually saw the Taylor home was during the joint inspection that occurred on October 21?

A. The last time I saw it was the following day when I went to get the two sections of sheathing out back.

Q. Right. So the last time would have been October 22?

A. Yes, sir.

Q. Did you do any more inspection of the home on October 22, or did you just go to pick up those sections?

A. No, sir. I just picked up those two sections that was discussed to retrieve and that was it.

Q. Other than Mr. Lee and Mr. Taylor, did you interview anyone else in connection with your investigation?

A. I did not. I gathered from Mr. Taylor he was the only person home at the time of the fire. He had substantial knowledge about the history of the house, having been intimately involved in the construction of it.

He learned, I don't recall, I guess during the course of one of our conversations, that his neighbor may have been home at the time of the fire, so I left a business card for him on the 21st and he subsequently called me back. Nobody else was interviewed.

Q. Do you know whether or not Mr. Taylor looked into any of those five other lightning fires that occurred in the area on August 29?

A. I do not know.

Q. You didn't, in any event?

A. I was not retained to investigate them, I'm not privy to that information, and don't know where they are.

Q. Had you heard about the potential cause for any of the other fires that occurred that night?

A. None other than what Mr. Taylor was apparently told by -- He said the fire inspector said they had five other lightning fires that night.

Q. And you don't know whether any of those other five homes, obviously, had radiant barrier product in them?

A. I don't know anything about them, whether they were small fires, large fires, commercial, residential. Don't know.

Q. After October 22 when you picked up those two sections of radiant barrier sheathing from the Taylor home, what did you then do in connection with your investigation?

A. After the 22nd of October, I had conversation with Mr. Lee, the neighbor, and then had additional conversations with Ms. MacLeod to confirm what was removed from the house and to discuss what additional research or follow up may occur; that I had spoken again with Mr. Taylor to reestablish and confirm my notes about the subcontractors involved in the construction of the

house from what he had told me on the scene.

I had occasion to request inspection permit details from Franklin County and then had a conversation as well with Mr. Coffey a few days later.

Q. When was it you talked with Mr. Coffey?

A. The 25th of October.

Q. And what did you all discuss during the course of that conversation?

A. He was inquiring as to the status of the investigation. I provided him an update and related that I was awaiting direction from Ms. MacLeod as to what further may need to occur from an investigation standpoint.

Q. You had talked with Ms. MacLeod by that time?

A. I had.

Q. And I think you just told us that part of your discussion with Ms. MacLeod had to do with the additional work that you might be performing in connection with this fire?

A. Yes.

Q. And what was discussed?

A. I'm sorry?

Q. What was discussed with Ms. MacLeod about your additional work?

A. At that time what was discussed was, I

Page 130

think, I wanted to just reconfirm with Mr. Taylor who the various contractors were and what their roles were in the construction of the house, and that I wanted to obtain what I could from the Franklin County permitting and inspections department.

I was continuing -- There was a question at that point from what I had told her about my opinion as to the origin of the fire and as to the cause being a lightning related event that sought path to ground through the radiant barrier sheathing, with the ignition along that path within the area of origin, there was a question as to what additional research could be undertaken into answering the question, or questions, about the performance of radiant barrier sheathing.

Q. What, specifically, do you recall about that part of it?

A. I specifically recall the question being What was the role of the radiant barrier sheathing in the development, ignition, and/or spread of the fire? That being the question to seek out an answer to.

Q. That you were to seek out an answer to?

A. That was the question that she and I discussed, and at that point in time, I had related to her that research or testing analysis along those lines may need to be undertaken. I had the Ron Simmons' article from

Page 131

what Mr. Coffey had sent me, and I think she was under review of that at the time.

Q. Did you tell her that you thought you could do that work?

A. Ultimately, when I was asked to provide an estimate for the cost of doing that, and after having looked into reviewing his article, I deferred and said that I believed that the testing instrumentation and potential electrical engineering expertise necessary falls outside of my scope of practice and therefore I couldn't provide a good estimate for that.

Q. Why did you feel that it fell outside the scope of your practice?

A. Well, dealing with -- In reviewing his article and looking at the lightning data, and looking at how the testing he had done, some of the measurements that had been taken in terms -- not the measurements, some of the instrumentation that had been used and my understanding that there may be detailed electrical engineering knowledge necessary to properly develop and design a test, I felt like that fell outside of my area of expertise as a fire investigation specialist/fire protection engineer/civil engineer, and outside the general area of engineering that I practice in. We are instructed and licensed not to practice outside of areas where we don't have education,

Page 132

training, or experience.

Q. That's a professional no-no, right, to try and take on something outside your professional area of experience and expertise?

A. Well, I felt that the -- I hate to use the colloquialism reinventing the wheel, but I felt some of my effort if I undertook a study may reinvent the wheel, where others may have a different baseline knowledge, and to better serve my client they may want to investigate another means for that to be done other than for it to be produced by me.

(DEFENDANT'S EXHIBIT NO. 31 MARKED)

Q. I'm showing you what's been marked as Exhibit No. 31. Can you identify that, please?

A. I can.

Q. What is it?

A. Appears to be a copy of my report dated August 22, 2012.

Q. I'll ask you to go to page number six of your report. At the end of the paragraph before your Summary and Opinions begins, did you make this statement?

"Analysis, testing, and/or review of the Louisiana Pacific TechShield radiant barrier sheathing for ignition propensity, material properties, or susceptibility to damage from

Page 133

lightning insult falls outside the scope of my assignment."

A. I did.

Q. You made that statement, correct?

A. I did. That pertained back to, again, the research and testing I was asked to do last year, not being asked to do that, and knowing at that time it was my understanding Mr. Simmons had been retained to speak to the testing that he had done.

Q. What do you mean by ignition propensity?

A. The way I read Mr. Simmons' report, excuse me, his paper and his reports, is that he has indicated that the radiant barrier itself can become ignited from being insulted by lightning, whether that be because it's energized, we have an electrical arcing event, or through resistance heating actually igniting the radiant barrier. He has produced the reports and articles that he has, and was going to let that -- That's what I mean there by ignition propensity.

Q. All right. So the ability of the radiant barrier sheathing to be ignited was something that fell outside the scope of your assignment?

A. Yes.

Q. What do you mean by material properties?

A. Whatever properties that it may be. I've

Page 134

not undertaken a detailed study of the radiant barrier, other than a visual inspection, to know that it looks to be -- I understand from review of the file documentation since, some of the details, but at this time it looked to me to be an OSB type material with a glued on, so to speak, foil lamina.

But in terms of other material properties that may be of interest specifically to the component makeup of aluminum, or any structural properties that may have occurred, to be undertaken in investigation, that's not something that I was asked to look into.

Q. What did you mean by susceptibility to damage from lightning insult?

A. What I meant by that was the susceptibility of the radiant barrier lamina to the damage that Mr. Simmons has demonstrated in his articles to be prominently caused by energization from lightning, the way I understand it, the manifestation of that damage or what can occur. I think in some of the photographs, or maybe they were excerpts from videos, video frames, that they show with regard to how that material performs in terms of ejecting molten alumina, apparently, and electrical sparking during the testing that they've done.

Q. So that fell outside the scope of your assignment?

Page 135

A. Yes. The intent of my statement there was to encompass all of the specific testing of that product fell outside the scope of my assignment.

Q. And your understanding was that that had been assigned to Mr. Simmons to do?

A. Yes. I was asked to produce a report discussing the origin of the fire and the causation in general, by Ms. MacLeod.

Q. Before I get to the body of your report, there are some parts to the report that were enclosed as exhibits to it that I want you to go ahead and identify for us.

(DEFENDANT'S EXHIBIT NO. 32 MARKED)

Q. I'm showing you what's been marked as Exhibit No. 32. Can you tell us what that is?

A. It is a copy of the Bunn Fire Department report No. 11-0000216.

Q. All right. And this is the report that you obtained by asking the Bunn Fire Department to provide it to you; is that right?

A. Yes.

Q. And the Bunn Fire Department concluded, as is indicated on the third page of this exhibit, that the fire appeared to be caused by a lightning strike; is that correct?

Page 136

A. That is what the narrative indicates. I don't know whether that was their conclusion or whether that's their reporting of the fire marshal's conclusion. They did not undertake, to my knowledge, a detailed investigation of anything other than the activity that could have occurred between 5:55 p.m. and 7:44 p.m. the evening of the event.

Q. You mean when they were there?

A. Yes.

Q. And they were there as the fire was going on, correct?

A. Yes.

Q. So they actually saw the area where the fire originated; is that correct?

A. No, not necessarily.

Q. Well, they were present on the scene, correct?

A. Yes. During the suppression.

Q. You said they might not necessarily see the area where the fire originated; why would that be?

A. That area may have burned away before they got there, the point of origin.

Q. All right. They were obviously there before the two hundred forty square feet of the roof were removed too, right?

Page 137

MS. MACLEOD: Objection to form.

A. I don't know how much of that square feet of the roof was removed versus what burned away.

Q. But they were obviously there before that section of the roof got removed?

MS. MACLEOD: Objection to form.

A. The two hundred forty square feet I referenced before is not what was removed; that's what was temporarily covered. They were before that two hundred forty square feet of temporary roof covering was applied.

Q. Right. Let's come back to your report, Mr. McGraw. Page three of the report, at the end of the second paragraph under Background Information, you make the statement:

"The smoke detectors were not monitored off-premises, and Mr. Taylor did not recall an audible alarm from the smoke detectors."

Do you see that?

A. I do see that.

Q. Do you attach any significance to that?

A. I do.

Q. What's that?

A. Well, smoke detectors monitored off-premises, if they had been such, then we might be able to establish a more specific point of time of activation

Page 138

and that might also change. There is a different notification timeline whether a system is monitored or not. It's a question that always commonly comes up; whether a smoke detection -- Are there smoke detectors present? Yes or no. Did they activate? Yes or no. Were they monitored off-site? In the course of normal investigation that's a question we try to cover.

With regard to not hearing an audible alarm from the smoke detectors, when he arrived he reported smoke down to about head height on the first floor with a good smoke condition upstairs. And with the detectors being hard-wired to the system, their not activating says, in my mind at that point, with the smoke conditions present, something has de-energized that circuit and, potentially, caused them to have ceased activating, if they activated ever.

Q. All right. Further on down in the last paragraph on this page you make the statement:

He, referring to Mr. Taylor, "discovered many electrical and electronic devices suddenly inoperable or improperly functioning after the fire."

Did you make that statement?

A. Yes. That's what he told me.

Q. Did you attach any significance to that?

Page 139

A. I did.

Q. What was that?

A. I attached a couple of things to that. He described, and I listed, the devices that he reported, numerous electronic devices, the water heater, and some telephone and computer equipment. I attached a significance to that, coupled with the lightning report confirmation that the house did sustain a lightning insult, that a strike did occur and that these multiple other areas or multiple other items, excuse me, multiple other items and appliances or products were affected by the fire and those items and appliances did not erupt in fire from that event.

Q. The last sentence on page three says:

"Mr. Taylor learned of multiple other lightning related fires in the area on the same night as the fire damaging his house."

Is that correct?

A. Yes. That stems from his report that the fire inspector told him there were five other --

Q. Lightning fires that night?

A. That's what he was told and that's what he conveyed to me.

Q. But you didn't follow that up?

A. I've not been asked to follow that up. I've been asked to investigate this particular case.

Page 140

Q. Apart from the specific assignment that you were given, did you think it would be advisable to go back and take a look at the five other lightning fires that occurred that night?

A. I've not been asked to look at any other fire in this particular case than the one we have at hand. The details of those doesn't pertain to the evidence and the physical remains and the layout of this particular house. So this particular fire at the Taylor residence is the one that I've been asked to investigate, not other events that may provide extraneous information.

Q. Would it be important for you to know or not know whether or not the other lightning-induced fires involved radiant barrier sheathing or not?

A. No.

Q. It would not?

A. No. Because I have not been asked to look at those fires. I've been asked to look at this particular fire and look at the circumstances of this event, not other events that may have occurred that same time frame, or any other time frame for that matter.

Q. Even in the same storm?

A. I've been asked to look at the fire at the Taylor residence that occurred on August 29 of 2011, and

Page 141

I've based my opinions, my findings and conclusions, on the facts of the evidence of this particular case.

Q. I know what you were asked to do.

Did you ever tell the people from State Farm or their attorneys that you thought it might be important for you or someone else to take a look at the five other lightning-induced fires that night?

A. No, I don't believe that I did. I believe I told them what Mr. Taylor had conveyed to me, and I told them how the particular details and the totality of the evidence in this particular case, at this particular structure, on this day, with this event, pertained to this analysis and investigation as to the origin and cause of the fire.

Q. Apart from what you were assigned and asked to do, do you believe that it would be important to go back and take a look at those five other lightning-induced fires?

MS. MACLEOD: Objection to form.

A. I do not. If I believed that it would be important to look at any particular event, from any particular storm event, that would be all I'd be doing is looking at other potentials that occurred at or about the same time as any investigation I ever undertake, water damage, storm damage, structural damage, or otherwise.

Page 142

What's important is what I've been assigned in this particular case and the facts of this case at hand, and how the particular materials interact in this particular structure and how they are configured here.

Q. Would it be important for you to know, though, that there were other lightning-induced fires on the evening of August 29 where radiant barrier sheathing was not involved?

MS. MACLEOD: Objection to form.

A. No.

Q. That would not be important for you to know?

A. There are lightning-induced fires that can occur at any time in any particular place; I've not been asked to investigate those.

Q. Would it be important for you to know that some of the homes that had lightning-induced fires on August 29, in fact, had radiant barrier sheathing?

MS. MACLEOD: Objection to form.

A. No. I've been asked to look at this particular case and analyze the facts and the physical evidence of this particular site as it pertains to the fire loss that occurred. I've not been asked to investigate the other ones. And what may or may not occur at another house, while it may be interesting it's not what, in fact, occurred here and it's not comparative to this case.

Page 143

Q. So, knowledge as to whether or not radiant barrier sheathing was involved in any other lightning strike-induced fire in the Franklin County area on August 29 would not be an important thing for you to look at; is that correct?

MS. MACLEOD: Objection to form.

A. I do not believe so, for the reasons that I've stated. That I've been asked to look at this particular fire and make an assessment as to the origin and cause of the fire with the facts at hand, with the conditions presented, and the analysis was taken with that in mind.

Q. On page four of your report, if you will turn to that please. Under the Summary of Inspections in the first paragraph at about the middle you make the statement:

"Some burned debris, including roof framing components had been removed and discarded before my initial visit to the residence."

Did you make that statement?

A. I did.

Q. Apart from what you have already described as what had been removed and discarded before your initial visit on September 19, do you recall anything else now that had been removed from the home?

Page 144

A. Can you restate that question, please?

Q. Do you recall anything else other than what you've already testified to that was removed from the home?

A. No. None other than what I've already testified to.

Q. In the second paragraph at the end of it you make the statement:

"The grounding electrode conductor showed discoloration accompanied by possible artifacts of electrical arcing where it passed through the bottom of the service panel enclosure."

Do you see that?

A. Yes.

Q. What is the significance of that?

A. The grounding electrode conductor connects the house grounding system, the branch circuit conductors in that ground bus, to the grounding, ground rod, so it is the path to ground for the whole house, for the whole house's electrical system.

Q. Do you have a picture that shows this?

A. I do.

Q. Can you tell us what that one is?

A. Picture or photograph No. 4 on page nine of my report is one of those.

Page 145

Q. Are there others?

A. There are.

Q. I'm sorry. What are they?

A. There are other pictures that I have that are on the photographs that have been provided; they are not part of the report.

Q. I thought you were looking for them.

A. No, sir. I'm sorry. There are other photographs on the disk of photographs that I understand have been provided that show that area.

Q. But they are not in your report?

A. No, sir.

Q. Does photograph No. 4 show the electrical arcing that you've referred to in your report?

A. I have encircled the region there where that appeared to have occurred.

Q. Tell me what it is about that region that leads you to believe that electrical arcing occurred there.

A. In my inspection of that region there in the field there was evidence of pitting on the wiring and/or the housing of the subpanel there, electrical panel, and that's what led me to that.

Q. Did you collect evidence from this area?

A. No.

Q. So this still exists at their house or it

Page 146

was in existence at least as of the time that you took this photograph; is that correct?
A. It was there when I took the photograph; I did not collect it.
Q. Why did you decide not to collect it?
A. It was not requested to be collected, and at that point in time I felt that the photographs that I took documented its condition and didn't collect it.
Q. Is it possible that the discoloration that you've referred to there in photograph No. 4 could be due to something other than electrical activity?
A. The discoloration there in photograph No. 4 is a darkened soot-like black, apparent discoloration. While some of that discoloration may be, potentially, the pitting and such I would not expect from anything other than that being energized.
Q. But the discoloration could be due to something like corrosion? Oxidation?
A. I did not see evidence of corrosion there. Typically, the corrosion I see on copper material produces a green copper oxide corrosion condition; that's not present on this. It had some reddish discoloration extending outward from the area of pitting as well as the blackish, black type color discoloration that presented with a soot-like coloration.

Page 147

Q. Is it possible, though, that it's due to something other than electrical arcing and electrical activity?
MS. MACLEOD: Objection to form.
Q. Do you recognize that, or not?
A. I have not analyzed what it could be due from. I've provided you the analysis of what my assessment was, based on the inspection of that that I performed.
Q. My question to you is whether or not it's possible that it could be due to something other than electrical activity?
MS. MACLEOD: Objection to form.
A. I've related to you what I think the discoloration has been caused by.
Q. You still haven't answered my question.
A. Mr. Ellis, I don't know how else to answer your question other than to tell you what I think it was caused by.
Q. Is it possible that it could be due to something else, sir?
MS. MACLEOD: Objection to form.
Q. Can you answer that question?
A. Based on my review of that, and my inspection of it, and looking at that, that's my opinion as to its development.

Page 148

Q. Can you not answer my question?
MS. MACLEOD: Objection.
Q. Are you certain that it's due to electrical activity, or is it possible that it's due to something else?
MS. MACLEOD: Objection to form.
A. Based on my review of the house in its totality, and inspection of the systems, that, in my opinion, to a reasonable degree of certainty, was the result of that grounding electrode conductor becoming energized.
Q. So you are certain?
A. Reasonably.
Q. You are familiar with what the NFPA 921 says about possible, right? And possibility?
A. Yes, I believe so.
Q. Okay. Using and applying what you know, NFPA 921 possibility, to this, is it possible that it's something other than electrical activity that caused that?
MS. MACLEOD: Objection to form.
A. I'm offering you my opinion as to a reasonable degree of certainty.
Q. That's not my question, though. I mean, I'm entitled to ask you questions. You said you conducted this investigation pursuant to NFPA 921.

Page 149

A. Yes.
Q. And you know that NFPA 921 deals with the realm of possibility, don't you?
A. Which section are you referring to?
Q. Section 18.
A. That's a chapter. Which part of it?
Q. I don't have a specific part, but you're familiar with that.
A. I'd like to look at the text to apply it to the question.
Q. Do you know that it deals with the realm of possibility?
A. There's a section that talks about possibility.
Q. Using the NFPA 921 definition of possible and possibility, is it possible that discoloration and the pitting is due to something other than electrical activity?
MS. MACLEOD: Objection to form.
A. I don't think that NFPA 921 defines possible and possibility.
Q. You don't think it defines it?
A. I don't think in its definition --
Q. You don't think it addresses and provides a definition that would guide a fire investigator as to what's possible and what's not; is that correct, or not?

Page 150

MS. MACLEOD: Objection to form.
A. I think you've asked more than one question there. I don't think that possible and possibility are specifically defined in its definitions list, off the top of my head; if it is -- if's in there, it's in there. I would like to look at a copy if you would refer me to the section you'd like to look at.
Q. I don't have it with me. I'm not, you know, the expert on fire investigation. You said you conducted it in accordance with NFPA 921; that's why I asked the question.
A. I said I follow the guiding principles of NFPA 921 in the course of my investigations.
Q. Uh-huh. Is there more to your answer?
A. If you had a section, a specific section, dealing with that, pertinent to that question, I would be more than happy to review it so that I understand your question in the context of the document to which you are referring.
Q. All right. Page five of your report in about the middle of the page you make the statement:
"Examination of the Louisiana Pacific TechShield sheathing revealed multiple positions of scorching and/or melting of the radiant barrier foil surface."

Page 151

Do you see that?
A. I do.
Q. Are there photographs in your report that depict that?
A. Yes.
Q. Can you tell us what they are?
A. I can. I would refer you to photographs 17, 18, 19, 22, 23, 24, 27 -- excuse me, not 27.
Q. Run those numbers by me again one more time.
A. Seventeen, 18, 19, 22, 23, 24. Those are the ones that depict areas of that type of damage to the radiant barrier sheathing.
Q. All right. Let's look at photo No. 17 first. What I'd like for you to do -- Do you have a pen over there?
A. I do.
Q. Can you, on the copy that's been marked as a deposition exhibit here of your report, circle what you believe shows scorching and/or melting of the radiant barrier foil surface?
A. The red arrows denote those regions as I could see in field inspection and also in photographic examination. This is a wide-out view of that portion of the northern roof slope. So shall I circle each red arrow?
Q. You don't need to do that. I'm having

Page 152

trouble seeing it. Do you have any better photograph of the specific areas that are depicted here, or not?
A. If you look at, for example, the right side, the two red arrows on the right side, photograph 18 is a close-up view of that region with the two red arrows there indicating those same regions of the damage to the radiant barrier sheathing.
Q. And the areas of scorching and/or melting of the radiant barrier foil surface are the ones with the red arrows on photograph 18; is that right?
A. Yes. I would clarify, back to photograph 17. Each of the red arrows indicates an artifact area as is shown in close-up on photograph 18 or 19.
Q. Say that again. I'm sorry.
A. The red arrows in photograph 17 in the wide-out view indicate damage to the radiant barrier sheathing such as that shown in photograph 18. I picked one to zoom in on for the purposes of the report.
Q. Okay. Other than what appears at these red arrows, did you depict in any way evidence of radiant barrier scorching and/or melting?
A. I'm not sure I understand your question.
Q. Other than what you have documented here with the red arrows in photograph 17 and photograph 18, have you depicted or documented in any way any other

Page 153

evidence of radiant barrier scorching or melting?
A. In the additional photographs that I listed would be a portion of that documentation.
Q. Are they all one of these red arrows here?
A. No. I photographed those areas and also made a sketch and denoted their approximate positions on my sketch.
Q. Are there other areas other than the ones that appear with the red arrows?
A. Yes, there are. Yes, sir, there are. If you look at, for example, photographs 22, 23, and 24, those areas are around the clothes dryer vent termination penetration through the roof.
Q. All right. The area around the dryer vent, 22, 23, and 24. Any others?
A. None in my report. I had photographed -- I'd have to refer to my photographs in detail and my notes to elicit other specific areas. I've indicated in the photographs those areas which are visible in those images.
Q. And those are the ones that appear with red arrows. So you've got six of them in photograph 17; is that correct?
A. There were six areas that I indicated in photograph 17.
Q. And two of those areas, of the six, are

Page 154

shown up close in photograph 18; is that correct?
A. Two of them are noted in paragraph 18, yes.
Q. And the others that you found are located in the vicinity of the dryer vent that are depicted in photographs 22, 23, and 24?
MS. MACLEOD: Objection to form.
A. We have some near the dryer vent depicted in those three photographs. We also have one in that region in photograph No. 19 depicted.
Q. Where is the area in photograph 19 located?
A. I believe that area is located in photograph 17, the second arrow from the left, I believe that is the region that it is located. It could be the left most arrow, it could be the second left most arrow; I don't recall right now. I can look at my photographs and give you that, if necessary.
Q. Just to be clear, then. Photograph 19 depicts an area that's one of the two red arrows in your photograph 17; in other words, one of the six?
A. Yes, I believe so.
Q. And what photograph 18 in a close-up depicts are two areas that appear around the chimney area in photograph No. 17, correct?
A. Yes.
Q. So what's depicted in your report, really,

Page 155

is a total of six areas of scorching or melting of the radiant barrier, plus some that appear around the dryer vent that are shown in photographs 22, 23, and 24; is that right?
A. That's what I depicted in my report with representative photographs of those taken on site.
Q. And looking at the section that is depicted in photograph No. 17, the ones that are reflected at the red arrows are the only ones that you are aware of that show scorching or melting of the radiant barrier foil surface?
MS. MACLEOD: Objection to form.
A. Those are the ones I identified.
Q. Sir?
A. Those are the ones I identified.
Q. Right.
A. Quite conceivably, some of them existed at the incipient stage of the fire and burned away.
Q. Photograph No. 18 shows a close-up of an area where you say there was melting or scorching, correct?
A. Yes.
Q. This doesn't show any burning of the paper substrate in it, does it?
A. I don't see any there.
Q. In any of the areas depicted by your

Page 156

photographs do you show any burning away or burning of the paper substrate?
A. Photograph 19 appears to show some of that.
Q. Tell me, specifically, what in 19 shows that.
A. Photograph 19, if we consider that artifact, the largest portion of the artifact, to be somewhat T-shaped, on the left-hand side there's some -- above it there's a staple with the remains of the purple colored Polyvent material present. Directly below that there is some apparent scorching of the paper facing as well as at the bottom of the stem of the "T" there appears to be some apparent scorching of the paper facing and carrying over to the aluminum lamina.
Q. Are you talking about the blackened areas or something that looks a little off color?
A. The blackened area is consistent with soot carbon, a product of combustion.
Q. And that in your opinion is something that depicts the paper substrate burning?
MS. MACLEOD: Objection to form.
A. The way I've reported it, in my estimation, analysis, and training, it appears to be an area where there is some melting and scorching of that radiant barrier product.

Page 157

Q. All right. Let's go to page five of your report.
A. Did you say five?
Q. Right. Five. You make the statement there under Analysis of Incident:
"Analysis of charred structural framing, heat damage patterns, and my inspections of the dwelling indicate the fire damaging the structure originated in the attic along the northern roof slope above the living room."
Is that right?
A. That's, yes, the general summary introduction sentence.
Q. All right. Do you have a photograph which depicts the area of origin that you determined?
A. I do. Photographs 10 and 12, as well as 13, 16, show portions of the area of origin. It's denote specifically in photographs 10 and 12 as well as some photographs in my supplemental report.
Q. All right. I'd like to try and hone in a little bit more on what you determined to be the area of origin of the fire. On page six of your report you say at the top:
"The area of fire origin falls within the 10 to 12 square foot area just south of the

living room, northern knee wall position between 19 and 21 feet west of the eastern living room wall."

Is that correct?

A. That's what I state.

Q. And you further state:

"Due to materials discarded, a more specific point of fire origin cannot be delineated."

Is that correct?

A. Yes.

Q. Looking at the photos that you pointed out to us that show the area of fire origin, I think you started with photograph No. 10 on page 12; is that right?

A. Yes.

Q. Can you tell us whether or not -- And by the way, let's try to orient ourselves first with direction.

Can you tell us which direction north would be, looking at this photograph, photograph No. 10?

A. This photograph is looking upwards towards the ceiling, and northward. The front of the house faces south. So this photograph is looking northwards towards the rear living room wall ceiling juncture.

Q. The direction, then, that the camera is faced is towards the north?

A. Yes. Generally northward.

Q. All right. Looking at your area of fire origin there, can you tell me whether or not the area of fire origin extends northward and down slope behind that partition wall that's depicted in the photograph?

A. The area of origin there as I've shown it is the 19 to 21 feet measured from the wall, the five to six feet measured there from the northern living room wall. The area of origin may extend slightly down slope northward on top of that wall or right where that wall is. With the amount of material that was there, had been burned away, the best I can do is bracket it in that region.

Q. If you were to extend the partition wall directly up, say, into the roofing, how far beneath where that line would exist does your area of origin go?

A. It would not go more than a foot, a foot or less, depending on -- I don't know exactly where it was and I don't exactly know how the Polyvent channel was terminated there, but the roof channel terminated there along that wall plane, so to speak. But down slope of that wall plane there were no roof channels because it was an open attic space, not vaulted ceiling.

Q. So if you were to take the roof partition directly up to the roof, you are saying that the vent channels did not exist below that down slope of it?

A. They went to -- The wall is four inches

wide. There's a two-by-four plus half-inch sheetrock on each side so, nominally, four inches wide. The vent channels are used to ventilate the vaulted ceiling space above the living room. They were not used to ventilate or they were not continued down slope above the master bedroom area.

Q. So where that wall partition would have intersected the roof, the roof channels, the vent channels, do not go down slope?

A. They may go down slope some. I don't know. It depends on if they were using short sections or long sections. They may just stick a whole section up there and it might extend eight inches past that, it might extend two inches, it might stop right there. I don't know with regard to that particular up plane of the wall where it would meet the roof, and this particular picture doesn't depict that and how much further it may go.

Q. Is it your opinion that the area of fire origin would not extend down slope beyond where the vent channels were?

A. The roof framing down slope beyond the roof channels was not as severely damaged as that which is within the area of origin that I've identified. So based on the analysis of the fire charring to the rafters, that brings me to this area of fire origin within which the

point of fire origin falls.

Q. How far down did the charring on the roof rafters go?

A. The rafters were charred down slope, I don't recall specifically, about three feet or so, predominantly above the routing of plastic wrapped HVAC flexible ductwork.

Q. Photograph 21, let's take a look at that.

A. That's the area I'm referring to.

Q. And that shows charring, does it not, on the rafters?

A. It does.

Q. Going down slope?

A. Above the positions where the ductwork was routed, plastic wrapped flexible ductwork was routed, and that plastic wrapping has been consumed.

Q. You can't see any vent channels on this, obviously, right?

A. Not in that picture, no. It's evident in some pictures that I've reviewed that were taken at the time of construction how that was configured. It's also evident in some pictures taken elsewhere in the attic space looking back along that wall.

Q. And is what appears on the right-hand side of photograph 21 the partition wall going up?

Page 162

A. It is.
Q. How far down slope from where that partition wall intersects the rafters did that charring go?
A. As I estimated a minute before, it appears -- I did not measure it specifically -- it appears three feet or so. And looking above it, the temporary roof sheathing can be seen, too, where it's applied above that area, which is much less region.
Q. Are these charred rafters within your area of origin?
A. No, sir.
Q. What caused the charring of these rafters that are depicted in photograph 21?
A. As I mentioned before, I believe that when the flexible ductwork covering, the plastic covering, became involved, that it then spread the fire to this region, in addition to some amount of fire spread will spread down slope, much slower than upslope, but it can spread down slope.
Q. I didn't make out what you said, though, about -- Were you referring to the vent channels just then?
A. No, sir. I was referring to the ductwork that you see in the bottom of the picture.
Q. Yes. Got that.
A. When it became involved that's what I

Page 163

believe caused this localized charring here.
Q. That ductwork caused the charring on these rafters?
A. When it became involved I believe that some of it affected the depth of the char here, yes.
Q. Is the ductwork that's depicted here in photograph 21, was that always in the same position as it's depicted here, or did it fall?
A. No, it was hanging.
Q. Where was it hanging?
A. Hanging from the rafters. There were some nylon straps or some sort of, I believe nylon plastic straps holding it up at the time of the fire.
Q. Are those the straps that appear on the photograph? The black things that are hanging down?
A. There were two runs of ductwork through there, so their black straps remains are hanging down.
Q. Looking at the straps on the far left portion of photograph No. 21, do you believe those straps would have held the ductwork?
A. At what time?
Q. Well, before the fire?
A. Before the fire, yes.
Q. Okay. And is it your opinion that what caused the charring on those rafters here in photograph 21

Page 164

was the involvement of the ductwork in the fire that was hanging from those straps depicted on photograph 21?
A. I believe that the involvement of the ductwork during the fire influenced the charring here, as well as fire spread down slope from the area of origin.
Q. How did the ductwork get involved in the fire?
A. I don't know. I wasn't there when it became involved. From looking at the totality of the information, the plastic vent channels or other material that has burned upslope from that and has fallen down into that region could provide the ignition source for that ductwork.
MR. ELLIS: Why don't we take a quick break and eat a sandwich.
(Pause in proceedings 1:16-1:45 p.m.)
Q. Mr. McGraw, if you would please, we are back on your report, page six. In the second paragraph on page six you make the statement:
"...the artifacts of electrical arcing along the fire alarm circuit conductors represent damage from fire-induced arcing, oftentimes [sometimes] termed arcing through char."
Do you see that?
A. I see that sentence.
Q. You made that statement, sir?

Page 165

A. In my original report I did, yes, make that statement based on my limited inspection of the wiring to date, to that date. Since then, and after reviewing of other data, having reviewed that and inspected those wires, looking at them again, I have changed my opinion there.
Q. We will talk about the change in your opinions. Let me ask, first of all, what is meant by arcing through char?
A. Arcing through char being an electrical discharge across a conductive or semi-conductive medium. Materials as they burn, char, become carbonaceous and slightly semi-conductive, and if you have an electrical discharge, a luminous electrical discharge that produces heat across that from a differing potential voltage, then that would be arcing through char.
Oftentimes and as was believed to be the case here, or actually is in the case here, the circuit breaker was tripped. Oftentimes for the fire alarm circuit, the circuit breaker was tripped, and oftentimes the arcing through char is what may produce that tripping of circuit breakers as the fire progresses.
Q. How did you believe the arcing took place in this case? And I'm going back to your thinking as of August 22 when you made this initial report and arrived at the opinion that this was arcing through char.

Page 166

A. The data that I had when I produced the initial report, in my analysis of the facts of the case and the geometry of the roof, I had two areas of electrical arcing artifacts along the fire alarm branch circuit, both areas were upstream and outside of my area of origin, and that was coupled with a tripped circuit breaker.

In my experience, the totality of that combined, in my experience, is indicative of arcing through char. That was based on simply a field examination of wiring, analysis of photographs, and understanding of the layout of the structure at that time.

Q. You did a field examination of the wiring?

A. I looked at it and identified potential arcing sites and made certain measurements.

Q. Is that depicted in a photograph in your initial report?

A. The wiring as I inspected it, yes. Photographs 14 and 15 show wiring after having been removed, 15 showing one of those artifacts of electrical arcing damage.

Q. Can you tell me more specifically by looking at photograph 15 what it is in that circled area that led you to believe there was arcing through char?

A. The encircled area is the artifact left by the arcing event on that wiring; electrical wire in the

Page 167

copper is melted. The arcing through char, initial arcing through char opinion, wasn't determined based on any one specific condition of the wiring, it wasn't based on any one specific item. It was based on two areas of electrical activity upstream and outside of my area of fire origin along a circuit that had a breaker that had been tripped.

Coupling all that together, based on the information I understood at the time, I believed that to be fire-induced or arcing through char. When I say arcing through char, I'm referring to the wiring becoming damaged during the progression of the fire. It wasn't any one particular thing you might see in this particular photograph; it was my assessment of those facts together.

Q. Looking again within that red circle there, what is the evidence that there was arcing?

A. Within the red circle there is resolidified copper that had been molten along the upper conductor -- I guess you would call it the upper conductor; it's kind of hard to describe verbally -- there are two spots, the more prominent one towards the right, the lesser prominent one towards the left. Between those there was some material that had been somewhat pitted or missing.

Q. If you would please use a pen and let's circle each one of those areas and talk about them. Maybe what you could do is circle them, draw a line out to the

Page 168

side and say "1" and then another one "2" and another one "3" so we can identify specifically what you are talking about.

A. Within the circle there are three anomalies on the wire; two towards the upper portion, one downward. Which one would you like me to start with?

Q. The one on the right first.

A. The upper one on the right?

Q. Yes.

A. We will call that No. 1. That is where copper has resolidified there after the arcing event. It just is, because of the configuration where it was, I guess determined, and the material properties, why it is in the manner, shape, and size it is.

Q. All right. Let's go on to the next one.

A. The left one, No. 2, again that's the smaller region of resolidified copper. That's the region, No. 1 and 2 is the region that was examined in September in joint examination of the wiring with performed CT scan and so forth. That is also evidence of melted resolidified copper there.

The inspection at the time of the photograph and issuance of this report, No. 3, I believe that to possibly be another artifact. There is no artifact on that wire; it must be some kind of debris that was on the wire

Page 169

there, the one that's furthest down.

Q. So that's not an artifact from arcing?

A. Evidently not. It's not present on the wires as I've last looked at them after they have been cleaned and following the joint inspection in September.

Q. And you now believe that to be some kind of debris that was stuck to the wire?

A. I don't know what it is. It's not there today.

Q. The rationale, though, for your initial opinion that this was arcing through char, as I understand it, was that there were two areas of electrical activity that you say were outside the area of origin, and that there was a breaker that had been tripped; is that correct?

A. Yes.

Q. Was there anything else that led you to the arcing through char opinion in the initial report?

A. The reason for using that rationale was to, in my mind, was for using the principle that's outlined in NFPA 921 and other fire investigation texts of arc mapping, using electrical arcing faults to identify certain aspects and circumstances about the fire.

And with regard to fires that oftentimes undergo exposure during -- excuse me, regarding circuits that undergo exposure to fire during the progression of

Page 170

events with a trip breaker and multiple areas of electrical activity on them, in my experience to that time, was most commonly caused by fire-induced arcing or arcing through char.

Q. And the conductor that we are talking about was a fire alarm conductor; is that right?

A. That's along the fire alarm circuit, yes. There were four conductors in that wire bundle.

Q. Going back to photo No. 12, you told us before that there was a portion of the roof that had been taken out and replaced by OSB. Are you able, by looking at photograph No. 10 on page 12, to identify the approximate area in which that portion of the roofing the radiant barrier sheathing had been removed and replaced by the OSB?

A. In photograph No. 10 it is not clear from that photograph -- I can estimate it, yes, in photograph No. 10, what portion of the roof is covered by temporary OSB. I believe photograph 12 shows it more clearly.

Q. Okay. Just to be clear, if you look at photograph No. 12, would you take a pen and just mark the outline of the area that's represented by --

A. So I'm going to mark photograph No. 12 on the right-hand side, I'll mark the eastern bound; again, this photograph is looking upwards and toward the north. On the left-hand side, I'll mark the western bound.

Page 171

Q. All right.

A. That's approximately, by looking at the joist spaces which were about sixteen inches on center, approximately twelve feet wide I think we talked earlier.

Q. Can you tell how far to the north the OSB would have extended?

A. Not from photograph 12.

Q. Is there another photograph that we can use to show that?

A. Photograph No. 21 in my report does show a portion of that area.

Q. I'm sorry. How does photograph 21 show that?

A. In the top center of the photograph there is a yellow arrow; above that arrow is darkened roof sheathing still there, it's been charred. Just to the right of that arrow there is a section of the undamaged OSB that's visible. That's the extent of the OSB replacement down that section. I may have other photographs collected that are taken that may show it differently, from a different vantage.

Q. So it goes as far down as the yellow arrow?

A. Not quite.

Q. Not quite to the yellow arrow?

A. (no audible response)

Page 172

Q. Not quite to the yellow arrow?

A. Not quite.

Q. All right. You say in your report that the area of origin is in an area about ten to twelve square feet; is that correct?

A. Yes. The point of origin within that region of ten to twelve square feet.

Q. And looking at photograph No. 12, that would be the rectangular area that's depicted in the red crosshatching?

A. In photographs 10 and 12, I've attempted to use the red hatched area to give an idea of where that approximate area would be.

Q. And I think you told us that if you were looking to the north, the area of origin would extend to the north or down slope behind where the wall partition goes up, correct?

A. I think what I said was that the greatest area of damage is right there at or above the wall region; where that specific point of origin is may be as far as eight or twelve inches down slope north of that living room wall plane, with the information that is left to look at.

Q. Thank you.

A. My review of Mr. Scardino's report puts the area of origin in the same area.

Page 173

Q. All right. On page seven of your report at the beginning of the third paragraph, full paragraph, you say:

"Lightning energized the Louisiana Pacific TechShield radiant barrier along the northern roof slope and produced electrical tracking in a path between the initially struck woodstove chimney and the grounded dryer exhaust roof termination."

Is that correct?

A. Yes.

Q. And what evidence of tracking did you find?

A. When I use tracking there I'm referring to the scorched and melted sections of the radiant barrier from east to west across the roof slope, some of which we talked about before the recent break and some of those are shown in photograph, denoted, I think it was 17 -- let me confirm -- 17.

Q. So if we are looking at the red arrows there, you are saying that the path would have been along where these red arrows are pointing?

A. The red arrows denote the scorching and melting of the radiant barrier produced by electrical tracking across the surface of the northern roof slope.

Q. Is what I said correct, namely, that where

Page 174

your red arrows are pointing does that depict the path of the electrical tracking?

A. The red arrows depict those artifacts along that path that I was able to identify.

Q. Does the path go somewhere else other than where the arrows are?

A. I don't know where the path exactly goes. I can just tell you where the artifacts are that I was able to identify.

Q. You can't tell us where the path is?

A. What I can tell you is that these were the artifacts that I found and they began at the chimney and went towards the dryer area, they weren't linear, it was in an irregular fashion if you connected the dots, so to speak. These that I have identified in photograph 17 are those that were evident.

Q. I'm still not sure if I've got a clear answer to my question, though.

If we were to look at where the red arrows are pointing, are these on the path?

A. Yes, they are on the path. Once the radiant barrier became energized, the entire radiant barrier is energized, so these are the artifacts along that path that was energized.

Q. Are you saying that the path was energized

Page 175

or the entirety of radiant barrier was energized, now?

A. What I'm saying is that the radiant barrier foil, it's aluminum so it's essentially continuous on each sheet, so many of these paths occurred at -- excuse me, some of these artifacts occurred where joints in the sheathing were and there may have been an electrical discharge there that produced them. Others of them such as that in photograph 18 occurred around the chimney where there were nails that were present.

Q. Right. Maybe my question wasn't clear.

I'm trying to get at the electrical track, the path that you referred to in your report, and at one point you were telling us that the entirety of the radiant barrier sheathing system was energized but we were talking about an electrical path as well, so which is it?

MS. MACLEOD: Objection to form.

A. I guess, visually, these artifacts created a path in my mind from the position of the chimney to the dryer vent. Electrically -- With my knowledge and experience of electrical engineering and electricity, once that sheet of foil becomes energized, it's energized, it's a four-by-eight sheet, that's the size of the sheathing, and then these artifacts denote localized scorching, melting along what I feel is the path to ground. How it exactly got there, I don't know, but it's the path to

Page 176

ground from the chimney, the artifacts along the path to ground from the chimney to the dryer vent termination.

Q. And that path is --

A. Some of those artifacts burned away in the course of the fire so I don't know, I'm not trying to get around your question, but I don't know exactly how it went through those areas that were burned away.

Q. But it's your belief that the red arrows mark where the path to ground went?

MS. MACLEOD: Objection to form.

A. The red arrows denote the artifacts of scorching and arcing which I believe to be indicative of electrical tracking along the path to ground.

Q. All right. Typically, do you find studying or investigating aluminum after a fire provides much real information in light of the low melting point of aluminum?

A. Yes.

Q. And why is that?

A. Well, there's a number of different degrees of insult that a fire can impinge upon any metal. So studying the aluminum after the fire may allow some analysis of relative temperatures that it may have achieved. In this particular case, studying the aluminum and finding that we have melted sections away from the area where we had combustion supports the energy

Page 177

from the lightning causing that damage.

Q. Is the only evidence of something that actually burned along your path to ground what appears in photograph 19?

A. No.

Q. What else?

A. That's the only photograph that's included in my report here. It's not easy to discern it, but in photograph 12 on the bottom left corner, the rafter channel to the left of the recessed fixture, there is a section of the Polyvent there that is scorched as well.

Q. I'm sorry. Where is that?

A. On the bottom left corner above the wall there is a section of the purple Polyvent that is scorched as well. It's not really evident in the picture here, it's evident upon review of the digital photographs.

Q. Can you use your pen and mark what you're talking about?

A. Sure. Circle?

Q. Just put an "A" next to that.

A. An "A." (complied)

Q. And you say that's evidence of the vent burning?

A. I think your question was is there evidence of scorching elsewhere along the roof?

Page 178

Q. Yes.
A. And that vent there had evidence of soot on it, and melting.
Q. The vent did?
A. The remains under the staple.
Q. The vent had evidence of burning. What about the sheathing?
A. I don't recall. I would have to look at the rest of my pictures. I believe there were some other areas. I recall one picture, in particular, that the photograph depicts a rafter adjoining the radiant barrier and there appears to be some amount of black soot coming out from where those two meet. I recall that in my pictures. Other ones, I would have to look at my pictures, individually, to identify specifics.
Q. But what you marked as "A" on photograph No. 12 doesn't show burning of the radiant barrier sheathing; it, instead, shows burning on the vent; is that correct?
MS. MACLEOD: Objection to form.
A. I believe there was some scorching of the radiant barrier there. I'd have to, again, review the photograph to give you the details.
Q. Your photograph is not in the report, though, is it?

Page 179

A. No. I understand it's been provided.
Q. Your report on page seven says:
"Sufficient energy was imparted into or onto available combustibles within the area of fire origin due to the lightning-induced energy/heating that flaming combustion developed."
Is that right?
A. That's what I say; yes, sir.
Q. What were the available combustibles within the area of fire origin?
A. In that area of fire origin we have the roof, the radiant barrier roof sheathing, there are roof rafters, the purple-colored Polyvent ventilation channels, and fiberglass batt insulation -- fiberglass of course not being really combustible. There were electrical wiring conductors run through that region as well.
Q. Can you tell me what energy would be necessary in order to cause available combustibles within the area of fire origin to burst into flame?
A. Those materials would have to be subjected to temperatures above their ignition temperature for flaming combustion to occur.
Q. Is that something that you looked at? What the ignition temperature was of the various types of

Page 180

available combustibles that were within the area of origin?
A. I have a general knowledge of various available, I mean, ignition temperatures of certain materials, and have also imparted some review of Mr. Simmons' work towards some of those other materials as well.
Q. In your opinion would this fire have occurred if lightning had not struck the Taylor house?
MS. MACLEOD: Objection to form.
A. The energy necessary for this fire to occur was imparted by lightning.
Q. So it wouldn't have occurred, would it, unless lightning had struck the house?
A. I don't believe so, no.
Q. If this structure had not had radiant barrier installed in it and had been struck by lightning somewhere, could a fire have occurred?
MS. MACLEOD: Objection to form.
A. A fire could conceivably occur if the house did not have radiant barrier. The facts of the circumstances are that we did have the radiant barrier in this house and we did have other building components that were subjected to insult from the lightning energy, and the fire occurred along the energized radiant barrier.
Q. My question is pretty simple, though. It

Page 181

was, that if the structure had not had radiant barrier in it and it had been struck by lightning, could a fire have occurred?
MS. MACLEOD: Objection to form.
A. I haven't studied this particular house under various circumstances or lightning scenarios, rather, to determine if a fire could have occurred or not. What I've been asked to investigate is the particular facts of this case and the developed fire that occurred on the 29th of August 2011.
Q. You see in the last sentence of this report:
"I understand others to be undertaking analysis of the Louisiana Pacific TechShield radiant barrier as it pertains to specific fire ignition mechanisms and/or other material performance aspects."
Is that correct?
A. That is.
Q. And are the others that were undertaking the analysis of the LP TechShield as it pertains to specific fire ignition mechanisms and/or other material performance aspects, Mr. Simmons?
A. That is to whom I was referring.
Q. Have you investigated lightning fires where radiant barrier sheathing was not present?

Page 182

A. I have.
Q. How many of those have you investigated?
A. Dozens. I don't have a specific number.
Q. On page 24 of your report you show photos there of the chimney cap; is that correct?
A. I do.
Q. And what kind of material is the chimney cap made of?
A. My review of the manufacturer's information is it's stainless steel.
Q. And what you are showing at the arrows there are points of melting and pitting caused by the lightning strike; is that correct?
A. Yes.
Q. Can you tell us what kind of energy was needed to have caused that kind of melting and pitting on the chimney cap?
A. I can't tell you what kind of energy; I know the melting temperature of stainless steel is only 2,600 degrees.
Q. So it would have had to have been somewhere in excess of 2,600 degrees?
A. Roughly, yes. That was the only area of the chimney cap that showed any evidence of melting was the perimeter at the top part.

Page 183

Q. You recently prepared a supplemental and amended report; is that right?
A. Yes.
Q. Is that dated November 7, 2012?
A. No, sir.
(DEFENDANT'S EXHIBIT NO. 33 MARKED)
Q. I've handed you what's been marked as Exhibit 33. Is the covering letter to Exhibit No. 33 dated November 7, 2012 from Ms. MacLeod?
A. Yes.
Q. And is the date on your report which appears in Exhibit No. 33, November 6, 2012?
A. Yes.
Q. In the first paragraph of your report you say:
"The purpose of this supplement is to correlate my field observations of 2011 with data collected during recent joint inspection occurring after issuing my original report."
Is that right?
A. That is what it says. I meant to be more clear, I guess. The joint inspection of the wiring that occurred in Denton, Texas, during September was the joint inspection referred to there.

Page 184

Q. You weren't referring then to October 21?
A. No, sir. No, sir. I apologize for that.
Q. What was the date of the joint inspection in Texas of the wiring?
A. I think it was the 26th or 27th of September, I'm not sure; the dates are muddled in my head. I have the 27th indicated in my report, so September 27, 2012.
Q. Were you a part of the joint inspection?
A. No, sir.
Q. So you didn't go to Texas to actually take a look at the testing of the wires?
A. No, sir.
Q. How did you learn about the results of the testing?
A. I was provided copies of photographs, micrographs, x-rays, scanning electron microscopy data, and CT scans. From that, I also learned from review of the report issued by Mark Goodson of Goodson Engineering that that inspection occurred. As we were trying to coordinate that inspection here for a period of time in Raleigh, I knew that it was to be undertaken, so I was aware that it was ongoing.
Q. Were you aware of it through Ms. MacLeod?
A. Yes.

Page 185

Q. Were you also aware of it through Mr. Simmons?
A. I don't believe I had spoken to Mr. Simmons about it. Ms. MacLeod had asked me to help do some coordination here in Raleigh for it, and then ultimately she asked me to meet with Mr. Parker to transfer custody of some of the evidence so it could be sent to the facility for the inspection.
Q. Did you talk with Mr. Simmons about the results of the testing that was conducted in Texas?
A. I don't believe he and I have spoken about it.
Q. At all, since testing was conducted?
A. No.
Q. In the last sentence of that first paragraph of your report you say:
"...this report amends my opinion regarding the artifacts of electrical activity present along the fire alarm branch circuit wiring."
Is that right?
A. That is correct.
Q. Can you tell me what specific changes you made to your earlier opinion?
A. Yes, sir. I no longer hold to those artifacts being the result of arcing through char or

Page 186

fire-induced arcing. The artifacts present are on the grounding wire conductor only. Electrical arcing through char would be anticipated on a branch circuit to be between the grounding conductor and the energized conductor or the energized conductor and the grounded conductor. We don't have mating surfaces; it's just along the one conductor. So, in light of the new data and review of the new relevant data, I amended my original opinion.

Q. You say you didn't talk with Mr. Simmons about this; is that correct?

A. That's correct.

Q. Who did you talk with about this?

A. I reviewed Mr. Goodson's report, I reviewed the data that was produced from it, and I had conversations with Ms. MacLeod; she attended the inspection in Denton. I also inspected the wiring before issuing this report.

Q. When did you inspect the wiring?

A. October 22, this year, 2012.

Q. Was that after the wiring came back into your possession?

A. It was.

Q. And that was the day after -- no, I'm sorry, we're talking about 2012. Was there anything that prompted your physical inspection of the wiring on October 22?

A. In reviewing my documentation in preparation

Page 187

for anticipated deposition and conversations with Ms. MacLeod, and reviewing my report, I believe there was more than one artifact -- couple things. I believe there was more than one artifact along that branch circuit conductor and so I wanted to confirm that because I saw two in the field. Evidently, one was sectioned out on the 27th of September for CT scan x-ray, and one was not.

In addition, in reviewing my photographs of my original report, photograph No. 20, excuse me, 15, photograph 15, where I've circled those artifacts, I believe there was artifacts on multiple conductors based on my field inspection and review of photographs.

After consulting with Ms. MacLeod, I inquired whether I would be able to look at it to assess whether my original observations were the same or not.

Q. You said you found two artifacts; is that right? On the conductor? In fact, I think you said that in your amended report on page two.

A. That's correct. There are two artifacts of electrical arcing along the fire alarm branch circuit conductor. On photograph No. 15 we've circled two portions of one artifact.

Q. All right.

A. The second area of artifact doesn't show up very well in my initial report. The supplemental report

Page 188

identifies that area as well in more detail.

Q. Just to be clear, let's go to page two of your report. You say:

"...I noted two areas on those conductors displaying conditions consistent with electrical arcing activity."

MS. MACLEOD: Just so we are clear for the record, right now you are talking about the amended and supplemental report, not the original report?

MR. ELLIS: Right. We are on Exhibit No. 33, on page two.

A. Second full paragraph?

Q. Yes. You say:

"...I noted two areas on those conductors displaying conditions consistent with electrical arcing activity."

Is that right?

A. Yes.

Q. Those two conditions are not the areas that you marked on photograph 15 in the original report; there's only one there. Is that right?

A. That is correct. In Photograph 15 there's only one artifact; it's got two bulges in it with some material loss between them. That section in photograph 15 of my original report is the section of wiring that was

Page 189

sectioned out and cut out and put into the CT machine in Denton, Texas on the 27th of September 2012.

Q. I'm sorry. So what's in photograph 15 there was sectioned out and examined in Texas?

A. That's my understanding, yes.

Q. All right. Now you say there's another area that shows an artifact of electrical arcing on that fire alarm branch circuit; is that right?

A. Yes.

Q. Is that depicted in a photograph somewhere?

A. In my supplemental report, yes.

Q. Let's go to that. Where is it shown?

A. It's shown in multiple photographs in my supplemental report. I can go through every single one of them, and that's fine; if you would rather me start with the close-up views of it, that's fine as well. Tell me what you would rather me address first.

Q. Yes, I need the numbers of all the photographs, so you can do them in order if you like. That might be the easiest way.

A. In my supplemental report, the two areas of electrical arcing along the fire alarm branch circuit conductor are denoted "A" and "B," "A" being at the uppermost near the ridge, "B" being the section that is further down slope and is also the section that was

Page 190

depicted in photograph 15 of my original report that I denoted as "B" is that that was sectioned out and examined in Denton, Texas. So throughout the photographs, "A" and "B" designations in my supplemental report identify those areas.

Q. You're talking about "B" being the one that appears in photograph 15 of the original report and "A" being the one that doesn't appear in a photograph on the original report?

A. That's correct.

Q. "B" was sectioned out and examined in Denton, Texas, "A" was not.

A. That's correct.

Q. And "A" appears -- Why don't we just go through here and capture all the photographs where you are showing the part of "A."

A. It should be shown in photographs 1, 2, 3, 5, 6, 10, 13, 14, 15, 16, 17, 18. Those are the ones that show either "A" or "B."

Q. And you're now opining that with respect to the arcing at both locations "A" and "B" as they appear in the photos in your supplemental report, that those areas of electrical arcing were due not to arc through char; is that correct?

A. There was not arcing amongst the conductors

Page 191

in the bundle from fire progression, no.

Q. Is the answer to my question that it's not arc through char?

A. Not necessarily.

MS. MACLEOD: Objection to form.

A. Not necessarily. My opinion is it's not fire-induced electrical arcing during progression of the event.

Q. All right. Then how did those artifacts appear?

A. Well, the artifacts that I have were the melted and resolidified copper along the conductors.

Q. What caused them?

A. The physical condition of the wiring indicates to me that it was an electrical arc, a high temperature luminous discharge from a differing potential voltage between that wiring and something that was nearby, and likely from the radiant barrier becoming energized from the lightning.

Q. You're saying that somehow there was an arc from the radiant barrier sheathing onto the wiring to produce those artifacts?

A. Yes.

Q. And what is the evidence of that?

A. Well, the evidence of that is that we have a

Page 192

lightning strike, evidence of lightning stroke, confirmed lightning activity in the area, confirmation that the radiant barrier became energized, and the damage to that wiring is consistent with that caused by electricity. There is no other electricity there other than the lightning-induced electricity along those wires because there is no mating surface on the other wires for the energy to have been imparted to or from.

Q. If there was an arc from the radiant barrier sheathing to these wires would there be some evidence of that in these artifacts?

MS. MACLEOD: Objection to form.

A. I don't know.

Q. Would you expect to see aluminum?

MS. MACLEOD: Objection to form.

A. I'm not a metallurgist. I know that the wiring is covered by insulation, and how that insulation interplays with providing a separation between the radiant barrier and the copper wiring, you would have to ask somebody that has a metallurgical background to give the details there.

Q. But you are the one who made the opinion that it jumped from the radiant barrier sheathing onto the wire. Now you're telling me I've got to go talk to a metallurgist about it?

Page 193

MS. MACLEOD: Objection to form.

A. I'm telling you based on my education, training, and experience that's my opinion as to how it likely occurred.

Q. And you wouldn't have expected that there would be any aluminum on the conductor if it had arced from the radiant barrier sheathing?

MS. MACLEOD: Objection to form.

A. I did not say whether I would or would not expect aluminum to be on the conductor. What I told you was that the cable has insulation around it, the grounding wire has a paper-like insulation around it, and when the electrical arcing event occurs how that material from either surface becomes deposited and interacts with any barriers between the potential voltage sources, I don't know how that occurs.

Q. You don't know? You don't know whether aluminum ought to be expected, had there been an arcing between the radiant barrier sheathing and the conductor?

MS. MACLEOD: Objection to form.

A. I don't know whether it's to be expected or not, evidently neither does Mr. Goodson because he's opined that these artifacts are from the lightning event as well. My review of the SEM scanning showed no aluminum there on that wire. Again, I'm not a metallurgist; that question

Page 194

may be more directed towards them in terms of material properties.
Q. Your examination showed no aluminum?
A. I didn't examine it for aluminum.
Q. I thought you just said that when you looked at it you didn't find any?
A. I said my review of the SEM scans that were conducted on the 27th of September, that's my interpretation of that data.
Q. That there was no aluminum there?
A. I did not see any in the scan of that. That doesn't determine -- The data from the scan doesn't determine whether there should or shouldn't be any aluminum there; that has to do with how the materials interact.
Q. Did Ms. MacLeod ever suggest to you in any conversations with her before you made your amended and supplemental report that you ought to reconsider whether or not the arcing that occurred was arcing through char or arcing through electrical activity?
A. I don't think she ever suggested that that be reconsidered. I think that -- When I was told that there was only electrical activity on the grounding conductor, then, myself, under self-review of my report, wanted to understand the artifacts that I believed I saw in the field versus what they saw on the 27th of September

Page 195

examination, I'm the one the prompted the review of that, that ultimately led to the amendment of my report.
Q. Just to be clear. No one suggested to you that you ought to consider changing your report so that where you had opined earlier that there was arcing through char, it should now be arcing through electrical activity?
A. I reviewed the new relevant information, including Mr. Goodson's and Mr. Scardino's report, Mr. Simmons' reports, and my review of the data from the 27th of September, and determined that supplementing and amending of my report was appropriate.
Q. That doesn't answer my question, and I will ask it again until you answer it, and that is, are you telling us that no one suggested to you that you should change your opinion that this was arcing through char to arcing through electrical activity?
A. I don't believe so, no.
Q. I don't believe so?
A. The conversation -- Ms. MacLeod and I discussed the situation. I don't recall her suggesting that I needed to change my report. She may have, when I told her that that may change my opinion, she may have said that that may require an amendment of my report rather than a supplement. I don't recall exactly how those conversations went. I specifically recall coming to the

Page 196

conclusion during my inspection that I needed to properly address the situation of new information that had come about.
Q. Have you seen Mr. Simmons' amended supplemental report?
A. I have reviewed it.
Q. When did you review it?
A. Last night. I received it on Thanksgiving.
Q. Did you know in advance of making your own amended and supplemental report that Mr. Simmons was going to change his opinion about arcing through char as well?
A. I think that when Ms. MacLeod discussed with me the findings of the September 27 inspection of the electrical activity only on the grounding conductor, she may have mentioned that Mr. Simmons may have to be revising or amending his report at that time, too.
Q. And that's before you said you would revise yours, right?
A. It was probably before; yes, sir. I undertook a review of the information and determined that I needed to make a revision.
Q. But you determined that you were going to make that revision after Ms. MacLeod told you that Mr. Simmons would probably have to change his report as well, right?

Page 197

A. I remember discussing with Ms. MacLeod the artifacts there that I've circled in photographed 15, and my analysis, initial analysis, of the fire alarm circuit, the trip breaker, the multiple arcing artifacts outside of my area of origin. I don't think I had determined at that time that I was to amend my report. I approached it from the standpoint of this is what I recalled about the data, I would like to review it again. Upon review of that is when I determined I needed to amend my report.
Q. But you heard Ms. MacLeod say, first, that based upon the data that had been presented, Mr. Simmons was going to change his report to reflect that this was not arcing through char, and then you went through your analysis and changed your report; is that right?
A. I don't recall the exact timeline and sequence of that, sir.
Q. You don't recall now?
A. No, I don't recall the sequence. I believe that I was told he was going to issue an amended report; I don't believe I was told all of the nuances of what he was going to be amending. But I did learn before issuing my report that he would be issuing an amended report as well.
Q. And you knew that the amendment that Mr. Simmons was going to make was that this was no longer

Page 198

arcing through char, it was arcing through electrical activity, right?

A. I knew that there was going to be an amendment regarding the arcing through char opinion. I was not provided with the wording or exact identification of what other supplements or amendments he might make.

Q. And then you went and did your own analysis and you decided to amend your report as well, correct?

A. I don't recall the sequence of when I found out he was going to write an amended report versus when I exactly determined I was going to need to write one.

Q. The amended and supplemental report which you put together, dated November 6, 2012, doesn't change any of the opinions that you reached in the earlier report about fire causation; is that correct?

A. That's correct.

Q. And once again, the scope of what you're opining to hasn't changed either. In other words, you are not dealing with the fields of propensity to create a fire and fire causation from the first report?

MS. MACLEOD: Objection to form.

A. The supplemental report doesn't expand or change the scope of my investigation or assignment. It does present in a factual manner the geometry of those wiring artifacts collected within the attic space.

Page 199

Q. When you say it changed the geometry, what do you mean?

A. I didn't say changed the geometry; I said it presents the geometry of the artifacts collected in the attic space.

What I said before that was, my supplemental report doesn't change the scope of what my opinions about origin and cause were, as in my initial report, with regard to all except for the arcing through char.

Q. You just referred to geometry. Can you put that in some sort of lay language?

A. Yes. So what I looked at with regard to the wiring for the supplemental report was to establish where those artifacts of arcing were, dimensionally and physically, with respect to the area of fire origin.

Q. I think I understand. Looking at your photograph No. 2 in your supplemental report, we still have a ten by twelve area of origin; is that correct?

A. Yes. Based on everything that I reviewed, that's the area of origin I'm able to establish, with the point of fire origin therein.

Q. Could the area of origin be greater than that ten by twelve square foot area?

A. I don't believe so, based on all the information that I've reviewed.

Page 200

Q. Could it be less than the ten by twelve square foot area?

A. I can't discern it to any smaller degree than what I've been able to identify in my reports.

Q. Is there any part of your supplemental report, Exhibit No. 33, which is a correction of what you said in your original report?

A. I guess the correction would be the amending my opinion that the electrical activity along this fire alarm branch circuit was not arcing through char from fire-induced exposure but rather electrical activity.

Q. The rest of your report and the part of it that has to do with geometry, namely, the placement of the "A" and "B" segments of the fire alarm conductor is new; is that right?

A. It is new, as is the last photograph which was provided by the homeowner of the roof area during construction. That's the portion that supplements my original report.

Q. Tell me about the photograph you're talking about now that the homeowner provided.

A. No. 21.

Q. What about the photograph that follows that's not numbered, where did that come from? I've got a picture of a wire.

Page 201

A. I have no idea.

Q. Do you know what that depicts?

A. That photograph appears to be a larger image of my photograph No. 16 in my supplemental report. I don't recall providing that with my supplemental report, but it may be one that I provided to Ms. MacLeod during deposition preparation.

Q. So you think the photograph that follows photograph No. 21 in this exhibit is another photograph of what appears in photograph 16 of your supplemental report?

A. Yes. It appears to be photograph 16 without the annotations, printed in an eight-and-a-half-by-eleven size, which I may have printed and provided her during one of our meetings.

Q. Let's go to photograph 21.

A. I'm ready.

Q. This is a view looking upward at the northern roof slope above the living room in an image captured during construction and provided by the homeowner; is that right?

A. That's what I understand, yes.

Q. Are you able to discern on photograph 21 of your supplemental report where the area of origin that you determined is located?

A. Yes.

Q. Can you take a pen and mark that for me?
A. How would you like it marked?
Q. Mark it in a rectangle and then in a line from it let's put a "C."
A. (complied)
Q. Can I see that please?
A. (complied)
Q. What you've shown here in this rectangle, which you've marked as "C" on photograph 21, shows the area of origin extending further to the north or down slope than where the partition wall would intersect the roof; is that right?
A. I'm not sure I intended to -- I think I intended to -- I don't know how the geometry is here. I intended for it to be right at that intersection there where that wall is, maybe the back side of it. As you see from this photograph, the Polyvent channels do not extend past that wall plane, and I'm not intending to represent that rectangle as exactly the area I've been able to represent on others without further study of the photograph.
Q. But it was your opinion earlier that the area of fire origin actually did extend northward and down slope from where the wall partition would intersect roof?
MS. MACLEOD: Objection to form.

A. I believe I said just from the living room plane of that wall, which is four inches thick, from that living room plane I think I said as much as a foot northward. That picture with the roof slope and the angle of the camera, it's hard to tell exactly what your dimensions are.
Q. And you also just observed for us that these vents, at least in the area of origin where you've marked it, do not extend beyond where the wall partition would extend upward and hit the roof; is that right?
A. They appear not to extend beyond the back side or the north side of that partition knee wall.
Q. In your area of origin?
A. Yes.
Q. But in other areas they apparently extend further to the north, right? The down slope?
A. In other areas outside the area of origin they appear they may have. In other areas outside the area of origin they appear that they stop short.
Q. Doesn't seem to be any real regularity to that, does it?
MS. MACLEOD: Objection.
A. I think the only thing that matters is how the configuration was in the area of origin.
Q. My question was, there doesn't seem to be any regularity in where these vent shells are located, is there?

MS. MACLEOD: Objection to form.
A. I don't know what phase this construction occurred and what their methodology was for installing them, what may or may not have been regular to them, or not.
MR. ELLIS: Why don't we take a short break?
(Pause in proceedings 2:51-3:08 p.m.)
Q. Mr. McGraw, looking at photograph No. 17 in your original report --
A. You said original?
Q. Yes.
A. I don't have that in front of me. Okay.
Q. Got 17?
A. Yes, sir.
Q. When we were talking about this photograph earlier, you were pointing out to us the areas of scorching that you had located on the LP radiant barrier sheathing, right?
MS. MACLEOD: Objection to form.
A. That's what the arrows denote.
Q. Right. And I think you told us that all of those arrows would have been along a path that the electricity took from where the lightning bolt struck the chimney, over to the dryer vent and then to ground; is that right?

A. I believe that to be the case.
Q. You also told us that you believe the entire sheet of radiant barrier sheathing would have been energized by the electrical activity; is that correct?
A. It's my understanding that each four-by-eight sheet of the radiant barrier sheathing the alumina is continuous, so it should stay in its same potential across it. So if you energize one side of it, the other side should go to the same voltage on that sheet.
Q. The same voltage throughout the sheath?
A. It's a conductor. I don't see why it would be -- There may be an electrical wave on a micro scale, but you would have to ask an electrical engineer about the variation there. But it's my understanding when a conductor becomes energized, the conductor is energized.
Q. So you believe it would have been the same voltage throughout the sheath?
A. Each individual sheet.
Q. Each individual sheet?
A. Yes.
Q. Then why is the scorching that you've identified on photograph 17 along this path that is marked by the red arrows, why don't we see scorching activity in

Page 206

evidence throughout the radiant barrier sheets?
MS. MACLEOD: Objection to form.
A. Most of those paths along that region are either (a) near the chimney cap, excuse me, the chimney flashing, no penetrations on the right-hand side as shown in photograph No. 18. Or if you look right above that in photograph 18, there is a joint in the sheathing across that region, so there is a joint in the sheathing at many of those arrows between an upslope and a down slope sheet.
Q. A joint in the sheathing? Okay.
A. Yes. They are installed in four-by-eight sections across the whole roof surface, roof slope, so there are multiple sheets.
Q. All right. But that doesn't explain to me why, if you've got the same voltage, you've got scorching in just one area.
A. Was that a question?
Q. Yes.
MS. MACLEOD: Objection to form.
Q. Can you explain to me why?
A. What I'm saying is this scorching there, if you look on photograph No. 19, is a general -- that's the reason I included that. It shows that we have two sheets there, one upper slope, one lower, one more higher on the slope, one lower on the slope, with the artifact of

Page 207

scorching and electrical activity where those sheets join. That tells me that those sheets were at a different potential voltage for electrical arcing to occur at the time that artifact was developed.
Q. So the scorching occurs along a seam or a joint between the two sheets of radiant barrier sheathing?
MS. MACLEOD: Objection to form.
A. Most of that which I identified in photograph 17 occurred along those joints.
Q. Could you explain why any scorching would occur other places than at the joint between sheaths?
A. Because the radiant barrier at that area encountered another conductive material as a potential voltage and electrical discharge in the form of an arc occurred.
Q. So you believe an arc would have occurred where the red arrows are that are not along a seam?
MS. MACLEOD: Objection to form.
A. Most of those that are not along the seam are shown in photograph 18, and then also in photographs 23 and 24, 22, around the dryer vent. As far as where the exact layout of all the seams were, I don't recall.
Q. Is it your view now that the path of electrical activity followed the seam; that that's where this evidence of electrical tracking occurs?

Page 208

MS. MACLEOD: Objection to form.
A. The artifacts that I've identified with these arrows in photograph 17 generally does follow that seam, and then it progresses past the area of origin to the dryer vent.
Q. When you look at your photograph No. 18 and you see those spots that are marked with your red arrows, is that an area where the aluminum has vaporized or melted or caught on fire? Tell me what your thinking is on that.
A. It appears to be in one or more of those categories, yes.
Q. But you don't know which?
A. No. It appears that that area is, I don't know if vaporized is the right word, I think the term I've heard used is ablate, ablation; that's what appears to be there. Those nails were securing the chimney flashing to the roof. Excuse me. Let me clarify that. Those artifacts occurred around nails that were securing the chimney flashing to the roof.
Q. And what is meant by the term ablate?
A. Ablate, my understanding is it's when the material essentially, the easiest way to think of it, it vaporizes. But it melts, erupts is not necessarily the right word but that's the way it's easy for me to think, from electrical energization. You end up with a void along

Page 209

the surface.
Q. Looking again at photograph 17 and along the seam between the radiant barrier sheets, do you see that?
A. I'm looking at photograph 17.
Q. Is it your understanding that those sheets of sheathing are connected so that the aluminum metal is connected from one sheet to the other?
A. I don't know whether the aluminum metal is connected from one sheet to the other. I did not see a physical connection between the sheets; they abutted each other. There were no metal clips connecting the sheets along the surface of the roof.
Q. No metal clips or staples?
A. No metal clips to provide -- There were no metal clips along the seams of the roof sheathing.
Q. Is your understanding that the aluminum from one sheet is in contact with the aluminum from an adjoining sheet?
MS. MACLEOD: Objection to form.
A. I don't have an understanding along those lines. I don't know whether it is, whether it was; it doesn't need to be to allow for electrical discharge of high voltage.
Q. Is it your opinion that the first ignition occurred along this path that's marked by your red arrows?

Page 210

A. I think you're going to have to be more specific in your question. That's kind of a vague question.
Q. You're got a path, apparently, that's what you testified to, that connects the red arrows; is that right? Is that right?
MS. MACLEOD: Objection to form.
A. Yes, that's a path.
Q. Is it your opinion that somewhere along the path that would be the seam between the radiant barrier sheaths, first ignition occurred?
MS. MACLEOD: Objection to form.
A. I'm not testifying that the path is only along the radiant barrier seam, but it's my opinion that we had ignition along that path within the area of fire origin that caused the greatest damage, and also in areas such as photograph 19 where we have scorching of the radiant barrier.
Q. Tell me again where No. 19 is on photograph 17.
A. I believe No. 19 is one of the left most arrows, one of the two most left arrows in photograph 17. Given the configuration of the rafters and the position of the roof sheathing joint, I believe it to be the second arrow from the left in photograph 17.

Page 211

(DEFENDANT'S EXHIBIT NO. 33 SHOWN)
Q. Returning to Exhibit No. 33, which was your supplemental and amended report, there are a number of pictures that are attached to the back of the report. I think you told us that these were supplied by the owner; is that correct?
A. I don't believe I've testified with regard to anything about these photographs except for the one immediately following my photograph 21.
Q. Where did you get the photographs that appear after your photograph 21?
A. I received these photographs when you handed me this exhibit today.
Q. You hadn't seen them before?
A. I received one of them, I believe, which was included as photograph 21 in my report. Before today, that's the only one I've seen.
MS. MACLEOD; And if you will look at the cover letter from November 7, these photographs were produced to me, and from me to you as part of the supplemental discovery package.
Q. Did you rely upon these photographs in any way in reaching your opinion?
A. No. I just received the photographs here in front of me today.

Page 212

Q. Having looked at them today is, or are, any one of these significant with respect to the opinions that you've made?
A. I have not studied these photographs.
Q. Mr. McGraw, do you know whether or not there are any building requirements or standards for residential construction that require building materials to be built to withstand lightning strikes?
A. Rephrase the question again.
Q. Are there any building requirements or standards for residential construction that require building materials to be built to withstand lightning strikes?
A. Off the top of my head I do not know any requirements of such in the residential building code.
Q. Do you know what the range of voltage is that a lightning bolt carries?
A. The range of voltages that I understand from my review of various references is anywhere from tens of thousands to hundreds of thousands of volts.
Q. Do you know if any building materials are constructed or built to withstand that kind of charge?
A. I don't know whether any building materials are constructed to withstand that kind of charge. I know that lightning protection systems are marketed, designed,

Page 213

and developed to withstand lightning, to direct lightning. I know that such systems are in use throughout the world, various places, and effectively convey lightning energy in a safe manner.
Q. Let's take lightning protection systems out of it for a minute. Do you know of any building materials that are built to withstand the kind of charge that a lightning bolt delivers?
A. I don't think that's the intent of the building code. The building code with regard to most residences has to do with loading, structural loading, wind loading, foundation support, and such. I don't know of any, off the top of my head, lightning sustainability requirement, to coin the phrase maybe.
Q. I asked you about lightning sustainability requirements in an earlier question. But my question to you now is, are you aware of any building materials that are built and constructed to withstand the charge that a lightning bolt would deliver?
MS. MACLEOD: Objection to form.
A. Lightning protection systems would be the only thing that comes to mind.
Q. All right. Is it your opinion that a building material that will not withstand the charge of a lightning bolt is defective or not?

Page 214

MS. MACLEOD: Objection to form.
A. I don't have an opinion and have not been asked to offer an opinion along those lines.
Q. I know that you haven't been asked to, but do you have any opinion at all with respect to that?
MS. MACLEOD: Objection.
Q. Would a rafter, for instance, that's not built to withstand a lightning bolt charge be defective?
MS. MACLEOD: Objection to form.
A. Well, I think a rafter is a sawn piece of wood, you don't really built it, so I have an issue with the way your question is worded. But I haven't been asked to develop or investigate any matters with regard to that, so I don't have an opinion to offer to you here today.
Q. And you can't tell me, apart from the assignment that you were given, whether or not a building component is defective if it's unable to withstand a lightning bolt?
MS. MACLEOD: Objection to form.
A. I think that there is some vagueness in your question in terms of withstanding. There's a variety of the types of damage that lightning can impose upon a material, so it's too broad of a question to give you a specific answer.
Q. Catch fire?

Page 215

A. Some materials are non-combustible and could sustain damage from lightning, so it's too broad of a question to answer.
Q. How about a rafter? What's a rafter made out of?
A. Most rafters are made of wood, although --
Q. Let's take a wooden rafter. Do you have an opinion as to whether a wooden rafter is defective because it won't withstand or catch fire if a lightning bolt hits it?
MS. MACLEOD: Objection to form.
A. I don't believe that a rafter that doesn't catch fire when a lightning bolt hits it would be defective.
Q. All right. Do you know whether or not there are aluminum products that are used in building construction?
A. Yes.
Q. How many different products can you name that have aluminum in them?
A. Radiant barrier, HVAC ductwork, HVAC fittings and components, electrical wiring. There are some fasteners that are aluminum. There's a myriad of different aluminum components used in building construction.
Q. It's pretty pervasive, isn't it, in building

Page 216

construction?
A. Generally, yes.
Q. Were you able to find other aluminum components in the attic of the Taylor home when you inspected it?
A. I don't recall looking for any other -- I don't recall looking for any aluminum components at all. TechShield happens to have aluminum lamina on it. I don't recall observing any other components that were obviously aluminum in the attic of the home.
Q. You didn't look for them?
A. I did not look for them, no. I do recall the dryer vent termination I believe had some aluminum HVAC tape around it; I recall seeing that in the attic.
Q. I'd like to return to the opinion that you gave about the arcing of the radiant barrier to the wire. Do you remember giving that opinion?
A. I remember discussing that.
Q. I think you told us that one of the reasons that the aluminum might not appear on the piece of the artifact which was tested is because it might have hit the insulation on the wire; is that right?
A. It could have. I don't know. If the aluminum produced electrical sparking where those ejected pieces ended up, I don't know. If it ablated and we end up

Page 217

with some amount of vaporization where we first have our electrical discharge, I don't know how that exact mechanism would work on a small scale.
Q. You don't know how it would work? How does it pass through the insulation?
A. The insulation for most residential wiring is rated at 600 volts. The electrical energy imparted by lightning as we just discussed exceeds that, so it can pass through the insulation. The conductive property or the insulative properties of that insulation is not rated for tens or hundreds of thousands of voltage.
Q. At the point in which it would pass through the insulation, would there be any evidence that it had passed through?
MS. MACLEOD: Objection to form.
A. I don't know. You'd have to ask somebody that studies those type of events in detail.
Q. You still have the wire, though, right?
A. Yes.
Q. Have you examined the wire recently to see whether or not there was any evidence that an electrical arc might have passed through it?
A. I'm not sure that I understand your question.
Q. You were telling us that the arc went from

Page 218

the radiant barrier sheathing through the insulation of the wire, right?
A. The electrical voltage potential created the arc.
Q. Did you look at the wire for any evidence to support your theory that this arc would have passed through the insulation to the wire?
A. There's no insulation left to look at.
Q. There's no insulation left on the wire?
A. Not in the area where the artifacts of electrical arcing are.
Q. I'm going to ask you in a few minutes if you wouldn't mind going out to where your truck or trailer is to find that for us, okay?
A. To find what?
Q. The wire that you say the radiant barrier sheathing arced to.
A. Fair enough.
(DEFENDANT'S EXHIBIT NO. 34 MARKED)
Q. I'm showing you what's been marked as Exhibit No. 34. Can you identify that for us, please?
A. I can.
Q. What is it?
A. It is attachment No. 7 to my initial report, it's entitled LightningTrax report No. LT60080-291153.

Page 219

Q. And what was the purpose of attaching this report to your expert report?
A. During the course of my investigation I obtained two lightning strike, LightningTrax type reports, this one and one from Vaisala through STRIKEnet, and the purpose was to investigate what those detection systems identified with regard to lightning strokes around the Taylor residence at the time of the fire.
Q. What did this one tell you?
A. This particular report tells me that there were fourteen strokes detected within a one mile radius of the residence location. Those strokes ranged in time from about 4:47 p.m. until 7:47 p.m., most of them falling between 4:47 and 5:25.
(DEFENDANT'S EXHIBIT NO. 35 MARKED)
Q. I'm showing you what's been marked as Exhibit No. 35. Can you tell us what that is, please?
A. It's a copy of attachment No. 6 to my report, which is the STRIKEnet report by Vaisala, V-A-I-S-A-L-A, No. 305061 their report number.
Q. And how are you using this report?
A. Just as the other; to investigate the occurrence of recorded lightning strokes in the area of the Taylor residence on the day of the fire.
Q. What did that show about the number of

Page 220

lightning strikes within a five mile radius of the Taylor home?
A. It showed 392 strikes within a five mile radius of the Taylor home between 6:00 p.m. on August 28 and 5:59 p.m. on August 29.
Q. I'm sorry. Six p.m. on what?
A. August 28, and 5:00 p.m. on August 29. It's a 24-hour format for their --
Q. Do you know how many homes within that five mile radius were struck by lightning during that period of time?
A. I do not.
Q. Do you know how many homes within that five mile radius have radiant barrier sheathing?
A. I do not.
Q. Do you know how many total homes were in that five mile radius?
A. No.
Q. Do you know how many of the homes in that five mile radius with radiant barrier sheathing were struck by lightning?
A. At least one of them.
Q. Do you know how many of those homes with radiant barrier sheathing were not struck by lightning?
A. I do not.

Page 221

Q. You told us that you've investigated a number of residential fires caused by lightning strikes, right?
A. Yes.
Q. Several dozen?
A. I would say dozens, yes. Of the hundred fires I've investigated, dozens of those would have been lightning, lightning related.
Q. And the only one that you are aware of that had radiant barrier sheathing in it was the Taylor home; is that correct?
A. Yes.
Q. Would you agree that whether or not radiant barrier sheathing is present in a house, that a house that's struck by lightning can catch fire?
MS. MACLEOD: Objection to form.
A. I've not been asked to investigate that aspect in this case.
Q. I understand you've not been asked to investigate that. But would you agree, based upon your experience, that a house that's struck by lightning, that doesn't have radiant barrier sheathing in it, can catch fire?
A. That's true. A house can catch fire if its struck by lightning.

Q. And you would agree that if a house is struck by lightning it could result in a fire whether or not radiant barrier is present in it, or not. Right?

A. It could. But in this particular case we are dealing with a fire in a house that has radiant barrier with a path to ground and the area of origin falling within that region.

Q. I don't need to hear your parroting that each time; you can just answer the questions I've asked.

Have you investigated residential fires caused by lightning where something other than radiant barrier ignited the fire?

A. Yes.

Q. In fact, you've done it dozens upon dozens of times, right?

MS. MACLEOD: Objection to form.

A. I've investigated dozens of lightning fires, lightning-related fires.

Q. Where what ignited was something other than radiant barrier, right?

A. Yes.

Q. Can you give me sort of a sampling of what other materials ignited in those dozens upon dozens of cases?

MS. MACLEOD: Objection to form.

A. The cases that come to mind involve corrugated stainless steel tubing, energized electrical wiring -- cable television in one case, and the other case that readily comes to mind was satellite dish wiring, as well as chimneys struck by lightning.

Q. How many approximate cause and origin reports have you completed during the course of your career as a fire investigator?

A. I've completed hundreds of cause and origin investigations; some of them require reports, some of them don't. I do not have a number within that hundreds of investigations to give you.

Q. Within the hundreds that you have made, however, have you reported that the cause of a fire to a residential home was a lightning strike?

A. I think I understood your question to be, have I reported within those hundreds that the cause was a lightning strike?

Q. Yes.

A. Yes.

Q. In fact, you've done that dozens upon dozens of times, right?

MS. MACLEOD: Objection to form.

A. I have reported that the energy source for the fire is lightning, yes, in probably dozens of cases.

Q. All right. And in this particular case you were asked not to prepare a cause and origin report, right?

A. I'm not sure that I understand your question. I was asked to prepare a report and did so in August of this year.

Q. That's the expert report that you prepared in connection with this litigation, right?

A. That is the initial report I prepared.

Q. But when you first visited the Taylor home back in August of 2011, I'm sorry, September of 2011, you were asked not to prepare a cause and origin report, right?

MS. MACLEOD: Objection to form.

A. When I first investigated the fire and provided a verbal report to my clients I was not given direction. Initially, that they would want to see what needed to be done, which led to the joint inspection. After that time, I took direction from Ms. MacLeod and I don't know that I was ever told not to produce a report during that time frame.

Q. Did you ever ask the people from State Farm or Ms. MacLeod whether you could prepare a cause and origin report on the Taylor residence?

A. No. I believe I was told at that time that they didn't need further work done and that they were considering how they were going to proceed with regard to

their aspects, whether it be the State Farm in-house persons or Ms. MacLeod's consultation to them.

Q. On those hundreds of occasions where you've done a fire investigation on a residence, did you ever reach an opinion as to the cause and origin of the fire without actually visiting, physically, the scene of the fire?

A. I have been involved in the investigation of certain incidents where the scene is no longer available for inspection. Recalling one specifically off the top of my head, I'm having difficulty in doing that, other than one restaurant explosion incident I'm aware of that sticks in my head for some reason. But I have performed engineering investigations and not visited the scene because of extenuating circumstances or for some other reason.

Q. One reason you just told us about was because the scene no longer existed, right?

A. I think in that case the scene no longer existed. I don't recall. I don't even know when that was, probably eight or nine years ago, or more.

Q. All right. When you conduct a fire investigation of origin you want to be able to visit the scene where the fire occurred, don't you?

A. It depends on the aspects of the

Page 226

investigation for which you are participating and your clients ask for consultation. Some aspects require visit to the scene and others may not.

Q. In the case of a fire investigation like you conduct, where you reach an opinion as to the cause and origin of a fire, is it important for you to visit the scene of the fire?

A. It's helpful but it's not necessary.

Q. It's not necessary for you to visit?

A. No. You can review others' materials and come to some determinations; it may not be ideal but it can be done.

Q. So you could have done that in this case, huh? You could have just taken other people's photographs and measurements and you'd feel perfectly comfortable reaching the opinions you did on cause and origin of this fire?

MS. MACLEOD: Objection to form.

Q. Is that right?

A. I don't think I can make an assessment on that because that's not what happened in this case for me, so I can't make that assessment for you from my viewpoint.

Q. I'm giving you a hypothetical. The hypothetical is that instead of actually visiting the fire yourself, even though the scene exists, it's there, the

Page 227

evidence exists, would you feel comfortable in reaching opinions as to the cause and origin of the fire without actually visiting it?

A. It depends on the circumstances of the case and the questions which I've been asked to address.

Q. I'm talking about this case.

A. I can't -- I think my answer to your question is biased because I've been to the scene twice, so I don't really have a good basis for answering your question in a hypothetical manner in this particular case.

Q. You do completely, though. I'm giving you all the facts that you need.

A. But you are asking me to answer a hypothetical question based on information that I have, so if the information I have is not hypothetical, I can't make that assessment for a hypothesized person or investigator that I don't know who is. I don't know how to answer your question any other way.

Q. You don't have to; you can make it for yourself. My question is whether you, Rob McGraw, as a fire investigator would feel comfortable reaching opinions as to the cause and origin of this fire, the Taylor home fire, without actually visiting the scene?

MS. MACLEOD: Objection to form.

A. Yes, there are certain opinions that I could

Page 228

come to without visiting the scene.

Q. As to the cause and origin you would reach an opinion?

A. Potentially. It may be undetermined, I don't know, but I could potentially do it.

Q. And you feel comfortable doing it?

A. I wouldn't offer an opinion I didn't feel comfortable for. You are asking me a hypothetical question.

Q. That's right.

A. What I'm telling you is that there would be -- There are certain opinions that could be derived, in my estimation, from review of the field data, if you are asking me to derive it from the data that I have, that I collected. That's the only understanding I have of your question. Yes, I could come to opinions about it.

Q. On how many occasions out of the hundreds of fire investigations that you've done did you reach an opinion as to the cause and origin of a fire without actually visiting the scene?

A. I don't have a number that I could tell you off the top of my head.

Q. One? You told me about the one where the scene no longer existed.

A. Yes, sir, I did. And to be honest with you,

Page 229

I don't recall what the scope of my assignment in that case was, exactly. I remember some of the generalities of the case. I don't recall the scope of my assignment, whether I was asked to consult regarding the origin and cause or other aspects. I was using that as an example for times that I get involved when the scene is not available and you can't go to the scene.

I don't keep a record of which scenes or which cases I have that I go to a scene, which ones I don't; I don't keep a record of that.

Q. Can you remember more than one?

A. I remember some previous instances of some product failure cases where products were brought for lab exam and we were asked to come to an opinion as to the origin or cause of the fire with regard to that product, when the scene was no longer available.

Q. In that case, you are talking about a product that's suspicious, correct?

A. In that case we're talking about a product that they asked for evaluation of, suspicious or otherwise.

Q. It's a specific product that they asked for an evaluation of, right?

A. Yes.

Q. Are you presently involved in any other claims involving radiant barrier?

Page 230

A. Radiant barrier sheathing?
Q. Yes.
A. Not to my knowledge.
Q. You would know, wouldn't you?
A. Unless it's involved in one of the houses or structures I've looked at and it's concealed behind a wall or ceiling space. I've not seen it on another investigation that I'm currently participating in.
Q. Have you had conversations with attorneys other than Ms. MacLeod about this case?
A. With Mr. Murphy.
Q. Mr. George Murphy of the Vinson & Elkins firm?
A. Yes.
Q. Anybody else?
A. No, sir. And those conversations with Mr. Murphy pertained to coordination of the inspection and then just interaction on the scene.
Q. In the course that you took which was referred to as, I think, Lightning 101, do you remember that seminar?
A. Yes.
Q. Did you receive some training or education about what it is that attracts lightning?
A. I don't recall that course. That course was

Page 231

nine years ago. I don't recall specifically what was covered during that seminar.
Q. Do you know what it is that attracts lightning?
A. Lightning is an electrical discharge where there is a varying potential voltage because of the charge of the cloud versus the charge of the ground. I'm not a lightning expert and I'm not here to offer expertise in lightning.
Q. With respect to the opinion that you gave us just a little while ago about the arcing from the radiant barrier sheathing to the fire alarm conductor, did you find any physical evidence to support that opinion?
A. The artifacts on the fire alarm conductor being only present on the grounding conductor, are the artifacts there that tell me that it became energized?
The lack of artifacts on the energized conductor or conductors within that bundle tells me that the energization of the grounding conductor did not occur from those sections of wiring. The evidence of the lightning stroke damage to the chimney cap and radiant barrier being energized, working through the hypotheses there, that's the only other potential different voltage source that I find in that area where those artifacts occurred.

Page 232

Q. I'm sorry. How does the physical evidence around the chimney cap help you with this?
A. The chimney cap evidence on the top of lightning strike melting the stainless steel, and then with the tracking across the radiant barrier supporting the radiant barrier itself becoming energized.
Q. It supports it becoming energized, but what physical evidence supports the opinion that there was arcing from the radiant barrier sheathing to the conductor?
MS. MACLEOD: Objection to form.
A. That's the physical evidence I just told about. We have physical evidence that the radiant barrier became energized. We have physical evidence that the grounding conductor became energized and was not energized by its adjacent conductors in the wiring bundle.
Using the scientific methodology as prescribed in 921 for our fire investigation, as I did for my whole investigation, I ran through the possibilities and the hypotheses of what could have energized that wire, and I'm left with only the radiant barrier.
So I'm using the totality of the information from the energized radiant barrier and the condition of the grounding wire with the artifacts on it, absent that mating surface on adjacent conductors, to come to that.
Q. And tell me why it is that there wasn't any

Page 233

evidence -- How the fact that there is no evidence of arcing on the other wires, and just grounding wire, help you with this?
MS. MACLEOD: Objection to form.
A. My experience, and all the courses I've been to that discuss wiring artifacts after a fire, and arc mapping, the two conductive surfaces that have a different potential voltage when they contact you have material deposition on each surface.
So, had the insulation on one of the energized conductors become degraded and contact the grounding conductor, I would expect material deposition during the course of that event, which we don't have here; we don't have a mating surface.
Q. Could you go out to your trailer or truck, or whatever you brought, and bring in the wiring that we've been talking about, and also the sections that I think have been referred to in your reports as item No. 9, which is the sheet of radiant barrier sheathing?
A. The wiring section and item No. 9?
Q. Right.
A. Yes.
MR. ELLIS: Let's take a break while you are doing that.
(Pause in proceedings 3:55-4:15 p.m.)

Page 234

Q. Mr. McGraw, we've talked during the course of your deposition about this electrical path, right?
A. Yes.
Q. And you've showed us on various photographs and exhibits the red arrows that delineate the path, correct?
MS. MACLEOD: Objection to form.
A. I believe that the arrows we were looking at in that particular photograph was photograph 17 of my original report, I think is the number.
Q. Right. But that delineates the path; is that correct? Photograph 17?
A. The arrows delineate the artifacts that I saw that I believed to be along the path. I don't know what the exact path was; it could be a branch path. I don't know.
Q. Was this path an area of higher voltage or was it the same voltage throughout the sheets of radiant barrier sheathing?
MS. MACLEOD: Objection to form.
A. I don't know. I wasn't there to make that measurement at the time of the event.
Q. I understand that. But based upon the evidence, are you able -- I'm sorry. Based upon the evidence, are you able to make any sort of opinion as to

Page 235

whether there was a difference in voltage or current along this path that's depicted on your drawings as distinguished from the rest of the radiant barrier sheathing?
MS. MACLEOD: Objection to form.
A. Based upon the evidence that I saw looking at the house during my visits there, the melting areas supported an electrical arcing event, even a luminous discharge, where there was varying potential voltage. So based on that there would be some variation of the voltage on either side of those artifact positions.
Q. That you had, according to your supplemental report, an arcing event which occurred outside this path, in fact, outside your area of origin, according to your testimony, between the radiant barrier sheathing and the fire alarm conductor; is that right?
MS. MACLEOD: Objection to form.
A. There are multiple areas, in my opinion, of electrical arcing along the radiant barrier outside of my area of origin. And yes, the artifacts of electrical activity that in my opinion are likely related to the lightning event, to the fire alarm branch circuit conductors, fell outside of my area of origin as well.
Q. But they were due to the electrical activity; is that correct?
A. Due to the lightning event?

Page 236

Q. Yes.
A. Possibly, yes. That may be an additional denotation or demarcation of branch path to ground there that the energy from the lightning was seeking all paths to ground or all available paths to ground there.
Q. So the path may have deviated from that line across the seam up to where the arcing occurred; is that right?
MS. MACLEOD: Objection to form.
A. Much as lightning can present in a branch fashion, the path across these conductive materials or media is an extension of that which we might see in the sky in a branch lightning stroke. So for it to come from the clouds to the ground and deviate a few feet across the roof sheathing is possible. I've just pointed out in the photograph what was evident during my inspection.
Q. Right. But now you've connected it to the arcing which you say occurred from the radiant barrier sheathing up to the fire alarm conductor, and from what you just told us, that could have occurred anywhere on the sheet, right?
A. I'm not sure that I follow that question.
Q. I thought you said that there could have been arcing like this occurring virtually anywhere on the radiant barrier sheathing because the path could have

Page 237

jumped around.
A. I don't recall saying that. What I recall telling you is that the path may have taken a branch type of manifestation. If you looked at it in a plan type of view across the roof sheathing, I don't know. Certain portions of the path burned away is the nature of the fire, and I have used those red arrows in photograph 17, which we've referred to multiple times, to denote those artifacts that I saw along that one seam.
Q. You told us that you observed limits on your expertise here when reaching your opinions in this case; is that correct?
A. Try to.
Q. You did observe them; you didn't go outside your area of expertise, did you?
A. I don't believe so.
Q. And you also told us that you observed areas on the limitation of your assignment, correct?
A. I observed the assignment as my clients had requested me to.
Q. And the limitations on your assignment were that you were not going to get into the areas of -- and I want to make sure I got this right -- ignition propensity, material properties, or susceptibility to damage from lightning insult. Right?

Page 238

A. It is my understanding that Mr. Simmons was undertaking a study and analysis of those aspects of the TechShield.
Q. And those areas were not part of your assignment?
A. No.
Q. Do you have an opinion in this case, then, as to whether or not the radiant barrier sheathing is a defective product?
A. I have not been asked to develop an opinion, nor do I have an opinion in this particular case.
Q. Do you have an opinion as to whether or not radiant barrier sheathing is a hazardous product?
MS. MACLEOD: Objection to form.
A. Radiant barrier sheathing has different properties than what we might say conventional OSB sheathing in that it has an aluminum lamina on it, so from that standpoint it presents a different hazard. In the event of becoming in contact with any kind of voltage source it can, potentially, become energized for a distance, depending upon the configuration of its installation.
Q. But any number of things can do that because they've got aluminum in them, right, that conducts electricity?

Page 239

MS. MACLEOD: Objection to form.
A. I don't really follow that question. You said any number of things can do that; I'm not sure what "that" is referring to. Sorry.
Q. There may be a thousand different aluminum type products that you might find in a house that could conduct electricity, right?
A. There are a number of different metal products, aluminum products, that can conduct electricity, yes.
In this particular case, the aluminum lamina of the TechShield is applied to the roof sheathing, which, the only thing you can compare to there is other types of roof sheathing, not other types of building products that may not be roof sheathing.
Q. Understanding both the limitations on your expertise, which you say you observed, and the limitations on your assignment, which you say you observed, did you reach an opinion in this case that the Louisiana Pacific radiant barrier sheathing is a hazardous product?
MS. MACLEOD: Objection to form.
A. I have not reached an opinion one way or the other in that aspect.
Q. And again, understanding what the limitations on your expertise are, and the limitations on your assignment, did you reach an opinion in this case that the cause of the fire in the Taylor home was the radiant barrier sheathing?

Page 240

MS. MACLEOD: Objection to form.
A. My opinion as to the cause of the fire is that the lightning-induced energy imparted into available combustibles within the area of fire origin along the course of the radiant barrier produced heating and then flaming combustion ensued.
Q. As I read that, that's not an opinion that the radiant barrier sheathing caused the fire. Is that what you intended?
A. What I'm telling you is that the energy that caused the fire is from lightning. The lightning energy resulted in ignition along the path of the electrical tracking on the radiant barrier. Other than that, I have not developed an opinion regarding to Louisiana Pacific being a cause of the fire -- excuse me, the Louisiana Pacific TechShield being a cause of the fire.
(DEFENDANT'S EXHIBIT NO. 36 MARKED)
Q. I'm showing you what's been marked as Exhibit No. 36. Can you identify what No. 36 is?
A. This appears to be a photocopy of my case investigation file contents, with a cover letter dated November 19 from Ms. MacLeod, and it appears to be the

Page 241

contents, absent both of my reports, up to and after -- up to the day of my supplemental report preparation.
Q. Have you generated more notes since the date of your supplemental report?
A. I have additional documents in my file since the date of my report, to include some email correspondence from Ms. MacLeod, my deposition subpoena and notice of deposition, the report of Mr. Simmons, and a couple of other photographs provided by the homeowners.
Q. Sorry. Photographs provided by who?
A. Photographs provided to me by Ms. MacLeod, but ultimately by the homeowners.
Q. You're talking about the ones that we just saw in a deposition exhibit here?
A. I presume they are in that stack. I don't know. I haven't studied those.
MR. ELLIS: Skye is shaking her head, so let's go off the record for just a second to make sure we are talking about the same thing.
(Pause in proceedings 4:28-4:29 p.m.)
Q. Mr. McGraw, if you would please take a look at Exhibit No. 36. Flip to the third page. About halfway down you will see a handwritten note and I'm sorry I just can't read it, but I can make out the "requested contractor" part of it, I think.

A. Which page are you on? They are numbered at the top.
Q. The third page, 1/11.
A. Okay. Yes.
Q. Do you have that?
A. Yes, I do. That is a September 12, 2011 conversation, first conversation I had with Mr. Coffey, and my initials JRM, that's just how I make my shorthand, "requested contractor demolition be delayed pending origin and cause work."
Q. All right.
A. When I received the case I was told that certain demolition activities were ongoing or planned.
Q. Do you know whether or not demolition or remedial activities took place after you made this request?
A. I do not know.
Q. On your page that's marked at the top 7/11, in the lower half you will see a handwritten note under December 2 of 2011 that starts "Instrumentation."
A. Yes.
Q. Would you read that for us, please?
A. Yes. "Instrumentation and expertise of use not within my typical area of expertise."
Q. What does instrumentation mean?
A. That's referring back to our conversation a

few hours ago when I was asked to develop an outline or protocol and estimate for testing to assess further characteristics of the radiant barrier. This is the eventual outcome of that request and my response to Ms. MacLeod by telephone conversation.
Q. This was your set of notes from the telephone call with Ms. MacLeod on December 2, 2011?
A. Yes. I was indicating to her that I understood Mr. Simmons -- and she knew at the time with his article -- to have already undertaken some research, didn't know what other research had been done, and I felt like testing of that material with regard to instrumentation and developing that system was outside of my area of expertise.
Q. Turn to your page marked in the top right-hand corner 9/11.
A. Yes.
Q. The note in the margin is for March 26, 2012?
A. Yes.
Q. Would you just start reading at the top of the page there for me?
A. Yes. "Called Ms. MacLeod," I notate her phone number, "general area of origin, roof rear slope framing about ten to twelve square foot area above the wall between living room and master bedroom where rafters burned

through and/or were cut out. Aluminum wires with arcing, fire alarm circuit (red/green) a few feet down slope from ridge along rear slope aligned with rafters compromised. Will ship items to Mr. Simmons."
Q. What was the occasion of your call on March 26?
A. She called me on March 26 to advise me, to inquire as to where my general area of fire origin was, based on my investigation and field inspections, and also to inquire specifics about the wiring that was collected, what my observations were, and to request that I ship those to Mr. Simmons.
Q. Did you ship them to Mr. Simmons?
A. Yes.
Q. Let's turn to the page that's marked in the top right-hand corner A/A/AS. It's about this deep.
A. You can't read my writing. I apologize. Can you give me a date on the left-hand side?
Q. It's 10/10/12, and there is an 11/1/12.
A. Yes. That should be A4/A5 but I found it; 10/10/12, 11/1/12, yes.
Q. If you will go down then to the notes for November 1, 2012, can you read those please?
A. Yes. "Call from Attorney MacLeod to discuss progress on supplemental report. Definitely wants

description of two areas evidence of electrical activity, (EEA) as they relate to my area of origin. She's still considering whether any other clarification of my original report is needed. She'll keep me up to date as she continues review."
Q. My handwriting is actually much worse than yours.
A. I've had to read pages of notes into records, so.
Q. Just let me check through here one last time.
MR. ELLIS: That's all of the questions that I have for you.
MS. MACLEOD: I don't have any questions.
FURTHER, DEPONENT SAITH NOT
(Whereupon at 4:36 p.m. the deposition was concluded)

_____

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION
Civil Action No. 5:12-cv-289-BO

STATE FARM AND CASUALTY)
COMPANY as subrogee of)
CHRISTOPHER TAYLOR,) CERTIFICATE OF DEPONENT
Plaintiffs,)
)
v.) J. Robert McGraw, Jr.
)
LOUISIANA-PACIFIC CORPORATION,)
Defendant.)

I, J. Robert McGraw, Jr., hereby certify that I was first duly sworn by Frances A. Graham, Notary Public, prior to the commencement of my deposition on November 26, 2012 in Wake Forest, North Carolina;

That review, examination, and signing of the deposition was not waived.

The foregoing constitutes a true and accurate transcript of said deposition: (check one)

_____ (a) No changes are necessary.

_____ (b) I desire that the changes attached hereto described on the Errata/Signature Page to my deposition be incorporated into said deposition.

WITNESS MY HAND AND SEAL this _____

day of_____, 2012.

_____(SEAL)
J. ROBERT McGRAW, JR.

NORTH CAROLINA
ERRATA/SIGNATURE PAGE
_____ COUNTY

The North Carolina Rules of Civil Procedure provide that any changes in form or substance which the witness desires to make to his deposition shall be entered by the witness upon a correction page with a statement of the reasons given by the witness for making them.

Page	Line	Correction	Reason

Any additional corrections should be made on a separate sheet and attached hereto.

I, J. Robert McGraw, Jr., have read the foregoing 246 pages, this errata sheet being page 247, and the same is a true and correct transcript of my testimony given on November 26, 2012, except such corrections listed above.

_____
J. ROBERT McGRAW, JR.

Subscribed and sworn to before me this)
_____day of _____, 2012.)
)
_____)
Notary Public)
)
My commission expires: _____)

STATE OF NORTH CAROLINA

COUNTY OF WAKE CERTIFICATE OF REPORTER

I, Frances A. Graham, Notary Public in and for the above county and state, do hereby certify that the deposition of J. Robert McGraw, Jr. was given before me at the time and place hereinbefore set forth;

That the witness was first duly sworn by me to testify to the truth, the whole truth and nothing but the truth;

That thereupon the foregoing questions were asked and foregoing answers made by the witness and were duly recorded by me by means of stenomask, then reduced to typewritten form by me personally or under my direction;

That at the conclusion of this proceeding counsel for Mr. Taylor specifically requested he read and sign his deposition;

This document, 247 page,s plus this Certificate of Reporter, page 248, to the best of my knowledge and belief is a true and correct transcript of that proceeding on November 26, 2012;

I further certify that I am not of counsel to any of the parties, nor am I interested in the event/outcome of this case.

IN WITNESS WHEREOF I have hereunto set my hand and seal on December 6, 2012.

_____
FRANCES A. GRAHAM
Notary Public
Wake County, North Carolina
Notary No. 19940960108

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION**

STATE FARM FIRE and CASUALTY COMPANY as a subrogee of CHRISTOPHER TAYLOR,

Plaintiffs,

vs. Case No. 5:12-CV-289-BO

LOUISIANA-PACIFIC CORPORATION,

Defendant.

Deposition of:

BRIAN MICHAEL ST. GERMAIN

**Taken on behalf of the Plaintiffs
December 10, 2012**

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I N D E X

E X H I B I T S

S T I P U L A T I O N S

The deposition of **BRIAN MICHAEL ST. GERMAIN** was taken by counsel for the Plaintiffs, at the offices of Bradley, Arant, Boult, Cummings, 1600 Division Street, Suite 700, Nashville, Tennessee, on December 10, 2012 for all purposes under the Civil Rules of Federal Procedure.

The formalities as to notice, caption, certificate, et cetera, are waived. All objections, except as to the form of the questions, are reserved to the hearing.

It is agreed that STEPHANIE LAKE JONES, Notary Public and Licensed Court Reporter for the State of Tennessee, may swear the witness, and that the reading and signing of the completed deposition by the witness are not waived.

* * *

BRIAN MICHAEL GERMAIN,

was called as a witness, and after having been duly sworn, testified as follows:

EXAMINATION

QUESTIONS BY MR. ANDERS:

Q. Mr. St. Germain, my name is Patrick Anders and I represent State Farm in the lawsuit captioned State Farm as subrogee of Christopher Taylor versus Louisiana-Pacific Corporation and I'm here to take your deposition today. I'm sure you've had an opportunity to discuss this with your attorney, but if I could just set forth a few ground rules as we begin.

First and most important, if you don't understand a question that I ask you, if I ask you too quietly, if I mumble, if I ask you a question that in any way you're uncomfortable with, could you let me know that?

A. **Yes.**

Q. All right. Otherwise, I will assume that you did understand my questions.

A. **Okay.**

Q. Is that a fair assumption for me to make?

A. **Yes.**

Q. If I ask you a question that you feel calls for a "yes" or a "no" answer, could you verbalize your response as "yes" or "no," rather than nodding or shaking your head or saying "uh-huh" or "huh-uh" so that we don't end up arguing later over what your answer actually was; is that fair?

A. **Yes.**

Q. And if I remind you to do that at any point during the deposition, I hope you won't hold that against me.

A. **I won't.**

Q. If you need to take a break at any point, this is not an endurance contest, I don't think it's going to go forever, but if you need to take a break at any point just let me know and I'll be happy to accommodate you. I would ask that if you wish to take a break and I have a question pending, that you answer the question completely before we begin our break; is that fair?

A. **That's fair.**

Q. Could you state your full name, please?

A. **Brian Michael St. Germain.**

Q. And how are you employed?

A. **By Louisiana-Pacific Corporation.**

Q. And what is your title with Louisiana-Pacific Corporation?

A. **Quality and technical manager, OSB business.**

Q. Quality and technical manager, OSB business?

A. **Right.**

Q. How long has that been your title at the company?

A. **Six and a half years.**

Q. And how long all told have you been employed by Louisiana-Pacific?

A. **15 years.**

Q. Before you were a quality and technical manager for the OSB business, what was your position with the company?

A. **Prior to that, I was the regional quality manager for the northern region.**

Q. And out of curiosity, what is the northern region?

A. **At the time, it was comprised of six OSB plants, primarily in the northern U.S. and Canada.**

Q. And if you've been with the company for 15 years, we've accounted for approximately 12 and a half of those years, have you had any positions previous to those?

A. **Yes. Previous to regional quality manager,**

I was the SPC implementation manager, statistical process control, implementation manager.

Q. "SPC" stands for statistical process control?

A. **Correct.**

Q. And does that account for your full career with Louisiana-Pacific Corporation?

A. **No. Prior to that, I was a research and development technician for the siding business.**

Q. Any particular sort of siding?

A. **LP siding.**

Q. LP stands for Louisiana-Pacific?

A. **Louisiana-Pacific, yes.**

Q. So all forms of siding, or did you have a specific area of concentration?

A. **It was the SmartSide business.**

Q. Can you tell me what SmartSide is?

A. **SmartSide is our strand based siding product.**

Q. When you say a "strand based siding product," I'll let you know when I think of Louisiana-Pacific, one of the things I think about is a product called oriented stand board by lay people. Is that what we're talking about?

A. **It's very similar, you know, different**

performance requirements.
Q. And since -- OSB is typically used as siding, is it?
A. **No.**
Q. But a SmartSide can be used as siding?
A. **Yeah, it's a different product. It's a similar substrate, but then it's going to have different features that enable it to be used outside.**
Q. Was SmartSide a radiant barrier siding product?
A. **No.**
Q. How were you employed before coming to Louisiana-Pacific?
A. **Weyerhaeuser Corporation.**
Q. And can you tell me approximately what years you were with Weyerhaeuser?
A. **'96 through sometime '99.**
Q. And did you begin with Louisiana-Pacific about '99?
A. **Yes, '99, yes.**
Q. And what did you do for Weyerhaeuser?
A. **Product technician at an oriented strand board plant.**
Q. Was that the only position you had with

Weyerhaeuser?
A. **Yes.**
Q. How were you employed before Weyerhaeuser?
A. **That was my first post college position.**
Q. Okay. Which is a good lead-in to a question that I was going to ask you. Tell me about your educational background.
A. **I have a wood science degree, a Bachelor of Science in wood science from Michigan Tech University.**
Q. Where is Michigan Tech located?
A. **Houghton, Michigan.**
Q. Houghton?
A. **Houghton, H-O-U-G-H-T-O-N.**
Q. When did you obtain your bachelor's in wood science?
A. **'96.**
Q. And how many years all told did you attend Michigan Tech?
A. **Five, five and a half.**
Q. Have you attended any other colleges?
A. **No.**
Q. Since obtaining your Bachelor of Science in wood science, have you done any graduate work?
A. **Not graduate work, no.**

Q. Have you had any other specialized education?
A. **Yes.**
Q. Tell me about that.
A. **Primarily in the area of statistics, process control, industrial experimentation.**
Q. And do you consider those to be the same field, or different fields?
A. **Related but probably different disciplines within.**
Q. Tell me about your training in statistics.
A. **Most of what we do is understanding process variability and then how to interpret your data.**
Q. And how have you obtained a training in statistics?
A. **I've had classes both in college as well as the secondary courses.**
Q. Where have you had your secondary courses in statistics?
A. **Primarily through Donald Wheeler. He's -- SPC Press, I think, is the name of his company. Donald Wheeler is one of the most recognized statisticians in the U.S., several publications.**
Q. And does Mr. Wheeler teach conventional courses in a classroom, or how does he convey that

education?
A. **They're usually through week-long seminars. So week-long classes, kind of focused education. They're usually -- each course is about three continuing education units.**
Q. Now, as an attorney, when I think of -- I have a specific meaning when I think of continuing education credits. In what field would your courses in statistics through Donald Wheeler, toward what field would those continuing education credits apply?
A. **Those ones probably in the areas of either mathematics or statistics.**
Q. Are you a member of any professional societies or organizations or licensed professions that would require you to maintain continuing education credits?
A. **No, I'm not.**
Q. But if you were, these would apply?
A. **Yes.**
Q. Have we covered the extent of your education in statistics, college and courses through Donald Wheeler?
A. **No. I've also taken courses through the University of Tennessee in Knoxville.**

Q. As for those courses, are we speaking of -- the courses at the University of Tennessee, are we speaking of the same thing, week-long seminars, that sort of thing?
A. **Yes. Qualifying for about the same CEU type.**
Q. All right. Let's talk about process control. Tell me what you mean by "process control."
A. **Process control is specific if you have a lot of variation in any manufacturing process. So it's really -- that variation is what dictates the product quality. So I'm being able to understand it and control it. There's a whole science behind that, which is SPC.**
Q. So as to minimize the variability of the product?
A. **Identify it first, and then be able to look for, you know, reasons or ways to minimize it.**
Q. And where have you obtained continuing education in process control?
A. **Those classes that I've already spoken about. That's what they are geared towards.**
Q. I believe you also mentioned industrial experimentation?

A. **Yes.**
Q. Tell me what you mean by that.
A. **Design of experiments is what it's typically referred to. There is a -- that was taught through Donald Wheeler. There's a whole process for conducting industrial experimentation that helps you isolate variables and better understand sources of variability and what's impacting them.**
Q. And that's also taught through Donald Wheeler's program?
A. **Yes.**
Q. Do you have any plans to seek further education apart from the continuing industrial education that you spoke of?
A. **I'm currently enrolled in leadership classes at Belmont here in Nashville.**
Q. And is that on behalf of Louisiana-Pacific?
A. **Yes.**
Q. By way of a few background questions, have you ever given a deposition prior to today?
A. **No, I haven't.**
Q. Have you ever testified in a court or before an administrative panel?
A. **No, I haven't.**
Q. You're doing fine.

I suspect I know the answer to this, but have you ever been convicted of a felony?
A. **No, I haven't.**
Q. What, if anything, did you do to prepare for today's deposition?
A. **I came in this morning and met with George and Laura at LP and came over here.**
Q. You met with George and Norma?
A. **Laura, Laura Proctor.**
Q. And what is Laura Proctor's position?
A. **She is in our legal team. I don't know her exact title.**
Q. Is she an attorney or a paralegal?
A. **Attorney.**
Q. Did you review any documents to review for today's deposition?
A. **No, I haven't.**
Q. And apart from meeting with George and Laura Proctor, you haven't done anything else to prepare for today's deposition?
A. **No.**
Q. Can you describe your duties as quality and technical manager, OSB business for me?
A. **I'm accountable for all of product quality and ensuring our products meet customer**

expectations. That's my primary function.
Q. How do you go about being accountable for product quality and ensuring that products meet customer expectations?
A. **I'm accountable for all of our quality systems at the plant level.**
Q. Is that throughout the corporation or --
A. **Within the OSB business.**
Q. And when you say the OSB business, what products come within the ambit of the OSB business?
A. **Everything, we have 12 manufacturing sites. So there's OSB based products, there is various special features to those products that can differentiate them.**
Q. Could you --
A. **The special features? So obviously --**
Q. Or if you want to name the products and tell me --
A. **Yes.**
Q. -- how they're distinguished.
A. **Okay. TechShield would be one. We have various grades of OSB flooring. We manufacture rim board. We make a FlameBlock, it's a fire resistant OSB product.**
Q. Any other products come to mind?

A. **No.**
Q. So I have TechShield, OSB flooring, ring board?
A. **Rim board.**
Q. What is rim board?
A. **Rim board is if you were installing a -- if you were building a house, when you're doing your floor system, you're going to lay out all of your I-joists or your floor trusses, basically. And then surrounding the perimeter of that, the rim around it is your rim board which attaches to the joists.**
We also make -- I guess there's other variations of OSB that we make. We make web stock which actually goes in the I joists of the floor systems or roof systems. And then, of course, OSB sheathing, just standard OSB sheathing. That's the primary product.
Q. Uh-huh. Have we covered all the products for which you're responsible for ensuring quality?
A. **Yes.**
Q. Correct me if I'm wrong, but Louisiana-Pacific is a multinational corporation?
A. **Yes.**
Q. Are you responsible for the company's OSB

development. Then I also have a customer service manager.
Q. You said that you oversee new product development?
A. **Yes.**
Q. Would that be solely within the OSB business division of the company, or would it pertain to other products as well?
A. **Primarily the OSB business. We do have a shared oversight into the other businesses as well.**
Q. And I believe you mentioned that person's title was a product process manager?
A. **Product process development manager.**
Q. Development manager. I'm sorry.
Who is the company's product process development manager?
A. **Jeff Jayne.**
Q. And how do I spell the last name?
A. **J-A-Y-N-E.**
Q. And is Mr. Jayne here in Nashville as well?
A. **No, he's in Sagola, Michigan.**
Q. Are you familiar with the development of the LP TechShield product?
A. **No.**
Q. Do you know when the product was developed?

product quality worldwide, or solely within the United States or a specific geographic region?
A. **Primarily through the -- I'm directly accountable for the United States or I should say North America, U.S. and Canada. I also have some accountability for South America, but not direct. It's more of a resource.**
Q. You're a resource for the company's South American operations?
A. **We have a South American division, yes, sir, and that's -- I provide them support.**
Q. Do you have a staff?
A. **Yes.**
Q. How large is your staff?
A. **I have three direct reports, one indirect report, and then underneath those, it gets down into the plant level staff.**
Q. And by the three direct reports, would those be people responsible for specific product lines or geographic regions, how does that work?
A. **No. I have one quality manager, who all of the plant quality managers report directly to him. So he's more on the manufacturing side. I have a product process development manager who oversees new product development and new process**

A. **Approximately.**
Q. Approximately when was it developed?
A. **Approximately -- well, LP took the name and the product in roughly 2000, '99 or 2000.**
Q. Okay. You said the company took the name and the product?
A. **It was previously manufactured by a company called Kool Ply.**
Q. How do I spell the name of that company?
A. **Cool with a K. So K-O-O-L, ply, P-L-Y.**
Q. Is that one word or two?
A. **I think it's dashed or hyphenated.**
Q. Was the product known as TechShield when it was manufactured by Kool Ply?
A. **No, it was known as Kool Ply. And I'll have to go back. I mean, I'm not exactly sure if Kool Ply was the brand name or if that was the name of the company, and the company name might have been something different. I've always just heard it referred to as Kool Ply.**
Q. And you said that was approximately 12 years ago?
A. **Yes.**
Q. Do you know when Kool Ply developed the product?

A. **They had been on the market for a while prior to that. I don't know. I don't know the specific date or even an approximate date.**
Q. If you know, did Louisiana-Pacific acquire Kool Ply, or did it purchase the product?
A. **We acquired Kool Ply.**
Q. And would that mean you -- and by "you," I mean Louisiana-Pacific acquired all of Kool Ply's assets, manufacturing the product itself, et cetera?
A. **I don't know all the details.**
Q. Fair enough. And that would have occurred sometime around the year 2000?
A. **Yes.**
Q. Do you know -- and I may have already asked you this, but do you know how long Kool Ply had had the product on the market at the time LP took it over?
A. **It was for several years. I don't know how many. I mean, I believe it was quite a while, say upwards of ten years. But I don't know specifically how long they had it, no.**
Q. Correct me if I'm wrong, but when that occurred, you would have been regional quality manager for the northern region?

A. **Yes.**
Q. Other than the product that is now known as TechShield, do you know what else, if anything, Louisiana-Pacific acquired from Kool Ply?
A. **I'm not aware of anything else.**
Q. So, for instance, no one came to you and said, Brian, we're going to give you three new manufacturing plants to oversee in the northern division at that time?
A. **No.**
Q. Okay. Prior to acquiring Kool Ply and its product, do you know whether Louisiana-Pacific had been involved in the manufacture and development of any radiant barrier sheathing products?
A. **No, I don't know.**
Q. You're not aware of any radiant --
A. **I'm not aware.**
Q. -- barrier products?
A. **I was not aware.**
Q. Okay. Let's talk about terminology. You know quite a bit more about the radiant barrier sheathing product than I do. Can you tell me what you mean by the term "radiant barrier" first?
A. **Well, we manufacture radiant barrier sheathing. And so radiant barrier helps reduce a**

home's energy costs by making use of radiant barrier materials. Radiant barrier limits -- radiation from the sun is really what we're trying to protect from. So that tends to heat up the roof. And so this product helps limit the amount of the sun's heat that radiates into the attic.
Q. And Louisiana-Pacific's radiant barrier sheathing is known as TechShield, correct?
A. **Correct.**
Q. Going forward in the deposition, I'm going to be using the term a whole lot.
A. **That's fine.**
Q. If I'm referring to TechShield, you understand that to be Louisiana-Pacific's radiant barrier sheathing?
A. **Yes.**
Q. You mentioned that TechShield is designed for use in roofing?
A. **Primarily, yes.**
Q. All right. Are there any other applications for the product?
A. **It can be used as a sheathing as well. Primarily, it could be used on the gable ends in a house. By "gable ends," I mean that area of the attic which would be facing the interior of the**

attic.
Q. Yes, sir. And what are the components of TechShield?
A. **The components?**
Q. Yes, sir.
A. **We start with a base of OSB sheathing, and that would be a radiant sheathing product similar to what we'd use if a radiant barrier wasn't used. We then laminate the foil to that product with an adhesive. After lamination, we incise the foil. And by incising, I mean we perforate -- we push through the foil through the glue line into the wood fiber. And that's a patented process.**
Q. You push the foil into the product?
A. **Small, very small holes that we push into the product.**
Q. And what's the purpose of the small holes?
A. **The purpose of the holes is to allow the wood to dry if it were to become wet during construction.**
Q. And does it have any other benefits?
A. **No.**
Q. So the components of TechShield are three, as I understand it. A radiated OSB sheathing --
A. **Yes.**

Q. -- first, correct?
A. **Uh-huh.**
Q. A laminant, that's an adhesive?
A. **Well, there's a glue line.**
Q. Yes, sir.
A. **And so you have the OSB sheathing, the glue line, and then the radiant barrier below it.**
Q. What sort of glue does the company use?
A. **What sort of glue?**
Q. Yes, sir.
A. **I'd have to get the exact chemical name. It would be similar to like an Elmer's type glue.**
Q. So just a standard wood glue?
A. **For the most part, yeah. It cures under standard conditions so heat is not required.**
Q. And as for the OSB sheathing portion of the TechShield product, is that essentially identical to standard Louisiana-Pacific OSB TechShield?
A. **Yes, of the same grade.**
Q. But it's not something that Louisiana-Pacific or someone else developed specifically for use in TechShield?
A. **No. No.**
Q. As for the aluminum foil laminant, is there any paper portion of the foil laminant?

A. **Yes.**
Q. All right. Tell me about that.
A. **Well, the radiant barrier foil that I described would be a craft paper. And then to the craft paper laminated a very thin sheet of aluminum.**
Q. And how is the thin sheet of aluminum laminated to the craft paper?
A. **I don't know specifically how it's laminated.**
Q. Would it be with glue or an adhesive or --
A. **Well, the craft paper would be a phenolic saturated craft paper. And so the phenolic would be basically the resins in the paper that would laminate to the foil.**
Q. Okay. So the craft paper essentially laminates itself when --
A. **I believe that that -- I haven't been to their process, so I can't say specifically how it's laminated.**
Q. Where -- well, first, by whom is the aluminum foil manufactured, is that done within Louisiana-Pacific?
A. **No, we purchase the foil.**
Q. By whom do you purchase it?

A. **International Converter.**
Q. And where is International Converter located, or do you know where they manufacture it?
A. **It varies. I believe they have three different manufacturing locations that we'll get our product from. I believe the product that was manufactured in Roxboro would be more likely coming out of Ohio, but I'd have to double check.**
Q. And you just mentioned Roxboro, I take it you're thinking of Roxboro, North Carolina?
A. **Yes.**
Q. Would it be fair to say that -- the Taylor home is in Lewisburg. So in any event, that's close enough.
A. **Uh-huh.**
Q. Would it be fair to say that it's likely that if we have a home in North Carolina, the foil laminant was manufactured in the Ohio plant?
A. **I would have to double check. But it's -- you know, logistically, you would want to source it from the closest plant.**
Q. Sure.
A. **I would have to double check. I think that's the closest, but I'm not sure.**
Q. Other than Ohio, do you know where

International Converter manufactures the foil laminant itself?
A. **I don't.**
Q. You have mentioned business operations in North America making up the U.S. and Canada as well as South America. Does Louisiana-Pacific have business operations on any other parts of the globe that you're aware of?
A. **Not manufacturing, no.**
Q. How about sales?
A. **Yes, we do sell internationally.**
Q. And by "internationally," does that mean the European market?
A. **Yes.**
Q. In what world markets is the TechShield product sold?
A. **U.S.**
Q. U.S. only?
A. **U.S., Canada -- well, I take that back. We don't sell in Canada. We manufacture in Canada. We don't sell in Canada.**
Q. Is it sold in South America?
A. **Yes.**
Q. Is it sold in Europe?
A. **Not that I'm aware of.**

Q. Is it sold in any other geographical region other than the United States and South America, which I guess would -- would that take into account Central America as well?
A. **I don't believe we sell to Central America.**
Q. Okay. Then would it be sold in any other part of the globe?
A. **We do manufacture in South America and it would be sold in South America.**
Q. But nowhere else, not Europe?
A. **I don't believe so.**
Q. Not Africa?
A. **I don't believe so.**
Q. Not Asia?
A. **I don't -- yeah, again, our South American is a different company. So I don't know exactly where all their sales are.**
Q. Fair enough. Why isn't the product sold in Canada?
A. **It had had limited benefits in that environment, in that climate primarily.**
Q. People in Canada don't need to cool their attics, I take it?
A. **No.**
Q. Or at least not to the extent they do in

North Carolina or Tennessee?
A. **It's primarily used when you're trying to -- in a cooling climate, primarily a cooling climate.**
Q. Has the TechShield product ever been sold in Canada?
A. **I can't say that. I don't know. I mean, we'll -- LP sells to distributors and where our product gets distributed to from there we don't always have control over.**
Q. Okay.
A. **It would be unlikely though.**
Q. We were speaking earlier about the aluminum foil laminant and that the company purchased it from International Converter. When you, meaning Louisiana-Pacific, buys this product does it come preapplied to the craft paper?
A. **Yes.**
Q. Can you tell me about the steps that are involved in taking these three components, the OSB sheathing, the glue and the laminant, the aluminum foil laminant, how do they come together to become the TechShield radiant barrier? Can you walk me through the manufacturing process at Louisiana-Pacific?
A. **Yeah. It is a patented process.**

THE WITNESS: So, George, can I describe it in general terms?
MR. MURPHY: In general terms.
THE WITNESS: It's relatively simple, I guess.
MR. MURPHY: Sure.
THE WITNESS: So the foil comes to us on large rolls cut the same width as the width of our board, which is approximately 4 feet. It will go onto an unwinder. OSB panels are -- come in a unit. So you'll have say 70-some pieces of an OSB unit. It will get unloaded into a continuance line. It will go through a glue applicator, which is essentially a curtain coater. So you'll get a continuous glue line through the curtain coater. After the curtain coater, the foil is laid on to the product.
After it is laid on to the product, it goes through some heavy incising rolls that puts the incising perforations in the board. After that, the foil is cut and the -- every 8 feet, basically, or whatever the length of the panel is and then it goes into the stack. And that's it.
BY MR. ANDERS:
Q. And then it goes on to distributors or

wherever it ends up going when you --
A. **Yes.**
Q. Is TechShield targeted at any specific market of the construction trades?
A. **Markets? It's the roofing market.**
Q. Does it have a residential or a commercial focus?
A. **Primarily, it's residential.**
Q. And does Louisiana-Pacific market it to any like specific distributor, or would it just be if I've got a building products company and I want to sell TechShield, I call the company up and I get it?
A. **Yeah.**
Q. Are there any restrictions on its marketing, I should say?
A. **Restrictions on its marketing?**
Q. Yes.
A. **We don't intentionally sell it into northern markets.**
Q. And why is that?
A. **It has a limited use in those markets. We don't market it in those areas.**
Q. Okay. So it would be fair to say that you concentrate your marketing in southern markets?

A. **Yes, southern U.S.**
Q. Can anyone purchase TechShield?
A. **Yes.**
Q. Does the company require any training or certifications of TechShield applicators or roofers?
A. **No.**
Q. Does Louisiana-Pacific make training available to roofers in the application of TechShield?
A. **Not training per se, but we have installation instructions specific to TechShield.**
Q. Who drafted those or who drafts those installation instructions?
A. **I mean, I wasn't there when the original ones were drafted, but I have been part of some updates to those documents. So that's under my responsibility. I shouldn't say I don't draft them though. It would be drafted by our marketing department, I have to review them for accuracy.**
Q. But they're drafted by your marketing department?
A. **Yes.**
Q. Does Louisiana-Pacific also make available instructions for the application of ordinary OSB

sheathing in the roofing context?
A. **Yes.**
Q. At this time, do the instructions for TechShield vary in any significant fashion from those for applying ordinary OSB sheathing?
A. **Yes.**
Q. Tell me what the differences are.
A. **So the primary difference, the product is installed as any ordinary roof sheathing would be installed.**
Q. Yes, sir.
A. **So the actual installation and some of the key components of that are the same. By that, I mean your spacing, your fastening schedule, all of that has already been determined and they are the identical products in that sense.**

In regards to the radiant barrier, we need to make it known that there needs to be at least an inch and a half air space from the surface of the foil. And that's really the primary difference between our standard sheathing installation instructions and radiant barrier sheathing.

Q. Any there other differences of which you're aware of?
A. **No.**

Q. Are there any differences in the method of -- methods of attachment, in the standard method of attachments of TechShield in the roofing context from those of OSB sheathing?
A. **No, there's not.**
Q. How is the product typically attached?
A. **Nails.**
Q. You mentioned -- I believe you mentioned that there's a requirement that the panels themselves be separated by a certain space; is that true?
A. **Yes. It's recommended that there be an 8-inch spacing between the panels.**
Q. And why is that recommended?
A. **OSB is a wood-based product and, therefore, the dimensions of it change with changes in moisture, just regular atmospheric moisture conditions.**
Q. Yes, sir.
A. **Similar to if you have your house sometimes in the winter, your doors, they shut just fine but come summer, they get squeaky and they start touching because your house is changing dimensionally. So you need to provide a space for that panel's expansion and contraction.**

Q. And how is that space typically provided?
A. **Typically, it's provided with -- about an 18 nail is an eighth-of-an-inch space. So if you're an installer and you're gapping the panels on the 4-foot ends, you're going to put an 18 nail to gap that.**

If you're using it in a roofing application, if you're gapping on the -- between the panels, they're on the 8-foot length, it's recommended that roofing clips be used, and those clips will provide that recommended spacing.

Q. Have you ever applied TechShield on a roof?
A. **Not TechShield, no.**
Q. But have you applied standard OSB sheathing on a roof?
A. **Yes.**
Q. And I believe you already mentioned the guideline that there be a one-and-a-half inch air space between the sheathing and the roof; is that correct?

MR. MURPHY: Objection to the form.

BY MR. ANDERS:

Q. Sorry. Tell me about that again, the one-and-a-half inch air space.
A. **The one-and-a-half inch air space would be**

between the foil and any other materials with the exception of, obviously, it's got to lay on the rafters.

Q. Yes, sir.

A. **But that doesn't apply to the rafters, it has to be attached to the rafters. So between the rafters, it has to have an inch-and-a-half air space.**

Q. And apart from the one-and-a-half inch air space between the foil layer of TechShield product and -- strike that.

Louisiana-Pacific does not recommend a one-and-a-half inch air space between its OSB sheathing in a roofing context and other materials; is that true?

A. **That's true.**

Q. So apart from the recommendation that there be a one-and-a-half inch air space between TechShield and similar materials, are there any other differences in Louisiana-Pacific's guidelines or recommendations for installation of TechShield as opposed to OSB sheathing in a roofing context?

A. **No.**

Q. You mentioned that in a roofing context, panels of TechShield are typically separated by

roofing clips?

A. **Yes.**

Q. And in the North American market, what are the roofing clips typically made out of?

A. **They can be made out of either -- primarily what you see is spring steel. Simpson Strong-Tie is probably the largest manufacturer of those. And there are some aluminum clips on the market as well.**

Q. Does Louisiana-Pacific recommend any specific material of roofing clips for use with TechShield?

A. **No.**

Q. Does Louisiana-Pacific recommend against any specific material --

A. **No.**

Q. -- of roofing clips for use of TechShield?

A. **No.**

MR. ANDERS: Off the record for a second.

(Off-the-record discussion.)

(WHEREUPON, the above-mentioned document was marked as Exhibit Number 1.)

BY MR. ANDERS:

Q. Mr. St. Germain, I'll show you what's been

marked as Exhibit 1 to your deposition. Could you take a minute and read through that document?

A. **(Complies.)**

Q. Are you familiar with it?

A. **I'm familiar with it.**

Q. What is it?

A. **It appears to be our TechShield radiant barrier installation instructions. It's not complete, the first page.**

Q. How is it incomplete?

A. **I believe we would have some other parts of it prior to this. So I don't know if this is an excerpt from it or where exactly this came from.**

Q. Well, I'll represent to you that it came from Louisiana-Pacific's attorneys. If you could look at the second page of it, it has a copyright date of 2005, does it not, towards the bottom?

A. **Yes.**

Q. Would these have been the TechShield radiant barrier installation instructions in effect in 2005?

A. **Yes. If it's copyrighted in 2005, it should have been.**

Q. All right. Have the installation instructions for TechShield been revised since

2005?

A. **I believe so, I don't know. Normally, that would have occurred -- we update these from time to time.**

Q. Do you know when it was last revised?

A. **I don't off the -- I don't recall at this time.**

Q. Did you have any hand in drafting of or oversight of the drafting of these installation instructions?

A. **Yes.**

Q. Okay.

A. **I don't know these specific ones if it's '05. It would have been -- that would have been before I started this position, my current position.**

Q. Who had your position before you had it?

A. **Bob Palarady -- I guess Robert would be his first name.**

Q. Robert Palarady. How do I spell his last name?

A. **P-A-L-A-R-A-D-Y.**

Q. Is Mr. Palarady still with the company?

A. **Yes.**

Q. And what is his position now?

A. **I don't know his active -- his title. He's --**
Q. In general.
A. **Yeah, he's kind of our technical manager for the corporation.**
Q. And understanding that he's not here to speak for himself about what his position entails, can you tell me generally what the technical manager does or what do you mean by the technical manager?
A. **Well, previously, we had a lab in Franklin and he was the manager of that lab. And we've since had to close that lab, but we've retained Bob and a few of his people and he still manages over them.**
Q. Would that be in Franklin, Tennessee?
A. **Yes.**
Q. And where does Mr. Palarady work?
A. **Nashville.**
Q. Do you have any role in supervising Mr. Palarady?
A. **No.**
Q. The reason I asked is you mentioned that you had some role in oversight of the company's research and development of new products within the

OSB line.
A. **Yes.**
Q. If I were to do an organizational chart of the company -- which I'm not going to, and I'm not going to ask you to do it. Mr. Palarady, though, would not be under you in any way?
A. **No.**
Q. Would he be above you in any way?
A. **Not on an org chart, no.**
Q. Does he supervise your work or have any oversight of your work in any way?
A. **No. Well, let me change -- let me rephrase that. He would serve as a support to my work, as a resource.**
Q. And how does he support your work?
A. **He would function any expertise that we need with either himself or his people.**
Q. And what is his field of expertise?
A. **What is Bob's field of expertise?**
Q. Yes, sir, understanding he's not here to speak for himself, also.
A. **Yeah. My understanding is he would be very similar to mine. Similar background, similar educations.**
Q. So as we sit here today is it your belief

that Mr. Palarady would have been responsible for overseeing the drafting of these instructions in 2005?
MR. MURPHY: Objection to form.
BY MR. ANDERS:
Q. You can answer.
A. **That would be my assumption. I don't know that he oversaw them or not.**
Q. If the company were to -- if someone came to you tomorrow and said, We need to draft new instructions for the installation of TechShield, and that were done, would you be responsible for overseeing their drafting?
A. **I'd be responsible for the finished outcome.**
Q. Had you participated in the drafting of new installation instructions for TechShield or revised installation instructions for TechShield?
A. **I don't recall specifically in the last six years. I believe we've updated these once, minor changes.**
Q. I'll represent to you that we received a set from your attorneys, which I'm not going to go into today, but it was drafted in 2009.
A. **Yeah, that's about right.**
Q. Does that sound right?

A. **Yeah.**
Q. Correct?
And were you involved in any way in the drafting or oversight of those revisions?
A. **Only in the oversight. So, again, on the finished product. I don't write them specifically, but...**
Q. I want to ask you about this document, which I received from your attorneys. You mentioned when I showed it to you that you believe there are other portions of the document or that some of it is missing?
A. **I don't know that for certain that is a 2005 document. I don't recall back in 2005 how the document looked exactly. It just looks different than what we currently have right now, which would be the 2009.**
Q. Okay. Well, this is a black and white photocopy of a colored document, and the colors in the original from which it was copied were orange. Are there any other significant differences?
A. **What are you --**
Q. Is it --
A. **Different than what?**
Q. This is a two-page document.

A. **Okay.**
Q. Are the current installation instructions of significant difference in terms of length?
A. **I don't know how long our current ones are, maybe two or three pages.**
Q. Okay. And how are installation instructions such as the 2005 instructions disseminated by Louisiana-Pacific to customers, if at all?
A. **They're available on our website and that's typically we'll refer customers to our website.**
Q. And how are customers referred to your website?
A. **Through any number of product literature. So this would be in a company sell sheet which would then list our website for additional information.**
Q. But these instructions are not, for instance, distributed with lots or pallets of --
A. **No.**
Q. -- TechShield?
A. **No.**
Q. We're here today to talk about a fire that occurred at Christopher and Rosario Taylor's house in North Carolina on August 29th of 2011. I'm going to change gears a bit. Did you participate

in an inspection of the Taylor home?
A. **Yes, I did.**
Q. When was that?
A. **I don't remember the specific date.**
Q. Around October of 2011, does that sound correct?
A. **That sounds about right.**
Q. Do you have any personal recollection of your visit to that home?
A. **Yes.**
Q. In what state was the home when you saw it?
A. **North Carolina. What state?**
Q. I apologize.
A. **The condition?**
Q. I phrased that very poorly.
Did the home appear to have been damaged --
A. **Yes.**
Q. -- when you visited it?
Can you describe the damage that you observed?
A. **From the outside of the home, the only visible damage we could see was a tarp over the roof. So we were under the impression that when you first arrived, there was damage. The house had obviously been burned in the center portion of the**

house. There was a hole in the roof in the back of the house. I recall it being about a 5-foot diameter hole approximately.
Q. Did you have any discussions with Mr. or Mrs. Taylor when you visited the home?
A. **No, I didn't.**
Q. Did you attend that inspection with anyone else from Louisiana-Pacific?
A. **Yes I did.**
Q. And who would that be?
A. **David Dellwo, Laura Proctor.**
Q. And were there any other parties that you recall at the inspection?
A. **Yes, we had Dennis Scardino.**
Q. Who is Dennis Scardino?
A. **I don't know which company, I forget the name of his company. He's a cause and origin fire expert.**
Q. Was he there on behalf of Louisiana-Pacific?
A. **Yes.**
Q. Was anyone else at the inspection?
A. **Yes.**
Q. Who else if you recall?
A. **I don't recall. I want to say his name is Mike. I don't recall his last name.**

Q. And was he there on behalf of Louisiana-Pacific, or someone else?
A. **Louisiana-Pacific.**
Q. And was the inspection also attended by a party there on behalf of either the Taylors or State Farm?
A. **Yes.**
Q. Do you recall any of those people?
A. **I don't recall all their names. I just recall roughly who was there or how many people were there.**
Q. In what capacity were you attending that inspection?
A. **To -- we went to take a look at our product. We were informed prior to that it was TechShield so we wanted to validate that it was indeed TechShield and also that it was installed correctly.**
Q. And were you able to form an opinion as to whether the product on the Taylor home was TechShield?
A. **Yes.**
Q. And what did you determine?
A. **It was TechShield.**
Q. And how did you make that determination?
A. **The product is stamped on the foil face with**

LP TechShield.
Q. Were you able to form any opinions as to whether the product in the Taylor home had been installed correctly or incorrectly?
A. **It was installed correctly.**
Q. Did you make any observations as to whether any of other portions of the roof assemblage within the Taylor home had been installed correctly or incorrectly?
A. **The construction practices in general appeared to be fine and met building codes from what I could see.**
Q. You mentioned that the roof had approximately a 5-foot diameter hole that was covered by tarp; is that correct?
A. **Yes.**
Q. And would that hole have been a hole -- strike that.
Did you make any observations about the area surrounding that hole?
A. **It appeared that the hole was damaged by fire. It was obvious the house was caught on fire at some point.**
Q. Were you able to make any observations concerning the cause of that fire in your

inspection?
A. **I wasn't able to, no.**
Q. Did you have any discussions with Mr. -- have you had any discussions at any time with Mr. Scardino regarding the cause of that fire?
A. **Yes.**
Q. Tell me about those discussions.
A. **Just in general, the belief was when we arrived that the house was struck by lightning. So we knew that going in. So they tried to find a point of entry of the lightning, which I believe they had determined was at the chimney stack or chimney pipe.**
Q. And when you say "they," who makes up "they"?
A. **They would be Dennis and their cause and origin person.**
Q. State Farm's and the Taylors'?
A. **State Farm, yeah.**
Q. So it's your understanding that Mr. Scardino and State Farm's cause and origin expert had determined that the chimney was the point of entry for the lightning in the home?
A. **That was my understanding.**
Q. And how did you come by that understanding?

A. **There was apparently some marks on the drip cap of the chimney that were evidence of apparently a lightning strike according to them.**
Q. Did you observe those marks?
A. **Yes.**
Q. To your mind, did those marks have any significance?
A. **In my mind?**
Q. Yes, sir.
A. **Well, it didn't look like they should be there. So I'm not the expert in lightning or what impact it has when it hits a structure or a pipe.**
Q. Within the OSB business portion of Louisiana-Pacific, would you agree that the OSB business side of Louisiana-Pacific includes TechShield?
A. **Yes, it does.**
Q. Does the company have any electrical engineers on staff?
A. **Yes.**
Q. Within the OSB business?
A. **They -- let me think how that's structured. I'm not certain if their reporting structure goes up through the OSB business or up through the engineering function.**

Q. So does Louisiana-Pacific have a separate engineering department?
A. **Yes.**
Q. And who is in charge of the company's engineering department?
A. **David Crowe.**
Q. I'm sorry. David?
A. **David Crowe, C-R-O-W-E.**
Q. Is that a separate department from the OSB business?
A. **Yes.**
Q. If we were to talk about the company's hypothetical org chart, would the OSB -- would this fall within the OSB business at all?
A. **Engineering?**
Q. Yes.
A. **It would be considered a supporting function to the business so they would also support our other businesses. So they're not specific to ours.**
Q. You mentioned that in your role as quality and technical manager, OSB business that you have responsibility for overseeing the development of new products?
A. **Yes.**
Q. Is the engineering -- well, first, what is

the name of the engineering department within the OSB -- with Louisiana-Pacific?
A. **Engineering.**
Q. Just engineering department?
A. **Yes.**
Q. Okay. Does the engineering department have any role in the development of new products within the OSB business?
A. **They could support the development of new products if needed.**
Q. What sort of supports do they provide?
A. **It depends on the nature of the product.**
Q. Can you give me -- without violating any trade secrets, can you give me examples of past supports that they've provided to your company during your tenure as quality and technical manager, OSB business?
A. **So their function is primarily going to be in developing the manufacturing footprint, say, to be used to manufacture these new products.**
Q. And tell me what you mean by manufacturing footprint.
A. **The actual manufacturing. So you may have some-- there's certain things you can do in the lab, but once you move it into production, you**

need somebody to develop that equipment, install it and manage that project.
Q. In other words, setting up the assembly line, what sorts of machines are going to be needed to make the product, that kind of thing?
A. **Exactly.**
Q. But do they have any role in the design of the product themselves?
A. **No.**
Q. And to your knowledge, the only electrical engineers within the company are within the engineering department?
A. **I didn't say that specifically. I said that it's my knowledge that they're all underneath engineering. I believe they report up through engineering and not through the OSB business.**
Q. I take it there are no electrical engineers that you know of working within the OSB business?
A. **They work for the OSB business. I don't know if they report up through the business in terms of an org chart as you asked.**
Q. Okay. How about metallurgists, does the company have any metallurgists?
A. **Not that I'm aware of.**
Q. Does the company have any -- for lack of a

better term, lightning experts on staff?
A. **No.**
Q. And have the company's -- you mentioned that there may be electrical engineers within the company and that they work through the engineering department of the company, correct?
A. **Yes.**
Q. Have -- has the engineering department ever had any role in the drafting of installation instructions for the TechShield product?
A. **Not that I recall.**
Q. Has the TechShield product undergone any changes in design since you became quality and technical manager, OSB business?
A. **Nothing of any significance. There may have been a change somewhere along the line in terms of the weight of the paper being used. But other than that, I don't recall anything specific.**
Q. The weight of the paper being used?
A. **Yes.**
Q. Would it have been increased or decreased, or do you know?
A. **I don't recall specifically at this time.**
Q. But the fundamental design of the product hadn't changed?

A. **Yeah, it's still the same craft paper. It's the same purpose.**
Q. There are several other products on the market that are also referred to as radiant barrier products but they're not radiant barrier sheathing; is that correct?
A. **Yes.**
Q. Does Louisiana-Pacific manufacture or market any radiant barrier products other than TechShield?
A. **No. Well, we have underneath another name, it's called SilverTech. But it's sold into the shed business.**
Q. I'm sorry. It's sold into the?
A. **Shed business.**
Q. The shed business?
A. **Yeah.**
Q. What is SilverTech?
A. **It's a similar product, similar in nature. It's -- but it's sold into the shed business so it's a little different design. And primarily the biggest difference is that there's no markings on the board. So it doesn't say LP TechShield on it, it doesn't say anything. So that's really the main differentiator. But it's marketed under a different name, SilverTech.**

Q. How do you spell the name SilverTech?
A. **Silver as in silver, S-I-L-V-E-R, Tech, T-E-C-H.**
Q. Okay. So I just wanted to be sure it wasn't Tech with a K or --
A. **Actually, it's SilverTech or SilverLine. Silver something. I don't know. It's not in my business.**
Q. Okay. So it's not a part of the OSB business?
A. **No, it's not part of the OSB business.**
Q. But the silver product, SilverTech or SilverLine or whatever it's called is fundamentally the same as TechShield?
A. **Yes.**
Q. It consists of OSB and an adhesive and aluminum foil craft paper laminant?
A. **It's a little different in the sense that it's got the same foil and a paper. The paper is going to be a little different and it's actually applied pre-press. So it's not a secondary process like the TechShield foil is.**
Q. And you said it's sold in the shed business?
A. **Primarily, yes.**
Q. And would that explain the lack of the LP

marking on it?
A. **Yeah. It came to us specifically because the shed users were using TechShield and they said, Can you get rid of this, and this was the best option at the time to get rid of the markings on the board.**
Q. Meaning shed manufacturers?
A. **Shed manufacturers, yes.**
Q. They didn't want Louisiana-Pacific's marking on their product?
A. **Yeah, it was more visual. Most TechShield is hidden up in the attic and nobody ever sees it. But sheds, it's you walk into a shed and that's what you see. So they wanted it very clean, no markings.**
Q. And you're in the OSB business side of the company. Which side of the company oversees the SilverTech or SilverLine product?
A. **Our siding business.**
Q. Does your siding business department have any role in the manufacture or sell or distribution of TechShield?
A. **No.**
Q. Are TechShield and SilverTech or SilverLine manufactured at the same plant --

A. **No.**
Q. -- within Louisiana-Pacific?
A. **They're manufactured at Louisiana-Pacific, but not at the same --**
Q. But at different plants?
A. **Different plants.**
MR. MURPHY: Are you at kind of a breaking point?
(Short break.)
BY MR. ANDERS:
Q. Mr. St. Germain, before we got off on to the tangent that it's SilverTech or SilverLine, I believe we were talking about your visit to the Taylor home. The allegation, or one of the allegations in this case, is that TechShield is a defective product because it has a tendency to, when energized by lightning, catch fire at a greater rate than other roofing products, such as OSB. Have you heard that allegation before?
A. **I've heard that allegation back when this thing first came at us.**
Q. By "this thing" meaning the State Farm, Taylor complaint?
A. **We've had others as well.**
Q. You've had other cases or other claims in

which --
A. **Other claims.**
Q. And were those claims coming from insurance companies, from homeowners, from whom?
A. **I believe insurance companies.**
Q. Other than -- well, let me ask you if you know, other than the State Farm, Christopher Taylor versus Louisiana-Pacific case, is Louisiana-Pacific involved in any other lawsuits concerning the alleged defective nature of TechShield when energized by lightning?
A. **Not that I'm aware.**
Q. But other claims have been made?
A. **Other claims have been made.**
Q. Through insurance companies?
A. **Yes.**
Q. How many that you're aware of?
A. **It's probably half a dozen.**
Q. Do you know what insurance companies have made such claims?
A. **No, I don't. Not specifically.**
Q. State Farm obviously is one of them?
A. **State Farm is one, yeah. I don't recall the others.**
Q. And have you participated in inspections of

homes other than the Taylor home in which it had been alleged that a fire had been caused by the previously identified alleged defect in TechShield?
A. **Yes.**
Q. Where had you participated in those inspections?
A. **I know I was in one in San Antonio, Texas. I believe I've been to one or two in the Dallas-Fort Worth area. And I believe that was it.**
Q. And have you attended all such inspections on behalf of Louisiana-Pacific of homes in which it was alleged that fire had occurred because of a defect in TechShield?
A. **No, I haven't.**
Q. So others have also attended such inspections?
A. **Yes.**
Q. Mr. Dellwo was one of them, correct?
A. **Yes.**
Q. Has he attended other inspections than the inspection of the Taylor home?
A. **Yes.**
Q. Has he attended all such inspections on behalf of Louisiana-Pacific to your knowledge?
MR. MURPHY: Objection, form.

BY MR. ANDERS:
Q. You can answer.
A. **I don't know if he has or hasn't.**
Q. Is there anyone else who has attended such inspections on behalf of Louisiana-Pacific?
A. **On behalf of Louisiana-Pacific?**
Q. Yeah, within the company.
A. **Within the company?**
Q. Yeah.
A. **No.**
Q. No one other than you or Mr. Dellwo?
A. **Correct. And I mentioned Laura, but I'm not --**
Q. Laura Proctor?
A. **Yes.**
Q. Has Laura attended other inspections?
MR. MURPHY: Object to the form.
THE WITNESS: I don't -- I don't believe so.
BY MR. ANDERS:
Q. Was the Taylor fire the first you heard of that had been caused by alleged defective properties of TechShield when energized by lightning?
A. **No. There was -- the first time that I became aware of this was probably in the fall of 2010.**
Q. And can you tell me briefly about the claim in the fall of 2010?
A. **I didn't witness them firsthand. The allegations were made and that was the first time that Laura came to me with this report from McDowell Owens making these allegations.**
Q. Have you reviewed any reported by McDowell Owens?
A. **Yes.**
Q. What documents from McDowell Owens have you reviewed?
A. **They have one document that's published on -- I don't know if it's their website or which website it's on, but it's looking at this, you know, running an electrical current through radiant barrier sheathing.**
Q. So you have reviewed one report from McDowell Owens about running electrical current through radiant barrier sheathing. Have you read any other reports from anyone purporting to be an expert speaking of defects or flaws in radiant barrier sheathing when it gets exposed to lightning?

A. **No.**
MR. MURPHY: Object to form.
BY MR. ANDERS:
Q. Do you know the name Mark Goodson?
A. **Yes.**
Q. Who is Mark Goodson?
A. **He -- he was at one or two of the inspections that I was at in Texas.**
Q. And was he working for Louisiana-Pacific at those inspections?
A. **Yes.**
Q. Did you make the decision to retain or hire Mr. Scardino or Mr. Goodson?
A. **No.**
Q. In this or any other case?
A. **No.**
Q. Who if you know did make that decision?
MR. MURPHY: Objection to the extent -- I think you're kind of getting into attorney-client confidentiality.
MR. ANDERS: If you want to tell him not to answer.
MR. MURPHY: Yeah, don't answer. I don't know that you would know, but don't answer anything regarding information you would have

obtained through consultation with legal on any claims that have been made against LP.
BY MR. ANDERS:
Q. If you can answer that question without discussing information you've gotten through LP's attorneys.
A. **I can't answer that.**
Q. How many times have you met Mr. Scardino?
A. **Four times probably. Approximately.**
Q. And would that -- would each of those occasions have been at outside inspections?
A. **Yes.**
Q. And how many times have you met Mr. Goodson?
A. **I think -- I believe twice.**
Q. And, again, would both of those occasions have been at outside inspections of damaged properties?
A. **Yes.**
Q. Are you aware of any claims during your time at Louisiana-Pacific in which anyone has alleged that standard OSB displays any venerability to fire when energized by lightning?
A. **No.**
Q. But you are aware of about a half dozen in which that claim has been made with respect to

Yes, sir.
A. **I believe it would be the paper.**
Q. Do you have any criticisms of Mr. Simmons or McDowell Owens' methodology in those experiments?
MR. MURPHY: Objection to form.
THE WITNESS: It doesn't seem to be indicative of a lightning strike.
BY MR. ANDERS:
Q. Any other criticisms?
MR. MURPHY: Form, objection.
THE WITNESS: No.
BY MR. ANDERS:
Q. So in other words, for the McDowell Owens experiments to be valid, we would have to actually run a lightning strike through TechShield, correct?
MR. MURPHY: Objection, form.
THE WITNESS: I don't know what you'd have to do. That's not my area of expertise.
BY MR. ANDERS:
Q. Has Louisiana-Pacific ever commissioned or performed or retained experts to examine the performance of TechShield when energized by a lightning strike?
A. **When?**
Q. At any time to your knowledge.

TechShield, correct?
A. **Correct.**
Q. And the first of those would have been about fall of 2010?
A. **Correct.**
Q. You said that you have read the McDowell Owens report or a McDowell Owens report --
A. **Yes.**
Q. -- on radiant barrier sheathing?
A. **Yes.**
Q. What's your understanding of the McDowell Owens theory -- or the person who writes those reports is Ronald Simmons.
A. **Uh-huh.**
Q. What is your understanding of Mr. Simmons' theory as to why TechShield is allegedly defective?
A. **What's my understanding --**
Q. Yes, sir.
A. **-- based on his reports?**
Based on his reports, he's running very low current voltage through the foil in a very specific way and that he's able to make the underlying paper catch on fire.
Q. And would that be the paper or the aluminum?
A. **That catches on fire?**

MR. MURPHY: And to the extent that question is asking -- or you have knowledge related to anything subsequent to these claims and litigation, I instruct you not to answer it. Prior to that time, you can answer.
THE WITNESS: So prior to 2010, when these first allegations came --
BY MR. ANDERS:
Q. Prior to the fall of 2010.
A. **Prior to fall of 2010, I'm not aware of any testing that LP's performed in regard to lightning on TechShield.**
Q. How about prior to fall of 2010, are you aware of any studies or experiments by or on behalf of Louisiana-Pacific with respect to the performance of TechShield when energized by electricity, whether in the form of lightning or otherwise?
A. **No. Prior to 2010, I'm not.**
Q. For instance, no one at the company ever said, We need a study of how TechShield performs if there's, for instance, an electrical short of wires in the vicinity of TechShield prior to the fall of 2010?
A. **No, that's never been brought to our**

attention.
Q. Are you aware of -- other than McDowell Owens, are you aware of any studies conducted prior to fall of 2010 by anyone?
A. **No, I'm not aware of any studies.**
Q. Within or outside the radiant barrier industry?
A. **Correct.**
Q. Is Louisiana-Pacific a member of any trade groups with respect to the radiant barrier industry?
A. **Yes.**
Q. And what trade groups is that company a member of?
A. **Specific to radiant barrier?**
Q. Yes, sir.
A. **We're a member of RIMA.**
Q. And that would be the Reflective Insulation Manufacturers Association International?
A. **Yes.**
(WHEREUPON, the above-mentioned document was marked as Exhibit Number 2.)
BY MR. ANDERS:
Q. Mr. St. Germain, could you take as much time as you need to review that document before I ask

you some questions concerning it.
A. **(Reviews documents.)**
Q. Before I come to that, let me ask you about your background with RIMA, unless you need more time to review it?
A. **Yeah, I need more time.**
Q. Okay.
A. **Okay.**
Q. All right. First, if I could just ask you a few questions about RIMA. What is RIMA? I mean, we know it's name is the Reflective Insulation Manufacturers Association International, but what is the organization?
A. **What is RIMA?**
Q. Yes. Is it a trade group? Is it a lobbying --
A. **Yes, both. It's a trade group that promotes the use of radiant insulation.**
Q. And is Louisiana-Pacific a member of RIMA?
A. **Yes.**
Q. And do they promote radiant barrier sheathing only, or other forms of radiant barrier products?
A. **They promote other forms as well.**
Q. Have you attended any functions or training

or anything like that on behalf of Louisiana-Pacific with RIMA?
A. **No, I haven't.**
Q. Have you drafted any documents for RIMA?
A. **No, I haven't.**
Q. Have you ever been to RIMA's headquarters, I believe, in Oklahoma?
A. **No, I haven't.**
Q. I'm sorry, Kansas?
A. **No, I haven't.**
Q. Do you receive documents, technical bulletins, anything of that nature from RIMA?
A. **No, I don't think I've actually ever received anything from them.**
Q. And in your capacity as quality and technical manager, OSB business for Louisiana-Pacific, do you send documents or information to RIMA?
A. **No.**
Q. Do you participate -- do you personally participate in any way with RIMA?
A. **No.**
Q. Do you know when RIMA was formed?
A. **No, I don't.**
Q. Who within Louisiana-Pacific handles

relations with RIMA, is that a marketing function or --
A. **No. Our current point of contact for RIMA would be Tony Pugel.**
Q. And who is Tony Pugel?
A. **He reports to Bob Gwarty (phonetic). So he's a -- his title is research scientist.**
Q. And if we were again to go to that hypothetical org chart, Mr. Pugel doesn't work under you in any way?
A. **No.**
Q. And how do you spell Pugel?
A. **P-U-G-E-L.**
Q. Does anyone within the OSB business side of Louisiana-Pacific have the contact with RIMA to your knowledge, or is that all handled through the technical department?
A. **Do we have contact with them?**
Q. Yes, sir.
A. **We'll have occasional contact.**
Q. Tell me about that.
A. **It's primarily more from a marketing perspective.**
Q. Do you consider RIMA primarily a marketing trade group?

A. **Well, they provide both marketing and technical assistance.**
Q. What technical assistance do they provide?
A. **Similar to these type of documents.**
Q. And are these focused on manufacturers or distributors or customers? Who were these types of documents focused on?
A. **I don't --**
MR. MURPHY: Objection.
THE WITNESS: I don't know enough of the document to know where they're really -- or what all exists or where it's marketed to.
BY MR. ANDERS:
Q. Before today have you ever read RIMA technical bulletin Number 108, to your knowledge?
A. **I don't believe I have, no.**
Q. If you could have a look at numbered paragraph 1 within RIMA technical bulletin Number 108. And first I'll ask, that seems to be a warning regarding the use of radiant barrier materials in the vicinity of electrical wires; is that correct?
MR. MURPHY: Objection, form.
BY MR. ANDERS:
Q. Safe use of it; is that correct?

A. **I don't believe that's correct, no.**
Q. Okay. What do you believe? That's fair.
A. **I believe it's during the installation of the radiant barrier material, not in its use.**
Q. And this is more or less a safety tip, correct?
A. **It appears to be, yes.**
Q. All right. Does Louisiana-Pacific in its installation instructions provide any similar warnings regarding electrical wiring in the vicinity of TechShield?
A. **I don't believe so.**
Q. Is it not thought to be necessary?
MR. MURPHY: Objection, form.
BY MR. ANDERS:
Q. A warning regarding the use of TechShield in the vicinity of electrical wiring or insulation?
MR. MURPHY: Object to form.
BY MR. ANDERS:
Q. Let me strike that and rephrase the question.
Do you believe that customers purchasing TechShield should be warned that radiant barrier reflective insulation and IRCC products all contain a certain amount of aluminum which can potentially

have electrical conductivity?
A. **Do I believe that?**
Q. Yes, sir.
A. **Yes.**
Q. Does Louisiana-Pacific provide that warning to anyone?
A. **Do we provide the warning --**
Q. Yes, to customers.
A. **-- around electrical wiring?**
Q. Yes.
A. **I do not believe so.**
Q. But you believe that the company should --
MR. MURPHY: Object to form.
BY MR. ANDERS:
Q. Or that they should be warned?
MR. MURPHY: Object to form.
THE WITNESS: I can't answer that.
BY MR. ANDERS:
Q. Well, earlier when I asked you do you believe that purchasers of TechShield should be warned that radiant barrier reflective insulation in IRCC products all contain a certain amount of aluminum which can potentially have electrical conductivity, and you said yes --
MR. MURPHY: Objection to form.

THE WITNESS: Can you repeat your question?
BY MR. ANDERS:
Q. Sure. I'll phrase it again. Do you believe that customers of TechShield should be warned that radiant barrier reflective insulation and IRCC products all contain a certain amount of aluminum which can potentially have electrical conductivity?
MR. MURPHY: Objection to form.
THE WITNESS: I can't answer that.
BY MR. ANDERS:
Q. Yes or no, do you believe that?
MR. MURPHY: Objection to form.
THE WITNESS: I can't answer that.
BY MR. ANDERS:
Q. What part of my question did you not understand?
A. **This document that you're referring to is dissimilar to our product. It covers more than just our product.**
Q. Okay. Then let's leave out reflective insulation and IRCC products. Would you characterize TechShield as a radiant barrier?
A. **Yes.**
Q. Do you believe that purchasers of TechShield

should be warned that radiant barrier products all contain a certain amount of aluminum which can potentially have electrical conductivity?

MR. MURPHY: Objection to form.

THE WITNESS: There are differences in the way these products are installed and when they are installed compared to when TechShield is installed and how it's installed.

BY MR. ANDERS:

Q. What are those differences?

A. **The difference is when TechShield is installed, it's installed during new construction and then it's one of the first things after you get the framing up that goes on. You are not going to -- you don't have any electrical wiring, which this paragraph is specific to electrical wiring. There's no electrical wiring in your attics at that time. Nobody -- you can't install it at that time. So our products would already be installed prior to these components going into your attic.**

Q. Are there any other differences?

A. **Well, in regard to this paragraph, there's not. I mean, it's a bit of an unfair question, so...**

Q. What's unfair about the question?

A. **You're asking if we should have some kind of a warning around electrical wiring in our products. There's no electrical wiring present when our products are installed.**

Q. So is TechShield always installed before electrical wiring in the residential roofing context?

A. **Yes.**

Q. Can TechShield be used for retrofitting?

A. **No, it's not practical.**

Q. Why is that impractical?

A. **It's a radiant barrier sheathing product.**

Q. Yes, sir.

A. **So it's attached to a piece of OSB. So you wouldn't install that after the fact. You wouldn't even be able to get it up into your attic. I mean, it's not...**

Q. Well, for instance, you've been to the Taylor home, correct?

A. **Yes.**

Q. The Taylor home suffered a fire, did it not?

A. **Yes.**

Q. And presumably at some point, someone would get around to repairing the damage that had been caused by that fire, correct?

A. **Yes.**

Q. Would you recommend TechShield as a -- well, would you recommend reinstalling TechShield over the portions of that roof that had been burned away?

A. **You could install it, yeah.**

Q. There wouldn't be any reason not to do that, correct?

A. **No.**

Q. Other than electrical wiring are you aware of any additional safety concerns regarding the exposure of TechShield to electrical current?

A. **No.**

Q. For instance, does Louisiana-Pacific provide any warnings to building trades such as electricians who might be working in the vicinity of TechShield?

A. **No.**

Q. Do you feel that any such warnings are necessary?

MR. MURPHY: Objection to form.

THE WITNESS: I can't say that.

BY MR. ANDERS:

Q. Do you feel that any such warnings are desirable?

MR. MURPHY: Objection to form.

THE WITNESS: I can't say that.

BY MR. ANDERS:

Q. Do you have an opinion personally as to whether TechShield when energized by lightning is more or less likely than oriented strand board sheathing to catch fire?

MR. MURPHY: Objection to form.

THE WITNESS: I don't have any way to answer that question. I have no knowledge.

BY MR. ANDERS:

Q. You have no opinion?

A. **I have no opinion.**

Q. Who is David Dellwo?

A. **He is our field claims inspector.**

Q. Tell me what you mean by claims inspector.

A. **So if we have a customer concern around any of our OSB products that require some sort of field inspection, David would attend those inspections.**

Q. And is that nationwide or is he limited to a geographical area?

A. **He's not limited per se, but we do have three such individuals. So whoever is closest logistically will attend.**

Q. And who are the other two?

A. **The other two, Dane Allaiss.**
Q. And how do I spell that name?
A. **I think Dane is D-A-N-E and then Allaiss would be A-L-L-A-I-S-S, Dane Allaiss.**
Q. And who is the other one?
A. **Vance Thomas.**
Q. Mr. Dellwo is based out of Texas, is he not?
A. **Yes.**
Q. And where is Mr. Allaiss based?
A. **He's up near Pittsburg.**
Q. And where is Mr. Thomas based?
A. **Macon, Georgia.**
Q. We talked earlier about Mr. Dellwo and I believe you stated that you believed that he had attended about three or four inspections of properties in which it was alleged that structures had been damaged by TechShield after its energization by lightning, correct?
A. **Correct.**
Q. Has Mr. Allaiss attended any such inspections?
A. **No, not that I'm aware of.**
Q. How about Mr. Thomas?
A. **No, not that I'm aware of.**
Q. So within Louisiana-Pacific, all such

inspections would be attended by you or Mr. Dellwo?
A. **That is correct.**
Q. And no one else, leaving your counsel aside?
A. **No.**
Q. Did Mr. Allaiss or Mr. Thomas work with different products or --
A. **Other than TechShield?**
Q. Yes, sir.
A. **Yes.**
Q. Does Mr. Dellwo have any special expertise regarding TechShield as opposed to Mr. Allaiss or Mr. Thomas?
A. **No.**
Q. Just luck of the draw that he's attended these inspections and Mr. Allaiss and Mr. Thomas haven't?
MR. MURPHY: Objection to the extent any of that relates to claims as to a decision why one or the other would go if you know that you've learned as a result of your involvement with legal, that's off limits. If it's something else prior to that time, you can talk about it.
THE WITNESS: It's luck of the draw, I guess. I mean, when the first one came up and David inspected that one so he would witness

certain things and so to make -- to follow it up, it would be consistency, I guess, in understanding.
BY MR. ANDERS:
Q. Who assigns -- or, I'm sorry, strike that.
When a claim comes in to Louisiana-Pacific regarding damage to a structure after TechShield is energized by lightning, does the company always inspect such a structure if it's called to the company's attention?
MR. MURPHY: That would be a claim to legal. That's --
MR. ANDERS: If that's who's making the decision, that's what I want to know.
MR. MURPHY: Yeah.
BY MR. ANDERS:
Q. Legal makes those decisions?
A. **Legal would make that decision, yes.**
Q. Okay. You don't have any role in making a decision on who goes out --
A. **No.**
Q. -- or whether an inspection is made?
A. **No.**
Q. That's what I wanted to know.
Turning to Exhibit 2, if you would have a look at numbered paragraph seven.

A. **All right.**
Q. Okay. How would you characterize -- well, first, paragraph seven is providing a warning regarding working around TechShield during severe weather with thunder, correct?
MR. MURPHY: Objection to form.
THE WITNESS: That's what seven is referring to, yes.
BY MR. ANDERS:
Q. Does Louisiana-Pacific provide any similar warnings in its product literature with TechShield?
A. **No, we do not.**
Q. Do you provide any such warnings with -- well, do you have any other products other than TechShield that are specifically designed as roof sheathing?
A. **Yes.**
Q. Tell me what those products are.
A. **Just standard OSB sheathing.**
Q. Okay. So the standard OSB sheathing. It's not a specialty product is it, meaning you could also use it for wall sheathing, that sort of thing?
A. **Correct.**
Q. Well, let me back up. Do you consider TechShield a specialty product for the roofing

trade?
A. **Yes.**
Q. That's the primary focus of your marketing, correct --
A. **Correct.**
Q. -- of TechShield?
A. **Of TechShield, but it's our primary focus in regular sheathing as well.**
Q. So with standard OSB sheathing, does Louisiana-Pacific primarily market it to roofers, or does it also market it to other trades such as framers, contractors?
A. **In most context, framers and roofers are going to be the same people.**
Q. Okay.
A. **I mean, roofers are typically the people installing shingles.**
Q. Do you agree with the warnings provided under paragraph seven, weather conditions?
A. **I believe anybody that's working outdoors, particularly on a roof, should be observant of what the weather conditions are. That's fairly common sense.**
Q. Sure. Do you believe that such warnings should be given to installers of TechShield?

MR. MURPHY: Objection to form.
THE WITNESS: I have no reason to believe there's any difference between that and our other products.
BY MR. ANDERS:
Q. Well, do you provide such warnings to purchasers of your other products?
A. **No, we do not.**
Q. If it's lightning, you assume they'll have the common sense to come in out of the rain, correct?
A. **Yeah.**
Q. Do you consider TechShield -- well, TechShield has a higher metal content than standard OSB, does it not?
A. **Yes.**
Q. Do you consider that in a thunderstorm, it would be more dangerous to be around TechShield than to be around standard OSB, if one is outdoors?
MR. MURPHY: Objection to form.
THE WITNESS: I don't have the expertise to answer that question.
BY MR. ANDERS:
Q. I have a couple more documents to show you.
MR. ANDERS: We can go off the record for a second.

(Short break.)
BY MR. ANDERS:
Q. Mr. St. Germain, you're aware of what material safety data sheets are, correct?
A. **Yes, I am.**
Q. Do you have any role or does your department have any role in the drafting of material safety data sheets for TechShield?
A. **No.**
Q. Who drafts those?
A. **We typically would consult with an on-site --**
Q. An outside lab or --
A. **Yes.**
Q. Do you know which outside lab or expert Louisiana-Pacific consults with for the preparation of the material safety data sheet for TechShield?
A. **I don't recall.**
Q. Does your department have any -- or I'll strike that.
Which department of Louisiana-Pacific deals with warranty claims on TechShield?
A. **That would be my department, customer service.**

(WHEREUPON, the above-mentioned document was marked as Exhibit Number 3.)
BY MR. ANDERS:
Q. I'll show you what's marked as Exhibit 3. Are you familiar with Exhibit 3?
A. **Yes, I am.**
Q. And what is Exhibit 3?
A. **It's LP's TechShield warranty.**
Q. And it appears to be dated 2007; is that correct?
A. **That is correct.**
Q. Has the warranty undergone any revisions to your knowledge since 2007?
A. **Not to my knowledge.**
Q. Do you have any role in the drafting of this warranty?
A. **I would assist.**
Q. And what assistance -- well, have you provided any assistance in the drafting of a warranty for TechShield at any time in your career at Louisiana-Pacific?
A. **I honestly don't recall.**
Q. Have you provided assistance in the drafting of warranties for other products?
A. **Yes.**

Q. But you can't say whether it was for TechShield?
A. **I can't say whether it was for TechShield.**
Q. I'll ask you this: In the 2007, 2008 timeframe would this have been the warranty that was applicable to TechShield?
A. **Yes.**
Q. I'll represent to you that there's a second page of this warranty but it's in Spanish.
A. **Correct.**
Q. Do you agree that apart from the second page in Spanish, this is the entire warranty that would have applied to the TechShield radiant barrier product in the 2007, 2008 timeframe?
A. **Yes.**
Q. No omissions from it?
A. **It doesn't appear.**
Q. In the 2007, 2008 timeframe, how would Louisiana-Pacific have conveyed this warranty to its customers?
A. **It's conveyed the -- in our marketing literature, we'll reference what our warranty is in terms of as in this one, 20-year transferable limited warranty. For specific details on that warranty, you would have to go to our website and**

retrieve the most correct copy.
Q. Can you buy TechShield at Lowe's or Home Depot?
A. **In certain regions, yes.**
Q. Can you buy it at Lowe's or Home Depot in North Carolina, if you know?
A. **I don't know.**
Q. If I were to -- well, let's assume you could. If I were to go -- let's assume I was in North Carolina and I decided I was going to buy some TechShield and I was going to buy it at Lowe's, would this warranty accompany TechShield?
A. **No, it would not it.**
Q. How would I find out about the existence of this warranty if I were buying it from Lowe's?
A. **You would need to visit our website.**
Q. Would there be any mark on the product or any document distributed with the product that would make me aware of the existence of this warranty?
A. **Yes.**
Q. And what would that be?
A. **It would list our website on the face of the board, as well as the customer service number to call.**

Q. So it would say www.Louisiana-Pacific.com?
A. **LP Corp.com.**
Q. LP Corp.com.
A. **Uh-huh.**
Q. Is that all it would say?
A. **I don't recall the exact -- all the literature that's printed on the foil itself or on the product.**
Q. It's printed on the foil?
A. **There's printing on the foil and there's also on the back on our information stamp or grade stamp.**
Q. Would there be --
A. **Actually, I take that back. Everything should be on the face of the product.**
Q. What should be on the face of the product?
A. **There is a information and grade stamp in the form of a sticker that's placed on the product.**
Q. And what does the sticker say?
A. **It rates that the base panel is a PS2 rated product.**
Q. What does PS2 refer to?
A. **PS2 is a performance standard. It's a U.S. voluntary product standard.**
Q. And which association publishes that

standard?
A. **The APA actually is the publisher of the document.**
Q. American Plywood Association?
A. **Technically, it's not American Plywood Association. It's APA, Engineered Wood Association.**
Q. So if I buy a sheet of TechShield from Lowe's, there will be a stamp on it that says PS2 rated, correct?
A. **Correct.**
Q. What other information will be on that stamp?
A. **On the stamp?**
Q. Yeah.
A. **It will give the span rating for that, so how the product can be used in a building code. There's also some basic information on the TechShield foil itself printed on the foil.**
Q. What is that information?
A. **I don't have the specific detail.**
Q. In general terms.
A. **In general, it's going to say -- there's a few bullets on there. One, it needs to face down during installation. And it says it needs to face**

in on gable ends. I think it says to space panels 8 inches on ends and edges.

Q. So we've got span ratings for various applications in building, we have that it needs to face down during installation and we have got that it needs to face inward on gable ends and we have got that the panels need to be spaced.

A. **Right.**

Q. Is there anything else stamped on the product?

A. **Not that I recall. There's probably more on there, I just don't recall the details. If we had a copy of the stamp, I could point out what's all on there.**

Q. Is there anything that tells me that if I wish to know what warranty I am purchasing with the product, I must go to LP Corp.com?

A. **I'd have to double check the way it's worded. But yes, it says for further details, visit LP Corp.com.**

Q. It says for further details?

A. **I don't -- I should say I don't know for sure --**

Q. You don't know?

A. **-- exactly how it's worded.**

Q. Is there anything stamped on the product that refers to a disclaimer of warranties?

A. **A disclaimer of warranties?**

Q. Yes.

A. **Not that I recall.**

Q. For instance, does the product -- is there anything stamped on the product or accompanying the product if I buy it at Lowe's that states that Louisiana-Pacific excludes all implied warranties including any implied warranty of merchantability or fitness for a particular purpose?

A. **Not that I recall.**

Q. Okay. Is there anything stamped on the product that states that Louisiana-Pacific excludes any warranties otherwise arising from the course of dealing or usage of trade or advertising?

A. **That we would stamp that on our product?**

Q. Yes.

A. **No.**

Q. And, again, if I were to purchase a panel of LP TechShield at Lowe's, other than the statement, For further information visit LP Corp.com, or words to that effect, is there anything that would alert me to the existence of limitations in this warranty?

A. **I don't recall our specific language on our stamps. It may say 20-year limited warranty on our -- what we print on the foil. Like I said, I don't recall. That's easy information for us to find or for me to find exactly what it says.**

Q. If I ask you to convey that information to Mr. Murphy and Mr. Murphy in turn conveyed it to me through a standard request, I take it you can get that information to him quickly?

A. **Oh, yes.**

Q. Okay. And to the extent practical, you'll have that information as it applies to the 2007, 2008 timeframe as well --

A. **Yes.**

Q. -- in case it's changed?

A. **Correct.**

Q. But in any event, there's nothing on the product that you're aware of that advises customers of all these limitations, is there?

A. **No, we couldn't possibly put all that information on our products.**

Q. Well, could you -- let me ask you, typically, is TechShield sold by the sheet or is it sold by the pallet load? How is it sold?

A. **We would typically -- we sell to**

distributors. So we typically will sell by the truck.

Q. And how do distributors typically sell it, if you know?

MR. MURPHY: Objection to form.

THE WITNESS: They would typically sell it in whatever quantity is required.

BY MR. ANDERS:

Q. Whatever the customer wanted?

A. **Yeah.**

Q. Would it be possible to stamp this on the board itself, on the back of the board, the information in Exhibit 3?

A. **The entire text of the warranty?**

Q. Yeah.

A. **To stamp it where?**

Q. On the back of the board.

A. **On the wood?**

Q. Yeah.

A. **No.**

Q. Does Louisiana-Pacific -- what step -- or strike that.

What steps does Louisiana-Pacific take to make the existence of this warranty and its limitations known to any purchasers of a TechShield

product?
MR. MURPHY: Objection to form.
THE WITNESS: I don't know all the different ways. I mean, it's --
BY MR. ANDERS:
Q. Tell me all the steps of which you're aware.
A. **All steps that I'm aware?**
Q. Yes, sir.
A. **It would have been through our marketing group, which I'm not necessary a part of.**
Q. And who in your marketing group would be most aware of steps that Louisiana-Pacific takes to make the existence and limitations of the 20-year transferable limited warranty known to end purchasers of the TechShield product?
MR. MURPHY: Objection to form.
THE WITNESS: I don't know who would make that decision.
BY MR. ANDERS:
Q. So if I wanted to know about that, I'd need to speak to someone in the marketing department?
A. **Yes.**
Q. Is the marketing department separate from the OSB business?
A. **There's different -- yes. Well, yes and no.**

There's different layers. So there is a corporate marketing department and then there's business marketing as well.
Q. Tell me -- well, what's the difference between corporate marketing and business marketing? Define those terms for me if you could.
A. **There are some aspects of what they do that are common to all businesses and all products and that would be handled by corporate marketing. There are some aspects of marketing that may be specific to a product type or a specific region which that could be handled within business.**
Q. Does the OSB business department of Louisiana-Pacific of which you are a quality technical manager have a regional department that covers North Carolina?
A. **From a quality and technical basis?**
Q. No, I'm sorry, you are the quality and technical manager of OSB business?
A. **Right.**
Q. My understanding is that OSB business is a separate department within Louisiana-Pacific, is it not?
A. **It's considered a separate business.**
Q. Okay. Does the OSB business arm of

Louisiana-Pacific have its own marketing department?
A. **Yes.**
Q. Describe that department for me, what activities does it undertake? Does it cover only certain product types, does it cover certain regions? Tell me about that.
A. **It's not my area of expertise.**
Q. You have no expertise in marketing?
A. **I have no expertise in marketing.**
Q. Who is the director of marketing for the OSB business of Louisiana-Pacific?
A. **Judy Musgrove.**
Q. And where is Judy Musgrove's office?
A. **Nashville.**
Q. Is Judy Musgrove's marketing department the arm of Louisiana-Pacific that would be responsible for dissemination of this warranty to end purchasers, the warranty in Exhibit 3?
A. **I don't know.**
Q. The warranty makes reference to the sales office in Conroe, Texas.
A. **Yes.**
Q. Does Louisiana-Pacific have a sales office in Conroe, Texas?

A. **They did in 2007. It's since been moved to Nashville.**
Q. So it's been brought back here?
A. **Well, not back here. It's never been here. It's moved here.**
Q. Okay. Is the sales office a branch of the OSB business, or is that a separate department as well?
A. **In 2007?**
Q. Sure.
A. **In 2007, yes, it would have been part of the OSB business.**
Q. How about now?
A. **No.**
Q. Does the sales office exist any longer?
A. **Yes.**
Q. So it was taken out of the OSB business, the sales office?
A. **I don't recall the exact structure of how things were changed recently.**
Q. Was it a recent change?
A. **Yes.**
Q. When did the sales office move from Conroe, Texas, to Nashville, approximately?
A. **Well, that's -- that doesn't say when it was**

organizationally or structurally changed.
Q. When organizationally did it change?
A. **Physically when it moved, it was probably two years ago. And then I would say within the last year, there was some organizational changes in terms of how that reports up through the corporation.**
Q. Would it be fair to say that you are not aware of how the existence and the terms of this warranty are published to end purchasers of the TechShield radiant barrier product other than making it available at the LP Corp website?
MR. MURPHY: Object to form.
THE WITNESS: I don't know. I'm not aware. It's not my area of expertise. It's not within my function.
BY MR. ANDERS:
Q. Have you ever had training in electrical engineering?
A. **No, I have not.**
Q. Have you ever had training as an electrician?
A. **No, I have not.**
Q. Have you ever had training as a metallurgist?

A. **No, I have not.**
Q. When you visited the Taylor home, did you make any observations regarding bonding or grounding of the home?
A. **Bonding or grounding?**
Q. Yes, specifically as from the chimney.
A. **That's not my area. No, I did not.**
Q. So you didn't make such observations?
A. **No, I did not make those observations.**
Q. When you visited the Taylor home, did you observe any areas in which it appeared that the aluminum laminant of TechShield within the home had burned from the areas that you were able to see?
A. **Where the laminant had burned?**
Q. Yes, sir.
A. **No, not burned.**
Q. Did you see any areas where it had melted or become deformed?
A. **I did not see any areas where it had melted. We did see small areas where it was missing, evaporated, the foil.**
Q. So assuming that the term for that is ablation, did you see areas where the aluminum foil had ablated?
A. **Define "ablated."**

Q. Ablation is as I would define it, the rapid expansion -- well, I'll leave that for someone else.
A. **Okay. So I can't answer that question.**
Q. All right. You did see areas where the foil itself, though, had bubbled or was missing?
A. **I actually did not see areas where it was bubbled.**
Q. But you saw areas where it was missing?
A. **Yes. But, specifically, the aluminum portion of the foil.**
Q. Was the paper portion still there?
A. **Yes.**
Q. Do you have an opinion as to why the aluminum was missing from those areas?
MR. MURPHY: Objection to form.
THE WITNESS: I don't have an opinion.
BY MR. ANDERS:
Q. Do you agree that TechShield is more vulnerable to fire when energized by lightning than is standard oriented strand board sheathing?
MR. MURPHY: Objection to form.
THE WITNESS: I don't have an opinion.
BY MR. ANDERS:
Q. Who is David Drew?

A. **David Drew previously worked at LP as a technical sales manager.**
Q. What is a technical sales manager?
A. **A technical sales manager's primary purpose is to promote product placement in the market.**
Q. Well, tell me what you mean by promote product placement in the market.
A. **Promote product placement. I mean, there's -- we are making structural building components.**
Q. Yes, sir.
A. **They need to meet certain requirements and they also need to be the product of choice. And so the technical sales helps facility that.**
Q. I guess what I'm asking is what does the term "technical" mean in that job title? Is it different than a sales manager?
A. **Yes. They would have a greater understanding of -- mostly on building codes, building sites, those types of things.**
Q. Okay. That's where I was going with that. So he's not just a salesman?
A. **No. I mean, the purpose of why he's there is to help promote sales.**
Q. Yes. And so Mr. Drew has some expertise in

codes or in promotion of this use for specific trades beyond what an ordinary salesman might have?

A. **Yeah, sure.**

(WHEREUPON, the above-mentioned document was marked as Exhibit Number 4.)

BY MR. ANDERS:

Q. Could you have a look at Exhibit 4 and tell me whether you've ever seen that document before?

A. **(Reviews documents.) Yeah, there's technically two documents here or more.**

Q. Sorry. I apologize. Let's separate that into -- let's separate that into four and five. If you'll hand it back to me.

MR. ANDERS: We'll make what's already Exhibit 4, Exhibit 4. And we'll make this Exhibit 5. I apologize for that.

(WHEREUPON, the above-mentioned document was marked as Exhibit Number 5.)

BY MR. ANDERS:

Q. Have you ever seen Exhibit 4?

A. **Yes, I have.**

Q. Who are R&D Services, Inc.?

A. **They're a testing facility in Cookeville, Tennessee.**

Q. And do they have an ongoing relationship

with Louisiana-Pacific?

A. **Not ongoing, no.**

Q. Were you involved in the decision to commission or have this report prepared in Exhibit 4?

A. **No, I wasn't.**

Q. That was Mr. Drew's decision?

A. **Yes.**

Q. What was the purpose, if you know, of requesting that R&D Services prepare the reports referenced in Exhibits 4 and 5?

A. **It's a validation that our admittance below us are at threshold.**

Q. And had the company ever ordered such -- is this ongoing testing, is this something that Louisiana-Pacific does on an ongoing basis or was 2010, the report in Exhibit 5, was that to your knowledge the first time that Louisiana-Pacific had ever ordered a admittance testing on the TechShield product?

A. **There would most likely have been previous reports to that. I believe it's every two years that we would test.**

Q. And why do you order such testing?

A. **There are certain jurisdictions that require**

radiant barrier materials meet performance requirements, and we failed to substantiate that.

Q. What performance requirements are those?

A. **(Inaudible) vents.**

Q. Which jurisdictions are those to your knowledge?

A. **Well, there's specific ASTM standards that require it to be at a certain level to be classified as a radiant barrier, that's one.**

Q. Uh-huh.

A. **Two is the RIMA certification, which they just recently put into place requires a similar type of verification. And the state of California to sell product that meets radiant barrier sheathing requires that that document exists. So you need to submit it to the state to get a certificate from the state of California to be a -- I don't know if they call it a licensed distributor of insulation product.**

Q. So this is aimed at determining the product's insulative capacities?

A. **When you use the term "insulative capacities," that could have different meanings depending on who you're talking to and which products. So I can't really answer that.**

Q. Well, is the goal of this -- and I'll speak as a lay person, TechShield seems to be sold as a green building product.

A. **Yes.**

Q. And is that what this testing is geared toward demonstrating, this product has certain capacities to radiate away heat?

A. **It -- the way you're speaking about "radiating away heat" is inaccurate.**

Q. Okay. Tell me what would be accurate.

A. **The function behind TechShield is to not radiate heat. And that is determined by emittance, which this test is performing. It's a material property.**

Q. Are there any other reasons that this testing was performed other than -- to your knowledge, other than to require -- to comply with items such as RIMA certification or code compliance in jurisdictions such as California?

A. **No, only in areas it's required.**

Q. Do you know who designed the Kool Ply product that is now known as TechShield?

A. **I do not.**

Q. Do you know whether any of the individuals involved in that design are still with

Louisiana-Pacific?
A. **I do not.**
Q. Are there any geographical areas in which Louisiana-Pacific recommends against the use of TechShield due to prevalence of lightning?
A. **Repeat your question.**
Q. Sure. Are there any areas in which Louisiana-Pacific recommends against the use of TechShield as a residential or roofing product due to prevalence of lightning?
A. **No.**

MR. ANDERS: I don't have any other questions. Mr. Murphy may or may not.

MR. MURPHY: We will reserve our questions.

FURTHER DEPONENT SAITH NOT

E R R A T A P A G E

I, BRIAN MICHAEL ST. GERMAIN, having read the foregoing deposition, Pages 1 through 110, do hereby certify said testimony is a true and accurate transcript, with the following changes (if any):

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STATE OF TENNESSEE
COUNTY OF SMITH

I, STEPHANIE LAKE JONES, Licensed Court Reporter, with offices in Nashville, Tennessee, hereby certify that I reported the foregoing deposition of **BRIAN MICHAEL ST. GERMAIN** by machine shorthand to the best of my skills and abilities, and thereafter the same was reduced to typewritten form by me. I am not related to any of the parties named herein, nor their counsel, and have no interest, financial or otherwise, in the outcome of the proceedings.

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**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION**

STATE FARM FIRE and CASUALTY COMPANY as a subrogee of CHRISTOPHER TAYLOR,

Plaintiffs,

vs. **Case No. 5:12-CV-289-BO**

LOUISIANA-PACIFIC CORPORATION,

Defendant.

Deposition of:

DAVID WILLIAM DELLWO

**Taken on behalf of the Plaintiffs
December 11, 2012**

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I N D E X

E X H I B I T S

S T I P U L A T I O N S

The deposition of **DAVID WILLIAM DELLWO** was taken by counsel for the Plaintiffs, at the offices of Bradley, Arant, Boult, Cummings, 1600 Division Street, Suite 700, Nashville, Tennessee, on December 11, 2012 for all purposes under the Civil Rules of Federal Procedure.

The formalities as to notice, caption, certificate, et cetera are waived. All objections, except as to the form of the questions, are reserved to the hearing.

It is agreed that STEPHANIE LAKE JONES, Notary Public and Licensed Court Reporter for the State of Tennessee, may swear the witness, and that the reading and signing of the completed deposition by the witness are not waived.

* * *

DAVID WILLIAM DELLWO,

was called as a witness, and after having been duly sworn, testified as follows:

EXAMINATION

QUESTIONS BY MR. ANDERS:

Q. Mr. Dellwo, am I pronouncing that correctly?
A. **Yes, that's correct.**
Q. Mr. Dellwo, my name is Patrick Anders, and I'll be taking your deposition today in a case entitled State Farm as subrogee of Christopher Taylor versus Louisiana-Pacific.
MR. ANDERS: And let's go off the record for a second.
(Short break.)
BY MR. ANDERS:
Q. I apologize for that. The sun got in my eyes in this conference room.
A. **No problem. I understand.**
Q. Can you state your full name for the record, please.
A. **David William Dellwo.**
Q. And where do you reside, Mr. Dellwo?
A. **Tomball, Texas.**

Q. And how are you employed, sir?
A. **I work for Louisiana-Pacific Corporation.**
Q. And how long have you worked for Louisiana-Pacific?
A. **Since 1997.**
Q. What is your present job title with the corporation?
A. **Technical field representative.**
Q. Have you ever had your deposition taken before today?
A. **Yes.**
Q. On how many occasions?
A. **One.**
Q. Well, since you've only done it one time, I'll go over a few ground rules for today's deposition.
First, if I ask you a question that you don't understand or that you don't hear properly or a question that in any way you don't comprehend, could you please let me know that?
A. **Yes.**
Q. Otherwise, I will assume that you understood my questions and that your answers are based on that understanding. Would that be a fair assumption for me to make?

A. **Yes.**
Q. If I ask you a question that you feel calls for a "yes" or a "no" answer could you verbalize your response saying "yes" or "no" rather than nodding or shaking your head?
A. **Yes.**
Q. If you need to take a break at any point could you let me know that?
A. **Yes.**
Q. I'll be happy to accommodate you. I would ask that if you want to take a break at any point and I have a question pending, if you could answer the question fully before we begin our break.
A. **Yes.**
Q. Thank you. What was the nature of the case in which you were previously deposed?
A. **It involved a customer who stepped through a structural panel in a home.**
Q. What sort of relief was the customer seeking?
A. **I'm not sure.**
Q. Money damages?
A. **I'm not sure.**
Q. Was he claiming a personal injury?
A. **Yes.**

Q. And where was that case filed, if you know?
A. **It was in New York state.**
Q. Did you know what -- Louisiana-Pacific manufactures a variety of different panels, does it not?
A. **Yes.**
Q. Do you know what product was at issue in that case?
A. **It was an OSB sheathing product.**
Q. Apart from the one deposition, have you testified on any other occasions in court or before an administrative panel?
A. **No.**
Q. Have you ever been convicted of a felony?
A. **No.**
Q. You said that you are a technical field representative for Louisiana-Pacific?
A. **Yes.**
Q. Has that been your job title for your entire tenure with the company?
A. **Yes.**
Q. Can you tell me what the duties of the technical field representative are?
A. **I perform field inspections for customer inquiries regarding our OSB panel products.**

Q. And by OSB panel products, can you name the sorts of products that you work with?
A. **Rated sheathing, topnotch subfloor panels, TechShield radiant barrier panels.**
Q. Do any others come to mind?
A. **Those would be the primary ones, at least at this point. There have been other products in the past.**
Q. Prior to joining Louisiana-Pacific as a technical field representative, how were you employed?
A. **I worked for a company called United Steel Products.**
Q. And what did you do for United Steel Products?
A. **Sales.**
Q. And how long were you employed with United Steel Products?
A. **Approximately five year.**
Q. Were you employed prior to United Steel Products?
A. **Yes.**
Q. And can you run through your employment background for me briefly --
A. **Sure.**

Q. -- prior to United Steel?
A. **Prior to United Steel, it was a company called NA Trading for approximately two years. Prior to that it was a company called Data Serve for approximately two years. And prior to that it was a company called American Paging, and that again was approximately two years.**
Q. And what did you do for NA trading?
A. **NA Trading, I worked in sales.**
Q. How about Data Serve?
A. **Sales.**
Q. And how about American Paging?
A. **Sales.**
Q. Sales. What sorts of products did you sell at NA trading?
A. **Replacement repair parts for copiers.**
Q. And how about at Data Serve?
A. **Telephone systems.**
Q. I can probably guess about American Paging, but --
A. **Pagers, yes.**
Q. Can you tell me about your educational background?
A. **Yes. I've got a BS in marketing from Morehead State.**

Q. And when did you attend Morehead State?
A. **1986 through 1989.**
Q. Since completing your BS in marketing, have you taken on any graduate studies?
A. **No.**
Q. Have you had any technical or professional training, whether through your employers or else -- or otherwise?
A. **Yes.**
Q. Tell me about that.
A. **Primarily building-related technical courses involving either building design or architecture, things of that nature.**
Q. Have you obtained any certification in connection with that training?
A. **Yes.**
Q. What certifications do you hold?
A. **We received a certification from the American Plywood Association as being a field inspector for structural panel products.**
Q. Any other certifications?
A. **No.**
Q. Do you hold any professional licenses?
A. **No.**
Q. In your time with Louisiana-Pacific as a

technical field inspector have you always been a technical field inspector of OSB-related products?
A. **Yes.**
Q. You mentioned that your job involves handling customer inquiries in the field regarding product.
A. **Yes.**
Q. Is that fair?
A. **Yes.**
Q. Are you limited to a specific geographic region?
A. **I have a geographic region. On occasion, I will travel outside of that geographic region to perform field inspections.**
Q. What is your geographic region?
A. **Right now, it's everything west of Mississippi in the U.S.**
Q. You mentioned that you occasionally go outside that geographic region?
A. **Yes.**
Q. For what reason would you be called upon to do that?
A. **We have two other inspectors that share or have their own specific geographic regions. An example of when I would go outside that would be if**

they're busy with their schedule on another inspection and the timeliness of the customer request is filled by sending me in place of them into their territory.

Q. Do you work at a Louisiana-Pacific office?

A. **No.**

Q. Where do you work?

A. **I work out of a home office.**

Q. In a typical week, if there is a typical week, how many days are you in a home office versus traveling?

A. **A typical week, I'll be on the road maybe two days a week, two nights a week.**

Q. We're here today primarily to discuss TechShield.

A. **Okay.**

Q. What is TechShield?

A. **TechShield is an OSB structural panel that has received an application of a radiant barrier foil assembly.**

Q. Have you ever been involved in the manufacture of TechShield?

A. **No.**

Q. Have you had any training in the manufacture of TechShield?

A. **I've been in manufacturing facilities, but I don't know about, you know, specific training, per se.**

Q. Apart from the radiant barrier foil assembly, are there any significant differences between TechShield and what I'll call standard oriented strand board, or OSB?

A. **No.**

Q. Forgive me, you said you began work at Louisiana-Pacific in 1997?

A. **That is correct.**

Q. When you began work at Louisiana-Pacific, was the company manufacturing or involved with TechShield?

A. **No.**

Q. When did TechShield become a Louisiana-Pacific product?

A. **Early 2000s.**

Q. Was the product developed by Louisiana-Pacific?

A. **No.**

Q. Do you know who did develop it?

A. **It was a company called KoolPly.**

Q. Is that "KoolPly" with a K?

A. **Yes.**

Q. And if you know, how did Louisiana-Pacific acquire the TechShield product?

A. **We purchased KoolPly.**

Q. Now, that was in the early 2000s?

A. **Yes.**

Q. When Louisiana-Pacific purchased KoolPly, did customer service for that product immediately become a part of your responsibility?

A. **Define "immediately."**

Q. Well, essentially at or around the same time.

A. **Yeah. There was a, you know, short transition time. I'm going to guess, you know, maybe anywhere from zero to six months. And then after that point in time, customer inquiries regarding that product would have reverted internally to LP.**

Q. Do you know if the TechShield product had a different name prior to the acquisition of KoolPly by Louisiana-Pacific?

A. **Are you asking was it named anything other --**

Q. Yes, sir.

A. **-- than KoolPly?**

Q. So the product was named KoolPly?

A. **It was named KoolPly and it was also referred to KoolPly for a short period of time after Louisiana-Pacific purchased the company. And then there was a transition to TechShield.**

Q. Okay. Thank you. What are the components of TechShield?

A. **An OSB panel, a foil overlay assembly consisting of a layer of aluminum and a craft paper backing. And then a glue line that would bind the foil assembly to the OSB panel.**

Q. Are all of those components manufactured internally by Louisiana-Pacific or, if you know, are any of them manufactured for Louisiana-Pacific by outside companies?

A. **The OSB panel is manufactured by LP; the foil overlay assembly is manufactured by somebody other; and the adhesives would be manufactured by somebody other than LP.**

Q. Do you know who makes the foil overlay?

A. **I do not.**

Q. Do you know who makes the adhesives?

A. **I don't.**

Q. In your work as a technical field representative for Louisiana-Pacific, do you have any contacts with or dealings with these outside

providers of --
A. **No.**
Q. -- TechShield components?
A. **No.**
Q. Hypothetically, if I had a problem with a Louisiana -- or a customer of Louisiana-Pacific in the western part of the United States, and I had a problem with the product, how would I come to your attention?
A. **Ask that again.**
Q. Who assigns investigations to you? Who, if anyone?
A. **With an LP, it would come from one of two locations, either a call in to our warranty department within Nashville here. So it would be like a toll free number or an internet contact. And if they decided that a field inspection was required, they would communicate that information to me. And then beyond that in some rare instances, I might get an inquiry from some other source within LP. Say, for example, a sales rep or someone from the corporate office or something of that nature informing me of a need for a field inspection.**
Q. You mentioned that Louisiana-Pacific has two

other people in your position with different geographical focuses.
A. **Okay. Yes.**
Q. Is that correct?
A. **Yes.**
Q. Do those two people -- first, what are their names?
A. **One is Dane Allias, and the other is Vance Thomas.**
Q. And if you know, how long has Dane Allias been a technical field representative for Louisiana-Pacific?
A. **He's had two tenures. So I'm going to say, originally, approximately ten years and then two years ago, he came back on board with LP.**
Q. And how about Vance Thomas?
A. **I believe Vance was hired three or four years prior to me.**
Q. Does Mr. Allias as part of his duties, does he handle customer inquiries or complaints regarding the TechShield product?
A. **He could.**
Q. And how about Mr. Thomas?
A. **Yes.**
Q. And for the TechShield product, can you give

me a general idea of the sorts of complaints or customer inquiries you address out on the field?
A. **Yes.**
Q. What are the most common?
A. **Most common? Probably the two most common would be an allegation either from a builder or a homeowner that the product has been improperly installed in the field, or the other big group of complaints would involve some sort of aesthetic concern about the material typically related to moisture exposure during construction process.**
Q. Have you addressed inquiries or conducted -- well, strike that.
Have you conducted inspections for the TechShield product in which someone was alleging that the product had damaged a home after being energized by a lightning strike?
A. **Yes.**
Q. On how many occasions have you been involved in such inspections?
A. **Approximately, I would imagine half a dozen.**
Q. Do you recall when the first such inspection took place?
A. **Yeah. Approximately the fall of 2010.**
Q. And where was that?

A. **In the Dallas, Texas, area.**
Q. Do you know whether prior to the fall of 2010, Louisiana-Pacific company had received complaints regarding allegations that the product damaged the structure after being energized by a lightning strike?
A. **Not that I'm aware of.**
Q. You said that you've handled one in Dallas, Texas, sometime in the fall of 2010, correct?
A. **Yes.**
Q. And you mentioned that you've done about half a dozen of these inspections where someone was making allegations regarding TechShield and the alleged vulnerability to lightning, correct?
A. **Yes.**
Q. Can you tell me the other inspections that you've done where that scenario has been alleged?
A. **One in North Carolina, which I believe is this complaint. And then the rest of them would be in Texas.**
Q. And do you know whether Mr. Vance -- I'm sorry, Mr. Thomas or Mr. Allias have conducted any such inspections of structures where it was alleged that the structure had been damaged by TechShield after being energized by a lightning strike?

A. **Not that I'm aware of.**
Q. Let's talk about the Dallas, Texas, incident in the fall of 2010. How did that come to your attention?
A. **It was brought to my attention by LP's legal department.**
Q. And did you inspect that structure in Dallas?
A. **There was an inspection. I was not the inspector, I was simply an LP observer at that job.**
Q. Do you recall the name of the owner of the structure?
A. **I do not.**
Q. Do you recall the approximate address of the structure?
A. **No.**
Q. Do you recall what sort of structure it was?
A. **Residential home.**
Q. You mentioned that you attended an inspection on behalf of Louisiana-Pacific. Did anyone else attend on behalf of Louisiana-Pacific, whether inside the company or outside? I'm speaking of the Dallas inspection.
A. **Yes.**
Q. Who was that?

A. **George Murphy.**
Q. Okay. And I take it Mr. Murphy was there as counsel?
A. **Yes.**
Q. Was anyone else there on behalf of Louisiana-Pacific?
A. **Yes.**
Q. Who?
A. **Dennis Scardino.**
Q. And in what capacity did Mr. Scardino attend?
A. **I'm not -- I'm not certain about that.**
Q. What does Mr. Scardino do for a living?
A. **I believe he performs field inspections of fire-related claims.**
Q. Do you know his profession?
A. **I do not.**
Q. When did you first meet Mr. Scardino?
A. **At that inspection.**
Q. Prior to that inspection had you ever interacted with Mr. Scardino in any way: Talking to him on the phone, communicating, e-mailing?
A. **No.**
Q. What was the damage to that structure in Dallas, Texas?

A. **There was a fire in the home.**
Q. And where did the fire take place?
A. **In the attic.**
Q. Did that home have a roof sheathing with TechShield?
A. **Yes.**
Q. And did you come to any conclusions regarding the cause of the fire in the attic in the home in Dallas?
A. **No.**
MR. MURPHY: Objection to form.
BY MR. ANDERS:
Q. The origin of the fire was in the attic though?
A. **I'm not sure.**
Q. That's where the fire damage was located though, correct?
A. **Well, there was damage throughout the home but there was damage in the attic, yes.**
Q. If you know, was there TechShield located in the home, in any part of the home, other than the attic and the roof?
A. **Not that I saw.**
Q. Were there any insurance companies involved in that claim?

A. **I'm not sure.**
Q. Do you know who else attended -- or did anyone else attend that inspection other than representatives of Louisiana-Pacific such as yourself, Mr. Murphy, and Mr. Scardino?
A. **Yes.**
Q. Who if you know?
A. **I'm not sure. I don't recall his name.**
Q. Do you know who the person worked for -- was it one person or multiple people?
A. **There were multiple people.**
Actually, thinking back about that, one of the individuals was a fellow named Ron Simmons.
Q. And who is Mr. Simmons?
A. **I believe an inspector of fire-related complaints.**
Q. Do you recall anyone else who attended that Dallas inspection?
A. **Not by name.**
Q. So if I understand your testimony correctly, to the best of your recollection, apart from the Taylor home in North Carolina, all of the inspections that you have conducted for Louisiana-Pacific of structures where it was alleged that the structured had been damaged by

fire after TechShield had been energized by lightning were in Texas?
A. **Yes.**
Q. Have you had cause to investigate or inspect structures which had been damaged by fire and a complaint was made concerning TechShield where lightning was not involved?
A. **No.**
Q. Have you had cause to investigate or inspect damage to structures in which the damage was caused by fire and there was a complaint concerning the company's standard OSB products of a non-TechShield variety?
A. **No.**
Q. So would it be fair to say that all of the structure -- all of the investigations or inspections you have attended involving fire damage to structures involved a TechShield product?
A. **Yes.**
Q. Do you have an understanding of the mechanism by which it is claimed that TechShield being energized by a lightning strike can lead to a structure catching fire?
A. **Ask that again.**
Q. Sure. If I understand you correctly, since

A. **That's the aluminum.**
Q. I can pull out a calculator, but if you know, what is the thickness in millimeters?
A. **I couldn't tell you.**
Q. Let's turn to the Taylor home. You had cause to attend an inspection at a home in Lewisburg, North Carolina, owned by Christopher and Rosario Taylor, correct?
A. **Correct.**
Q. Do you recall when that inspection took place?
A. **2011.**
Q. Around -- sometime in the fall of 2011?
A. **Yeah, I believe it was in the fall.**
Q. And who called upon you to attend that inspection?
A. **LP's legal department.**
Q. Did anyone else attend that inspection on behalf of Louisiana-Pacific?
A. **Yes.**
Q. Who else?
A. **George Murphy, Laura Proctor, Brian St. Germain, Dennis Scardino. And I believe it was David Loose -- Mr. Loose, but I don't recall his first name.**

the fall of 2010, you've been to about six different structures to inspect them or observe inspections after lightning had struck the residence or the structure and energized the TechShield product, correct?
A. **Yes.**
Q. You've never done that for standard OSB; is that correct?
A. **That is correct.**
Q. All right. Do you believe that TechShield is vulnerable to catching fire after being energized by a lightning strike?
MR. MURPHY: Object to form.
THE WITNESS: I'm not a fire expert so I don't know that I would have an informed opinion about that.
BY MR. ANDERS:
Q. That's fine. What's the thickness of the aluminum laminate on TechShield?
A. **.0002 inches approximately.**
Q. .00 --
A. **-- 02 inches.**
Q. Would that be including the craft paper?
A. **No.**
Q. That's solely the aluminum?

Q. Okay. Laura Proctor is in LP's legal department, correct?
A. **That is correct.**
Q. And what position does Brian St. Germain have with the company?
A. **I'm not sure of his official title but it oversees OSB manufacturing and quality.**
Q. And Mr. Scardino is an outside expert retained by the company?
A. **Yes.**
Q. And who is Mr. Loose?
A. **I believe he was an outside expert as well.**
Q. Do you know his field of expertise?
A. **No.**
Q. And what was your role at the Taylor inspection?
A. **Simply to be an LP observer of the inspection.**
Q. Can you describe the inspection that took place for me at the Taylor home?
A. **You know, the steps that were --**
Q. Yes.
A. **-- taken?**
A general observation of the damage that was done to the home and attempt to verify or determine

if the home had, in fact, been struck by lightning. And if it had been, determine a potential path to ground for the strike.

Q. Were there any other steps in the inspection?

MR. MURPHY: Object to form.

THE WITNESS: Not that I recall.

BY MR. ANDERS:

Q. Did you make any observations about the damage to the Taylor home?

A. **I mean, there had been apparently a fire in the home. And beyond that, you know, I don't know of anything in specific that I necessarily observed during the inspection.**

Q. In which part of the home did the fire take place?

A. **In the attic cavity of the structure.**

Q. And would that have been on the upper portion of the attic cavity, the roof portion, or would it have been on the lower portion on the sides?

MR. MURPHY: Objection to form.

THE WITNESS: My recollection is that it was near the peak of the structure.

/ / /

BY MR. ANDERS:

Q. Did that structure incorporate any Louisiana-Pacific products?

A. **Yes.**

Q. What product?

A. **TechShield.**

Q. And where was the TechShield located within the structure?

A. **It was installed as roof sheathing.**

Q. Did you personally verify that it was TechShield within the structure?

A. **Yes.**

Q. And how did you make that verification?

A. **The TechShield logo is stamped on the downward facing side of the product.**

Q. So you have no reason to doubt that the roof of the Taylor home was sheathed in TechShield?

A. **At least in the areas that I was able to observe, yes.**

Q. Can you describe the damage that the fire had done to the roof?

A. **I know there was a fire there, but I don't recall specifically the degree of damage or what components of the home were directly affected by the fire.**

Q. You said that the inspection also involved determining if lightning had struck the home?

A. **Yes.**

Q. Did you play any role in that?

A. **No.**

Q. Who did make that determination, if anyone?

A. **I'm not sure.**

Q. Do you know if it was determined that lightning had struck the home at the inspection?

A. **At the time of the inspection?**

Q. Yes, sir.

A. **I think the consensus was that it sounded as if it had been struck by lightning, but I don't know if it had been verified at the time of the inspection.**

Q. Do you have any reason to doubt that the Taylor home was struck by lightning at the time of the fire?

A. **No.**

Q. And you said that the efforts were made to determine a path to ground --

A. **Yes.**

Q. -- for the lightning?

A. **Yes.**

Q. Can you describe those efforts for me?

A. **You know, since I am not a fire investigator or an electrical investigator, I don't know exactly what the process is in terms of determining that.**

Q. Was it described to you by anyone?

A. **No.**

Q. Who, if anyone, was involved in making a determination as to the path to ground on behalf of Louisiana-Pacific?

A. **Mr. Scardino.**

Q. And have you had any discussions with Mr. Scardino at any time regarding the path to ground of the lightning bolt that struck the Taylor home?

A. **No.**

Q. If you know, did Mr. Taylor or Mrs. Taylor present a warranty claim to Louisiana-Pacific in connection with that fire?

A. **Not that I'm aware of.**

Q. Do you have any involvement on behalf of Louisiana-Pacific when a warranty claim is brought to your attention in determining whether or not the warranty claim will be honored?

A. **Yes.**

Q. Tell me how that process works.

A. **My involvement would come about if there is**

a -- if it's determined that an actual field inspection of a product is required.

Q. Yes, sir.

A. **And I would perform an examination of the job site conditions. And based on my assessment of those conditions, I would make a recommendation back to LP as to whether a warranty claim was legitimate in a given situation.**

Q. Do you have an understanding of what is covered under the TechShield warranty -- or, first, is there a warranty on the TechShield product from Louisiana-Pacific?

A. **Yes.**

Q. Are you familiar with that warranty?

A. **Generally familiar.**

Q. Okay. Has the warranty been revised within the past five years?

A. **I'm not sure in that time frame.**

Q. If I were to show you a copy -- well, if I were to show you a copy of a 2007 TechShield 20-year transferable limited warranty, would that assist you in testifying concerning the warranty claims?

A. **In what context?**

Q. Well, I'll ask you to review what was marked

yesterday as Exhibit 3 at Mr. St. Germain's deposition.

A. **Okay.**

Q. First, if you would just review it.

A. **The entire document?**

Q. Just generally.

A. **Okay.**

Q. You don't have to read it line by line unless you want to.

A. **(Reviews documents.) Okay.**

Q. What is that document?

A. **It is a copy of a TechShield warranty.**

Q. And does that appear to be the warranty as it existed in 2007?

A. **It's dated 2007.**

Q. Do you know if the warranty has undergone any revisions since 2007?

A. **I don't.**

Q. Does that appear, though, to be the standard warranty for the TechShield product?

A. **Yes.**

Q. Do you have any reason to doubt that warranty would or would not apply to the Taylor home assuming that the house was built in 2008 or 2009?

A. **I'm not sure.**

Q. When you conduct an inspection of a structure where the TechShield product is at issue for warranty purposes, what sorts of nonconformities are you generally looking for to make a determination as to whether the warranty might be implicated?

A. **Are you asking what do I typically see when I go out and look at a TechShield, a complaint?**

Q. You can answer that, sure.

A. **Okay. I mean, my assessment of the material would typically fall into one of two areas: Has the structural integrity or performance of the material been affected in any way, or has the panel's ability to perform as a radiant barrier assembly been impacted in any way. Those would be two big areas of assessment I would determine in looking at a TechShield job.**

Q. Does the warranty cover workmanship issues -- or strike that.

Does the warranty cover issues related to inadequate or deficient assemblage?

A. **No.**

Q. Does it cover manufacturing defects?

A. **Yes.**

Q. So would it be -- other than a manufacturing defect within the product itself, what does the warranty cover? What issues are you typically looking for?

MR. MURPHY: Object to form.

THE WITNESS: Are you saying what is the customer complaint about the material?

BY MR. ANDERS:

Q. No. I mean if you're inspecting --

A. **Yes.**

Q. -- a structure sheathed in TechShield. Let's say there's been a complaint regarding the performance of TechShield.

A. **Okay.**

Q. What are you typically looking for to make a determination as to whether the warranty will provide coverage to the customer?

A. **It depends on the nature of the complaint.**

Q. If you know, has Louisiana-Pacific ever honored a warranty claim -- first, has Louisiana-Pacific ever been presented with a warranty claim, if you know, where it was alleged that a structure was damaged due to TechShield within the structure being energized by a lightning strike?

MR. MURPHY: Objection to form.
THE WITNESS: Yes.
BY MR. ANDERS:
Q. And has Louisiana-Pacific ever honored such a claim?
MR. MURPHY: Objection to form.
THE WITNESS: No.
BY MR. ANDERS:
Q. And why not?
A. **Because it was determined that the radiant barrier performance of the panel had not been impacted and the structural integrity of the OSB substrate had not been impacted.**
Q. Could you elaborate on that for me. If a panel of TechShield catches fire, does that -- are you saying that that has no impact on the panel's ability to perform as a radiant barrier?
MR. MURPHY: Objection to form.
THE WITNESS: So a panel starts on fire?
BY MR. ANDERS:
Q. Yes, sir.
A. **Well, it could or it could not. I mean, I could envision a scenario where -- I'm not -- I just -- I'm not -- yeah, I'm not sure.**

Q. And if a panel of TechShield catches fire would that impact the panel's ability to serve as structural sheathing?
A. **I suspect it might.**
Q. But Louisiana-Pacific's never honored such a claim after a fire to your knowledge?
MR. MURPHY: Objection to form.
THE WITNESS: No, not that I'm aware of.
BY MR. ANDERS:
Q. Would you say that a majority of the inspections that you attend on behalf or conduct on behalf of Louisiana-Pacific involve warranty claims?
A. **Ask that again.**
Q. Sure. Would it be fair to say that the majority of inspections that you perform or conduct on behalf of Louisiana-Pacific involve warranty claims by customers who are dissatisfied with the product for one reason or another?
A. **Yes.**
Q. And would that be true for TechShield inspections as well?
A. **Yes.**
Q. How does Louisiana-Pacific communicate the

existence of the warranty for TechShield to customers who end up owning structures in the field that are clad with the material?
MR. MURPHY: Objection to form.
THE WITNESS: Well, every -- or the foil side of the product is clearly labeled with the product name and manufacturer. And every panel has got our toll free number imprinted on it so they have direct access or the ability to contact the company simply by looking at the material. And then the LP website makes available, you know, all of our product warranties and product literature for anyone, you know, who would have an interest in the product or a concern about the product.
BY MR. ANDERS:
Q. Is there anything on the product itself that indicates the existence of the 20-year transferable limited warranty for TechShield?
A. **I'm not sure.**
Q. You see TechShield pretty often, though, don't you?
A. **Yes.**
Q. Are you aware of anything written on the product that states for warranty information, visit www.lpcorp.com or anything of that nature?

A. **I know there is a toll free number on there. I don't know if they specifically direct customers to that number, you know, for a warranty complaint. I'm not sure if that's the actual terminology that they would use.**
Q. Is the word "warranty" printed anywhere on the product?
A. **I don't know.**
Q. You don't recall it being printed on the product.
A. **Yeah. Yeah.**
Q. How does Louisiana-Pacific sell TechShield, how do they get it out in the field?
MR. MURPHY: Objection to form.
BY MR. ANDERS:
Q. Is it through distributors or does the company sell it itself? I'm talking about how end users end up with the product.
MR. MURPHY: Objection to form.
THE WITNESS: Define an "end user."
BY MR. ANDERS:
Q. Builders or owners of structures.
A. **Okay.**
MR. MURPHY: Same objection.
THE WITNESS: The -- it would depend on

the market in which the product is sold, but the most common path to market would be LP selling the product to a distributor, who in turn sells the product to a retail yard, who then in turn sells the product to a builder. That would probably be the most common path to market.
BY MR. ANDERS:
Q. Sir, you mentioned a retail yard?
A. **Yes.**
Q. Can you tell me what you mean by that?
A. **So it would be either a local lumber yard or a Home Depot, Lowe's, that type of a location.**
Q. Is the product sold at Home Depot and Lowe's?
A. **Yes.**
Q. And the TechShield product is also sold at retail lumber yards?
A. **Yes.**
Q. Do you know whether customers at Lowe's are informed by Lowe's of the existence of the 20-year transferable limited warranty?
MR. MURPHY: Objection to form.
THE WITNESS: I wouldn't know. I'm not -- don't know.
/ / /

BY MR. ANDERS:
Q. You've been around lumberyards, I take it, where the product is being sold, correct?
A. **Yes.**
Q. Typically does -- is the product accompanied by any paper documents, such as that 20-year transferable limited warranty?
A. **In some cases, yes.**
Q. You've seen that?
A. **Yes.**
Q. Is the product accompanied by the 20-year transferable limited warranty in all cases?
MR. MURPHY: Object to form.
THE WITNESS: I'm not sure what you're asking there.
BY MR. ANDERS:
Q. Sure. Let's say I go to a lumberyard and I want to buy some TechShield.
A. **Yes.**
Q. I want to use it to sheathe the roof of a home.
A. **Okay.**
Q. Does Louisiana-Pacific require distributors of its product to make the 20-year transferable limited warranty available to its customers?

MR. MURPHY: Objection to form.
THE WITNESS: I don't know.
BY MR. ANDERS:
Q. Sorry, to their customers.
A. **Yeah, I don't know.**
Q. Do you have an idea from your time at the company as a technical field representative of how customers typically come to be aware of the existence of the warranty on the TechShield product?
A. **I don't.**
Q. The customers don't inform you?
A. **No.**
Q. Mr. Dellwo, did you come to any conclusions personally as to the cause of the fire in the Taylor home?
MR. MURPHY: Objection to form.
THE WITNESS: No.
BY MR. ANDERS:
Q. Do you believe that you would have the expertise to make such conclusions?
A. **No.**
MR. ANDERS: Just a moment. Do you want to take a break for a moment?
MR. MURPHY: Sure.

(Short break.)
BY MR. ANDERS:
Q. Mr. Dellwo, I'll show you what's been marked as Exhibit 1 to your deposition.
(WHEREUPON, the above-mentioned document was marked as Exhibit Number 1.)
THE WITNESS: Okay.
BY MR. ANDERS:
Q. Have you reviewed that document?
A. **Give me just a moment.**
Q. Absolutely.
A. **(Reviews documents.) Okay.**
Q. What is this document?
A. **This is an e-mail that was sent to Mark Goodson.**
Q. By you?
A. **Yes.**
Q. And who is Mark Goodson?
A. **Mark Goodson is -- I'm not sure of his official title, but he is an individual that has been retained by LP in regards to the inspection of TechShield in the field.**
Q. And when -- for what issues has Mr. Goodson been retained?
MR. MURPHY: Objection to form.

BY MR. ANDERS:
Q. Is he retained for inspections of TechShield structural -- is he a structural expert?
A. **I'm not sure.**
MR. MURPHY: Objection to form.
BY MR. ANDERS:
Q. Is he involved in lightning related claims?
MR. MURPHY: Objection to form.
THE WITNESS: He has -- I have met him on inspections involving lightning complaints, yes.
BY MR. ANDERS:
Q. Have you met him on inspections for any non-lightning related complaints with respect to TechShield?
A. **No.**
Q. How many times have you met him?
A. **Three or four.**
Q. And this e-mail refers to a conversation that you had with Mr. Goodson at the Erica Jones inspection in Tomball, Texas?
A. **Yes.**
Q. Is Erica Jones a homeowner?
A. **Yes.**
Q. Why were you and Mr. Goodson at Erica Jones' house?

A. **Per the request of LP's legal department.**
Q. And what was your purpose in visiting Erica Jones' house?
A. **To act as an LP observer for the inspection.**
Q. What about the home required inspection?
A. **The home had been damaged by fire.**
Q. And was it alleged that the fire had been caused by any products manufactured by LP?
MR. MURPHY: Objection to form.
THE WITNESS: I'm not quite sure what -- I think the allegation was that the home was struck by lightning.
BY MR. ANDERS:
Q. Was the home sheathed with TechShield in any --
A. **Yes.**
Q. -- portions of it?
What portion of the home was sheathed by TechShield?
A. **The roof deck.**
Q. So did Mr. Goodson ask you about specific performance criteria for TechShield panels?
A. **My recollection is that he asked if there were any established or written performance criteria for a radiant barrier panel.**

Q. And you have in this e-mail referred him to criteria established by the state of California?
A. **Yes.**
Q. Are you aware of any other criteria apart from those in the state of California for performance of TechShield?
A. **Some local jurisdictions might have a, you know, series of guidelines established for what they're looking for in a radiant barrier, but the state of California is generally the one where that becomes a question.**
Q. Why is that?
A. **I'm not sure.**
Q. Are you aware of any external requirements for radiant barrier sheathing related to its performance when energized by lightning?
A. **No.**
Q. Have you ever served on any code authorities or bodies or advisory bodies?
A. **No.**
Q. Have you ever served on any technical panels outside of Louisiana-Pacific, such as ASTM or anything of that nature?
A. **No.**
Q. Did Mr. Goodson explain to you why he wanted

to know about performance criteria for TechShield panels?
A. **No.**
Q. When did you first meet Mr. Goodson?
A. **As far as the actual date, I'm not sure, but it would have been at an LP inspection.**
Q. It would have been prior to August 7th, 2012, in any event?
A. **Yes.**
MR. ANDERS: If we can go off the record for a moment.
(Off-the-record discussion.)
BY MR. ANDERS:
Q. What is RIMA?
A. **RIMA is a trade group of radiant barrier and insulation manufacturers.**
Q. In fact, it's the Reflective Insulation Manufacturers Association International, is it not?
A. **I'm not sure what it stands for.**
Q. Is Louisiana-Pacific a member of RIMA?
A. **I believe so, yes.**
Q. Do you know whether RIMA has established any standards for performance of radiant barrier sheathing?
A. **I'm not sure.**

Q. Have you ever reviewed any RIMA standards for the TechShield product or similar products?
A. **Not that I can recall.**
Q. And by "similar products," I mean radiant barrier sheathing.
A. **Again, I can't recall.**
Q. How do you define a radiant barrier sheathing?
A. **A structural panel that would limit the radiant energy that's allowed to enter a building cavity.**
Q. And how is that limitation typically accomplished?
A. **How does it perform, is that what you're asking?**
Q. No. I'm asking what component of a structural panel makes it a radiant barrier sheathing as opposed to ordinary sheathing?
A. **It would be the aluminum surface that's applied to one side of the panel.**
Q. Are you aware of whether any forms of radiant barrier sheathing are made that do not incorporate aluminum?
A. **No.**
Q. Does Louisiana-Pacific manufacture any forms

of radiant barrier sheathing other than TechShield?
A. **Not that I'm aware of.**
Q. I had some discussion with Mr. St. Germain yesterday regarding a product that is -- it sounded similar to TechShield, but is manufactured for the shed industry as he put it.
A. **Uh-huh.**
Q. Are you familiar with that product?
A. **No.**
Q. He referred to it as SilverLine or something like that, he wasn't sure of the name. You're not familiar with that product?
A. **No. No.**
Q. Have you ever been called upon to inspect a shed which had been damaged by fire following a lightning strike?
A. **No.**
Q. Whether or not the shed incorporated a radiant barrier sheathing manufactured by Louisiana-Pacific?
A. **(No response.)**
Q. Would the same answer be no?
A. **Are you asking -- I'm not sure what you're asking.**
Q. Have you ever --

A. **Have I ever inspected a shed with --**
Q. Have you ever had to inspect a shed?
A. **Yes.**
Q. Have you ever had to inspect a shed that included radiant barrier sheathing?
A. **I'm not sure.**
Q. Have you ever had to inspect a shed that -- where the issue was the shed had caught fire --
A. **No.**
Q. -- following a lightning strike?
A. **No.**
Q. Okay. Have you ever been involved in the preparation of technical literature for Louisiana-Pacific?
A. **No.**
Q. Have you ever been involved in research or development of a new product for Louisiana-Pacific?
A. **No.**
Q. No?
A. **No.**

MR. ANDERS: I don't have any other questions.

MR. MURPHY: We will reserve our questions until trial.

FURTHER DEPONENT SAITH NOT

ERRATA PAGE

I, DAVID WILLIAM DELLWO, having read the foregoing deposition, Pages 1 through 53, do hereby certify said testimony is a true and accurate transcript, with the following changes (if any):

PAGE	LINE	SHOULD HAVE BEEN
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_____
DAVID WILLIAM DELLWO

_____
Notary Public
My Commission Expires: _____

REPORTER'S CERTIFICATE

STATE OF TENNESSEE

COUNTY OF SMITH

I, STEPHANIE LAKE JONES, Licensed Court Reporter, with offices in Nashville, Tennessee, hereby certify that I reported the foregoing deposition of **DAVID WILLIAM DELLWO** by machine shorthand to the best of my skills and abilities, and thereafter the same was reduced to typewritten form by me. I am not related to any of the parties named herein, nor their counsel, and have no interest, financial or otherwise, in the outcome of the proceedings.

I further certify that in order for this document to be considered a true and correct copy, it must bear my original signature, and that any unauthorized reproduction in whole or in part and/or transfer of this document is not authorized, will not be considered authentic, and will be in violation of Tennessee Code Annotated 3914-149, Theft of Service.

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STEPHANIE LAKE JONES
Licensed Court Reporter, and
Notary Public
State of Tennessee
My Commission Expires: May 18th, 2016
LCR #172 - Expires June 30, 2014

In The Matter Of:

State Farm, et al v.
Louisiana Pacific Corporation

Mark Goodson
December 7, 2012

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION

STATE FARM FIRE AND CASUALTY COMPANY as subrogee of CHRISTOPHER TAYLOR, Plaintiffs,	*	CIVIL ACTION NO.: 5:12-cv-289-BO
VS.	*	
LOUISIANA PACIFIC CORPORATION, Defendant.	*	

****

ORAL AND VIDEOTAPED DEPOSITION OF

MARK GOODSON, PE

DECEMBER 7, 2012

****

ORAL AND VIDEOTAPED DEPOSITION OF MARK GOODSON, PE produced as a witness at the instance of the Defendant, taken in the above-styled and -numbered cause on the 7th day of December, 2012, A.D., beginning at 9:09 a.m. to 5:33 p.m., before Kelly Hassell, a Certified Shorthand Reporter in and for the State of Texas, in the offices of Cozen O'Connor, located at 1717 Main Street, Suite 3400, Dallas, Texas, in accordance with the Federal Rules of Civil Procedure and the agreement hereinafter set forth.

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ALSO PRESENT:

MS. TAMYTHA SMITH - Videographer

I N D E X

E X H I B I T L I S T

EXHIBIT LIST CONTINUED

PROCEEDINGS

THE VIDEOGRAPHER: This is the videotaped deposition of Mark Goodson, taken on behalf of the Plaintiff -- Defendant -- in the matter of State Farm, et al. versus Louisiana Pacific Corporation, Cause Number 5:12-cv-289-B0 for the Dis- -- for the United States District Court for the Eastern Division of North Carolina, Western Division, held in the offices of Cozen O'Connor at 1717 Main, Suite 3400, Dallas, Texas.

The videographer's name is Tamytha Smith. The court reporter's name is Kelly Hassell. This is the beginning of Tape 1. Today's date is December 7th, 2012. We are on the record at 9:09.

Will counsel introduce themselves for the record.

MS. MaCLEOD: My name is Skye MaCleod, and I am the attorney representing the Plaintiff, State Farm Fire and Casualty Company as subrogee of Christopher Taylor.

MR. ELLIS: I'm Neal Ellis here for LP.

MR. MURPHY: George Murphy here on behalf of LP.

MARK GOODSON, PE,

having been first duly cautioned and sworn to testify the truth, the whole truth and nothing but the truth, testified on his oath as follows:

DIRECT EXAMINATION

BY MS. MaCLEOD:

Q Good morning, Mr. Goodson. We are here today to take your deposition because Plaintiffs have filed a lawsuit against Louisiana Pacific. And you've been named as an expert witness in this case, correct?

A Yes, ma'am.

Q And I have seen evidence of a number of depositions that you have provided throughout your career, so I won't spend a lot of time on ground rules because I feel like you probably know what those are. But if at any point you need to take a break, please let me know and I'd be glad to accommodate you. However, if I've asked a question that's pending, I'll just ask that you provide that answer and then we can take a break. And if we can not talk over each other, that would be perfect.

Do you have any questions at this point about the process?

A No, ma'am.

Q Will you state your full name and address for the record.

A Yes, ma'am. Mark Eugene Goodson, business address, 1500 Spencer, Denton, D-E-N-T-O-N, Texas 76205.

Q And do you still reside at 3370 Forest Glen in Corinth, Texas?

A Yes, ma'am.

Q Do you have any plans to retire or leave Goodson Engineering in the next five or so months?

A Not that I'm aware of.

(Exhibit Number 63 was marked.)

Q (BY MS. MaCLEOD) Okay. All right. You were served with a notice of deposition and subpoena duces tecum in this case, and you were asked to produce your file. I have gone ahead and taken the lib- -- taken the liberty to pre-mark the file materials that you provided to me as Exhibit 63, and they are here in front of you. This -- if you will, just briefly look through that and see if it matches what you think you've provided to me.

A Substantially, that's -- I think there are two documents missing.

Q Okay. What would those be?

A The -- you should have received them yesterday via e-mail, I think, and it's just some notes and just a tally of time I spent on this case.

Q Okay. And I did get that via e-mail yesterday afternoon, so I do have both of those things. And then I understand from our discussions this morning that you have provided some additional information that -- today, this morning -- that was not included in the file materials provided ahead of time, correct?

Page 9

A Yes, ma'am.
Q Okay. And that's the stack that's there in front of you?
A Yes, ma'am (indicating).
Q Are those copies of what are in your file? The stack that's there in front of you, are those your originals?
A The -- well, these are -- well, like photos, I mean, obviously, they're stored digitally, but, you know, all this stuff could be copied and taken with.
Q Okay. Is it okay if I go ahead and mark that as Deposition Exhibit 3 -- 64 -- excuse me -- and then --
A Yes, ma'am.
Q Okay.
(Exhibit Number 64 was marked.)
Q (BY MS. MaCLEOD) Okay. And then let's go ahead and mark as Deposition Exhibit 65 the two documents that were provided to me via e-mail yesterday afternoon.
(Exhibit Number 65 was marked.)
Q (BY MS. MaCLEOD) Other than the SEM, EDX and microscopic photographs that were taken on September 27th at your facility, did you review any other photographs in this matter?
A Well, those that came with the reports, like those kind of photos, yes, ma'am.

Page 10

Q Did you receive all of the photographs that Dennis Scardino took in this matter or just the ones that were attached to his report?
A The -- gosh. Ma'am, I don't remember.
Q Okay. All right. I saw mention in time spent of review of patents?
A Yes.
Q Okay. Was this a patent for TechShield?
A Yes, ma'am
Q How many patents did you review?
A One.
Q One. Okay. Is that patent in the -- included in the materials that were provided today in Exhibit 64?
A I thought it was provided last -- last week when I produced the documents.
Q Okay. Okay. Why is it that you reviewed the patents in this case -- or the patent that you reviewed in this case?
A Sure. I wanted to know -- have more knowledge about the product.
Q And what did the patent reveal to you when you reviewed it?
A Basically, the patent -- what it pertains to is how the product is constructed, more in particular with how you face one side of the product with a radiant aluminum

Page 11

layer while still allowing essentially the woodwork -- the wood to breathe and expel itself with moisture.
Q Do you recall how long that patent was? Is it a single page?
A Oh, gosh. It -- it's probably 10 or 12 pages.
Q Did you locate it in the materials that you brought today?
A I have it. And I -- I thought it was in last week's documents, but it's right here (indicating).
Q And it may be.
A Okay.
Q I'll have to go back through and look again. Did you make -- in any of your review of expert reports or in telephone conversations with folks, whether it be Mr. Ellis or Mr. Murphy or someone from Louisiana Pacific, did you ever make any notes in this case?
A No, ma'am.
Q Is that your typical practice, is to not --
A It just depends on the case. If -- if I'm doing work on-site as in a fire -- a fire site, I, you know, would have made voluminous notes.
Q Okay. Did you make notes during the testing that took place on September 27th, 2012?
A Other than the photos, no.
Q Do you have any other file that you maintain in

Page 12

regard to radiant barrier cases that you're undertaking on behalf of Louisiana Pacific?
MR. ELLIS: Objection.
Go ahead.
A Okay. I'll -- I'll answer what I can --
Q (BY MS. MaCLEOD) Okay.
A -- and see if that's what you're asking. There are, as example, fires that I have investigated and been on-site for Louisiana Pacific, one in Leon Valley, as an example, just a few weeks ago where, yes, there is such a file and it does have notes in it. And that -- that would typically be the case for when I'm on-site.
Q But that file is not going to have anything in regard to the Taylor case in it, correct? It'll be a separate file?
A Yes, ma'am, it would be separate.
Q How much time did you spend in preparing for today's deposition?
A About four hours.
Q And what did you do in preparing for today's deposition?
A Substantially, I organized my file and then reviewed what was in my file, and I met with Mr. Murphy.
Q How long did you meet with Mr. Murphy?
A Oh, an hour and-a-half.

Page 13

Q Was that this morning?
A That was yesterday.
Q Yesterday.
Have you reviewed the complaint in this matter?
A Not that I'm aware of.
Q Have you reviewed any of the answers to interrogatories provided by either party?
A I don't -- no, ma'am.
Q Have you reviewed any deposition transcripts or videos that have been taken in this case prior to your deposition today?
A No, ma'am.
Q Have you had an opportunity to review the Deposition Exhibits 1 through 62 prior to today's deposition?
A No.
Ms. MacLeod, let me -- let me clear that up. I -- the better answer is, I don't know what has been marked as exhibits, but as an example, I -- I have reviewed Mr. Simmons's report. I feel certain that was marked last week, some things like that. But did I set out to review any specifically marked exhibits? The answer is no.
Q Okay. Thank you.
Have you reviewed in this case the Rule

Page 14

26(a)2 disclosure of expert testimony provided by Louisiana Pacific?
A No.
Q Have you been identified and asked to opine to the fact that the presence of TechShield did not present an increased risk of lightning-related fires when the lightning struck the Taylor home?
A Well, that's -- that's what we've talked about, my testimony in that regard, yes, ma'am.
Q Okay. Have you been asked to opine about the nature or characteristics of lightning and lightning striking the home?
A In -- to some extent, yes.
Q And why do you limit that to some extent?
A You know, I'm -- I am not, per se, a lightning expert, lightning physicist; however, I'm an electrical engineer. I know how it can manifest itself when it deals with electrical conductors.
Q Have you been asked to provide opinions regarding the composition and characteristics of metal building products, radiant barrier sheathing and TechShield?
A Yes.
Q Have you been asked to offer opinions regarding McDowell Owens testing and analysis failures in that it failed to replicate the effects of lightning strike on

Page 15

TechShield?
A I don't know if I was specifically asked that, but that's what I told them.
Q Okay. Will you be providing opinions in regards to McDowell Owens testing and analysis failure in the fact that they failed to demonstrate that LP TechShield product increases likelihood of fires in a home when struck by lightning?
A Yes, ma'am.
Q Am I correct in understanding that you will not offer any testimony or opinions concerning the area of origin of the fire at the Taylor home?
A That's fair.
Q Do you know where Louisiana Pacific's origin and cause expert, Dennis Scardino, places the area of origin of fire?
A Yes, I do.
Q Do you have any reason to disagree with the location where Mr. Scardino places the area of origin of fire in the Taylor home?
A Not particularly. I mean, that's not my area, but --
Q Okay. So you won't -- you won't be disagreeing with any testimony he has to offer at trial regarding the area of origin?

Page 16

A Correct.
Q Do you know whether Louisiana Pacific contends that the TechShield installed in the Taylor home was, in fact, energized by lightning that struck the Taylor home?
MR. ELLIS: Objection.
Go ahead.
A No. I -- I believe that they do.
Q (BY MS. MaCLEOD) Okay. Do you intend to offer any opinion at the trial of this matter as to whether the lightning directly struck the Taylor home?
A Okay. So that I understand your question, are you asking if there was lightning damage or if there was a direct strike?
Q Well, I was trying to do it in one question, so I can do it in two: Do you intend to offer an opinion at the trial of this matter that a direct -- that the Taylor home was directly struck by lightning?
A And so that I understand your question, you're asking me if this was a direct strike as opposed to an indirect strike?
Q Correct.
A Okay. I don't know which it was.
Q Okay. Have you seen -- had the opportunity to look at Dennis Scardino's photographs in Exhibit 60 of the chimney cap?

Page 17

A Okay. I have seen photos of the chimney cap. I don't -- I -- I can't remember whose report they were in.
Q Okay. Did you see -- and I am going to show you what was marked as Exhibit 60 during Dennis Scardino's deposition.
A Okay.
Q And I'm going to direct you to Photograph E28 and Photograph E29.
A Yes.
Q Okay. Do you see any evidence of damage of a lightning strike to the chimney cap?
A Absolutely.
Q Okay. Will you offer any testimony in this matter that the chimney cap was not struck directly by lightning in this matter?
A No.
Q Okay. In any of the opinions that you will be offering at the trial of this matter, does it matter, in forming those opinions, whether the house was directly or indirectly struck by lightning?
A Not really.
Q Okay. Why is that?
A Because I'm going to be talking, as an example, the -- the difficulties of -- of the McDowell Owens testing, number one. Number two, I mean, certainly there

Page 18

is evidence of -- of energization, and whether that is a direct or indirect strike, I'm not really certain that it matters.
Q Okay. And when you say energization, you're talking about energization of the TechShield product?
A Well, and -- and of the house by lightning, yes.
Q And am I correct in my understanding that you do not intend to offer any opinions at the trial of this matter in regard to whether the TechShield was installed properly or not?
A Correct.
Q Will you offer any opinion at the trial of this matter as to what the first fuel ignited was in the Taylor home?
A No.
Q Will you offer any opinion at the trial of this matter as to what the ignition source was in the Taylor fire?
A Yes.
Q Okay. And what was the ignition source?
A I think it's very reasonable that it was lightning.
Q Did you find in any of your investigation or search any other probable cause or -- or probable ignition source for the fire in the Taylor home?

Page 19

A Once all the work has been done, no.
Q Will you be offering any opinion at the trial of this matter as to what the opposing electrode for the arc that formed the electrical damage to the 14-3 ground wire of the alarm circuitry was?
A I'm uncertain as to what it arced to.
Q Based on your review of photographs, review of reports, review of other documents or conversations that you've had regarding the Taylor fire, did you find any evidence of electrical arcing other than that that was located on the 14-3 ground wire serving as the alarm circuitry?
A As I --
Q That was a long question.
A And -- and -- and as I understand your question, what you're asking is in regards to the electrical in terms of house-current-type arcing?
Q Correct.
A Yeah. And the answer is no. Let me get the answer in. I found evidence of arcing on one conductor, the 14, dash, 3 with ground cable and no other instances, if that's what you're asking.
Q Did you see -- in any review of any of the materials that have been provided to you or any investigation that you undertook in regard to this

Page 20

particular fire, did you see any evidence of any other arcing in any location in the Taylor home outside of -- you've already addressed the electrical system -- outside the electrical system?
A Well, based on the pictures, there's some damage to the chimney cap. There is damage to the -- the dryer system exhaust ducting.
Q Anything else that you can think of that has evidence of arcing?
A No.
Q Do you hold the opinion that if the Taylor house had not had TechShield installed in it, that it necessarily would have caught fire anyway?
A I'll just give you my opinion, if that's okay.
Q You'll give me your opinion?
A Yeah.
Q Yes, that -- that would definitely be okay.
A Excuse me. My opinion is that that is possible, but I think more importantly, I really don't think one can say either way that this -- this fire would or would not have happened had there been TechShield present or not present. I -- I -- I just don't think the data is there to support one saying, had the TechShield not been there, we wouldn't have had a fire.
Q Say that last part again.

Page 21

A I don't believe there is data available to say, had the TechShield been absent, this fire wouldn't have happened.
Q Is there data available that would say, if the TechShield wasn't present, that it would have happened?
A What we do know is that we -- we had a lightning strike and that lightning strikes do cause fires, and that's what we know.
Q Okay. Will you be offering an opinion in the trial of this matter that if the Taylor house had not had TechShield installed in it, that this house necessarily would have caught on fire anyway?
A Yeah. As I understand your question, more likely than not the answer is, I won't offer that opinion.
Q Is it your opinion that the traditional OSB is as conductive as TechShield radiant barrier with its aluminum laminate?
A Oh, no. Okay. Let me -- let me back up. When you say conductive, I -- I assume you're talking electrically conductive?
Q Yes, sir.
A Okay. Yeah. All things being equal, aluminum is a better conductor than -- than OSB.
Q So OSB with aluminum sheathing attached to it is going to be a better conductor than OSB without the

Page 22

aluminum sheathing, correct?
A All -- all other things being equal and -- yes, ma'am.
Q Will you be offering any opinions at trial that the TechShield radiant barrier product is less electrically conductive than other radiant barrier products that are on the market today?
A No opinion on that.
Q Either way?
A Correct.
Q Okay. How many engineers are currently employed by Goodson Engineering including yourself?
A Okay. Four.
Q And does Goodson Engineering do litigation-related work?
A Yes, ma'am.
Q Has it always done so since its inception in 1984?
A That's always been a part of the workload, yes, ma'am.
Q Okay. And how much of Goodson Engineering's business involve litigation -- involves litigation-based products?
MR. ELLIS: Objection.
Go ahead.

Page 23

A I'm not understanding the question.
Q (BY MS. MaCLEOD) Okay. How much -- I asked you if Goodson Engineering does litigation-related work. How much of the work that -- in total -- that Goodson Engineering does on an annual basis is -- involves litigation?
A Okay. When you ask that question, do you include in that number those instances where perhaps lit- -- where litigation could reasonably be anticipated?
Q Yes.
A Okay. Probably 80 percent.
Q Does Goodson Engineering do design work?
A Yes.
Q Does Goodson Engineering do product testing?
A Yes.
Q What would you say -- if you can, give me an estimate of how much of the work that Goodson Engineering does is design work.
A Probably 10 percent.
Q What about in regard to product testing?
A The other 10 percent.
Q Has Goodson Engineering done any product testing for Louisiana Pacific?
A No.
Q And when you say "product testing," how do you

Page 24

define that?
A Okay. It could be several ways. I just -- I'll just give you examples.
Q Okay.
A A manufacturer of a -- a fan that is used in, let's just say, the restoration business after a fire or flood or something like that, they were having some issues with overheating of the fan, particularly some components within it. A large number of those fans were shipped to us for evaluation to see, you know, if indeed they were failing and could cause a problem. Right now, there is a substantial amount of work going on in regards to the design associated with a patent I just received in the last several months, and so doing design work and then the -- the product testing to prove up that product to get it ready for market.
Q Does that have anything to do with CSST?
A It does.
Q I figured it might.
Have you done any design work for Louisiana Pacific?
A No, ma'am.
Q And is the design work you do, is that your -- Goodson Engineering's own internal designs that it's creating?

Page 25

A Well, at times.
Q What else could it be?
A Well, as examples, I'm -- I'm on a short list within Denton County with the governmental agencies when they need electrical design for buildings to add generators or, say, a new fire system, we did a new fire system for the jail a few years ago, I'll do that design work.
Q Have you done any design work with lightning protection systems?
A Yes.
Q How many times?
A Gosh, that would have been in the late -- mid-'80s, probably 10 to 15 times.
Q If you can, what percentage of Goodson Engineering's work is for Louisiana Pacific?
MR. ELLIS: Objection.
Go ahead.
A Rough numbers, two percent, maybe one percent, if that.
Q (BY MS. MaCLEOD) Okay. Can you tell me or give me your best approximation of how many projects or cases you've been retained to work on by Louisiana Pacific.
A I don't believe more than six. I believe certainly four and probably five.
Q One of those would be the Leon file that you

Page 26

mentioned earlier?
A Yes, ma'am.
Q And one of them is the -- there's a case out in Humble, Texas?
A Yes.
Q Okay. And one them would be the Taylor case?
A Yes.
Q Can you think of where the others are located?
A Yes.
Q Can you tell me?
A Sure.
Q Okay.
A I believe another one is in San Antonio and one is in Austin.
Q Is the only project that you're aware of in which you're doing work for Louisiana Pacific that's out of the state of Texas the Taylor case?
A Yes, ma'am.
Q Are all of the cases that you're doing work for Louisiana Pacific, do they involve TechShield?
A Yes.
Q In addition to Louisiana Pacific, have you ever been retained to work on cases for Georgia Pacific involving a radiant barrier product?
A No.

Page 27

Q Have you ever been retained by Norbord to work on a radiant barrier product?
A No, ma'am.
Q What about any other manufacturer of radiant barrier products, have you been retained to work on radiant barrier issues for them?
A No, ma'am.
Q Do you know how many manufacturers are producing a product similar to TechShield where the radiant barrier is adhered directly to the OSB sheathing?
A I have no idea.
Q In trying to determine opinions about the materials and the composition of TechShield, you did no other research in regard to other like products that are out there on the market?
A Correct.
Q Do you know, in fact, whether there are even like products out there on the market?
A Are you talking about an oriented -- an OSB-type product with a radiant barrier?
Q Adhered to the -- that OSB sheathing, yes, sir.
A Sure. I've seen them.
Q Okay. Do you know how many folks are out there manufacturing that kind of product?
A No idea.

Page 28

Q Okay. Do you know whether Louisiana Pacific makes any other radiant barrier product other than TechShield?
A Not that I'm aware of.
Q I am going to hand you what we are going to mark as Exhibit 66.
(Exhibit Number 66 was marked.)
MR. MURPHY: Thank you.
MS. MaCLEOD: It probably won't happen again.
Q (BY MS. MaCLEOD) Okay. What is this document?
A A copy of my report.
Q I'm also going to hand you a copy of what I'm marking as Exhibit 67.
(Exhibit Number 67 was marked.)
MS. MaCLEOD: That didn't last long.
Q (BY MS. MaCLEOD) All right. And this is a copy of your CV, correct?
A It's -- it's a portion of it.
Q What part is missing?
A About two more pages.
Q Which include?
A Publications.
Q Okay.
A Presentations.

Page 29

Q Okay. And I have marked those differently, so we will get to them. If you will look under -- or first let me ask you, is this the -- in regard to licensure, education, affiliations, experience and appointments, your most updated version of those items?
A No, ma'am.
Q Okay. Do you have a more updated version of licensure, education, affiliations, experience and appointments?
A Yes, ma'am.
Q Okay. And I'm guessing that might be in some of the things that you brought this morning.
A Yes, ma'am.
Q I think -- I was going to say I think it might be Deposition Exhibit 64. I think it's -- the new stuff is the 64, yes.
A Okay. I'm sorry.
Q No, that's okay.
A Yes, ma'am.
Q Okay. So that is the most updated version. Perhaps I should ask you this before I spend a lot of time looking through it: Have there been any additions to the licensure -- the licensure, education, affiliations, experience or appointments?
A Short way of asking what's the difference?

Page 30

Q Yeah.
A Okay. It's under appointments.
Q Okay. And as I can see it, it looks like the new addition is member of the State Fire Marshal's office science advisory route -- work group, appointed 2012?
A That's right.
Q Okay. Tell me about that.
A Okay. Back in about 1992 or '4, a house fire occurred in Texas. Three children were -- died. In about 2004, a man by the name of Mr. Willingham was executed for murdering his children. The -- the long and short of it is it was not a righteous conviction. There was no arson. It was all based on old wive's tales and very poor fire investigation techniques.
The state has vowed that this cannot happen again, and so they received funding and appointed myself and Mr. -- or Dr. -- excuse me -- Dr. Icove and Dr. DeHaan and Dr. Peerwani in Fort Worth to essentially review all of the cases of persons serving time for arson or an arson-related crime such as murder to make sure that those people that -- on -- that are incarcerated are there legitimately; it was not based upon a conviction which was very poor science.
And so we've been asked and appointed to review all these old cases, and in addition, to start

Page 31

teaching modern fire science investigation techniques to the investigators in the state.
Q Okay. And will the files that you review include all of Texas, any arson case -- any arson conviction in the state of Texas?
A That's my understanding. Well, let me -- let me back up. The cases are pre-screened. Where there's confessions or something like that, there will be no review. But where there is a hint of questionable science investigation, supposedly those are the cases that will be forwarded to us.
Q Okay. Have you started this undertaking?
A We start January 8th.
Q January. Okay. Have they given you any idea how many cases you're going to be reviewing?
A No. I mean -- I mean, I know there's roughly a thousand people in the pen for that kind of problem or for -- for an arson -- or arson murder conviction.
Q Okay. If we can go up to licensure.
A Yes, ma'am.
Q As I understand it, once you get licensed and sit for the exam and pass it in one state, you can then make an application and become licensed in other states without having to sit for another exam; is that correct?
A That's substantially correct.

Page 32

Q Okay. Where were you first licensed?
A Texas.
Q And when were you licensed in North Carolina?
A Probably two years ago, maybe three. I think it's more likely two.
Q And I should have asked you, when did you first become licensed in Texas?
A Okay.
Q If you can remember.
A 1984.
Q And why did you seek application for licensure in North Carolina?
A I received a call from a potential client out there who wanted me to do some work in North Carolina regarding CSST, and they said, by the way, it would really be a good thing if you were licensed out -- out there.
Q Did they explain to you why it was a good thing to be licensed out there?
A No.
Q What kind of work were you going to be doing?
A Investigative work.
Q Were you doing the cause and origin for a fire or --
A As that term is classically defined, no.
Q Okay. What kind of investigatory work were you

Page 33

going to be doing?
A Well, doing the engineering work on a fire investigation.
Q Do you recall what that CSST case was?
A No.
Q Do you recall if you had to do anything other than seek reciprocity in North Carolina to obtain the license?
A There may have been a 20-point question on the rules -- or a 20-question exam on the -- or a 50-question exam on the engineering rules of North Carolina, but nothing more than that, just a lot of paperwork and paying fees.
Q And obviously, you passed whatever it is they --
A If there -- if there even was such a thing.
Q Right. Okay. Okay. Let's look at the education. It looks like you took some coursework at the Southwestern Medical School. Did you ever obtain a degree in any of the medical training that -- or coursework that you took?
A No.
Q How close did you get?
A Not that close. They discontinued the degree program.
Q Okay. In any of -- other than the -- Texas A&M,

Page 34

where you got a Bachelors of Science in electrical engineering in 1979, in any of the other education coursework that is listed here, did you obtain a degree for any of that coursework?
A No, ma'am.
Q Okay. If we can turn to affiliations --
A Sure.
Q -- there are four listed under here. Are you still a member or a fellow of the American Academy of Forensic Sciences?
A Yes.
Q When did you first become a member?
A 1985.
Q And what were the requirements to become a member?
A I don't recall.
Q Have you had any leadership roles at the AAFS?
A You know, I've -- there were a couple of years, probably in the late '90s -- I'm sorry -- late '80s, early '90s I was on a program committee, but other than that, no.
Q Are you still a member of the Institute of Electrical and Electronic Engineers?
A Yes.
Q When did you first become a member?
A Probably a sophomore in college.

Page 35

Q 1976 time frame?
A Yes, ma'am.
Q And do you recall what the requirements were to become a member?
A Well, I would have joined as a student member. I think you had to be enrolled in an electrical engineering curriculum and pay the money.
Q Okay. Have you held any leadership roles with this organization?
A No.
Q Are you still a member of the International Association of Arson Investigators?
A Yes.
Q When did you first become a member?
A My best guess is 15 years ago.
Q And if you recall, what were the -- what were the requirements to becoming a member?
A I think you had to be recommended by one or two other members and pay some fees and perhaps a background check.
Q Okay. And have you held any leadership roles with the IAAI?
A Yes.
Q Okay. And what -- will you tell me about those.
A Sure. I was on the engineering committee early

Page 36

on, and then probably for the last six years, I've been a peer reviewer.
Q Tell me about that. What does that mean?
A They publish a quarterly magazine or journal and it has technical articles in it. It's a referee journal, meaning that persons who sit on the peer review committee review the articles for technical soundness and then decide whether or not the article can be published or whether or not it's -- would be wrong to publish it.
Q Okay. How many folks are on this peer review committee with you?
A Eight, maybe nine.
Q Okay. And do the variety of issues -- well, let me ask you this: Are you specifically dedicated to reviewing a specific type of article on this peer review committee or do you review everything?
A Everything.
Q Okay.
A So that I've answered the question correctly, as I understand what you're asking me, I think, is --
Q Sure.
A -- do I limit myself to electrical or mechanical disciplines or do I review, as an example, origin and cause or chemistry? And the answer is, I review all the disciplines.

Page 37

Q Okay. Were you appointed because of your expertise in the electrical engineering field?
A That -- I would presume so.
Q Any other expertise for which you were appointed that you -- if you know?
A I know a whole lot about carbon monoxide intoxication from working with the medical examiner's office, so that would be -- that -- if there were another area, that would be it.
Q All right. It also states here that you are a member of the National Fire Protection Association. Are you still currently a member of that group?
A Yes.
Q When did you first become a member of that group?
A Perhaps 20 years ago.
Q And do you recall what the requirements were to become a member of that group with the NFPA?
A I don't recall.
Q Have you held any leadership roles with the NFPA?
A No.
Q All right. Let's move down to experience.
A Yes, ma'am.
Q It appears that while you were in college and for two years after, you worked with Rockwell International; is that correct?

Page 38

A Yes.
Q And why did you leave Rockwell International?
A A gentleman that I worked for took a position with TRW in Carrollton, and four engineers that worked for him in an engineering group all moved at the same time.
Q Okay. And then it appears that you worked for TRW Optic Electronics. Is that where everybody moved to?
A Yes.
Q Okay. And why did you leave TRW Optic Electronics?
A Several reasons: I was already doing consulting on the side, number one. Number two, I do not function well in a big organization.
Q Okay. I think you stated this, but I just want to make sure: You do not hold yourself out in the traditional sense of an origin and cause expert, correct?
A That's right.
Q Okay. And you don't hold yourself out as a metallurgical expert, correct?
A Correct.
Q And you don't hold yourself out as a lightning expert, correct?
A Not as a lightning physicist, no.
Q Okay. Why do you qualify that?
A Well, you know, I'm an electrical engineer. I know what coulombs and volts and amps are. They're very related to lightning, but I -- I do not get in -- and I can do lightning protection, design for lightning protection -- protection systems, but I'm not one that would go out and measure, you know, velocity of liters and return strokes, the types of things that, you know, some people do.
Q Okay. So in regard to lightning in the sense that it is electrical energy, that's what you're telling me that you have an expertise in?
A Yes.
Q Okay. Do you hold yourself out as a materials expert?
A If it relates to electricity, yes. But no, in terms of material scientist, no.
Q And do you hold yourself out as a mechanical engin- -- an expert in mechanical engineering?
A Well, I'm licensed in it. I -- I practice very little of it.
Q And in regard to the Taylor case, you've been asked to render opinions in this matter. In what field are you holding yourself as an expert?
A Substantially, it's going to be electrical engineering, and there will be some small portion of mechanical engineering.
Q What small portion is mechanical engineering?

Page 39

Page 40

A Basically, it's -- we're going to talk about energy and heat.
Q And that's not something that you would do as an electrical engineer?
A I'm -- certainly, I would as an electrical engineer. I do it quite often. I -- I just didn't want to be seen as limiting myself.
Q Okay. Okay. But other than in regard to holding yourself out or -- or the expertise that you've been asked to provide in this case, other than discussions of energy and heat, anything else that would fall under the umbrella of mechanical engineering?
A No.
MS. MaCLEOD: Now is a pretty good time to take a break. And we've got two minutes of tape left, so why don't we go ahead and go off the record and...
THE WITNESS: We shall.
THE VIDEOGRAPHER: Going off the record at 10:06.
(Break taken from 10:06 a.m. to 10:18 a.m.)
THE VIDEOGRAPHER: We're going back on the record at 10:18 with Tape 2.
(Exhibit Number 68 was marked.)
Q (BY MS. MaCLEOD) I'm going to hand you what we've marked as Exhibit 68, which you told me earlier

Page 41

was -- that there are two pages of publications and presentations, that this was actually a part of your CV?
A Okay.
Q Do any of the publications that are listed here concern radiant barrier sheathing, including, but not limited to, TechShield?
A No.
Q Are there any that include the discussion of lightning?
A A discussion of deaths by lightning in the JFS, February -- I'm sorry -- November 1993. "Handbook of Electrical Hazards," that was a book review, probably. "MOVs and Fire Causation," possibly. Two articles on CSST -- CSST and lightning and the link between lightning and CSST and fires, definitely. "CSST Lab Protocol," minimal.
Q What about electrically-induced fire gas -- fuel gas fires? Excuse me.
A I'm sorry. Over -- where is that?
Q That is closer, about --
A Yes.
Q -- midstream, closer --
A July 1999. The answer is yes.
Q That that would have some mention of lightning?
A You know, I don't remember that it mentions

Page 42

lightning, but there was a lot of lightning going on when I wrote that paper, and certainly that is a lightning-related phenomena, is one of the ways that that material can fail.
Q Does -- the electrically-induced fuel gas fires from July 1999, does that involve CSST or appliance connectors?
A Appliance connectors.
Q Okay. Other than -- I see three articles that appear to apply to CSST. Would that be the CSST and lightning January 2005, the link between lightning CSST and fires from October 2005 and then this -- this newer one, CSST lab protocol from January 2012?
A That's right.
Q Okay. Any other that involves CSST?
A No.
Q All right. If you will turn to Page 2 of Exhibit 68 and under presentations, are there any presentations that you've given -- or -- and these are all presentations that you've actually been the primary presenter?
A Yes, ma'am.
Q And do any of these presentations involve radiant barrier systems?
A No, ma'am.
Q And in which of these presentations would there have been a discussion about lightning?

Page 43

A Any presentation dealing with the CSST or energized gas lines starting at the bottom of presentation, CSST fires in Missouri, go up, energized gas on fires in Ohio, energized gas on fires at the 2010 AGM for the IWI. Then I gave a talk in San Francisco in 2005 -- January 2005, lightning -- lightning-induced CSST fires. Right prior to that is CSST failures for the Propane Defense Association.
And with all due respect, did you ask me about lightning or CSST? I forgot the question.
Q No. No. No. I mean, because those are so integrally linked, but I was asking about lightning.
A Okay. Mechanical and electrical fire causation, October '98. Those are the ones that -- that I remember. And then probably investigating electrocutions, the -- the second presentation down.
Q That -- that would have to do with lightning?
A Absolutely.
Q Okay. Okay. So the last presentation that you did called CSST fires, that was presented to the Missouri branch of the IAAI?
A Yes.
Q Okay. And what kind of information did you present there?
A Basically how to go on-site and analyze a fire

Page 44

involving CSST, what to look for. I went through, you know, how CSST fails, the difficulty of bonding and grounding in trying to rectify the problem. And then, you know, some very simple stuff like how -- how you find the hole, how do you leak test, what -- what kind of work you do in the lab to make sure that it's a hole from, say, lightning as opposed to electrically hot wires arcing to it.
Q Okay. Let's look at the patents.
A Sure.
Q There are three listed here. Does your updated CV that you brought list more patents than these three?
A No.
Q There are some that have been submitted and are pending, correct?
A Yes.
Q Okay. Are they not listed under here because of a confidentiality order?
A Oh, no. No.
Q No. Okay. Why aren't they listed as patents? Because they -- they're still pending?
A Yeah. They haven't been granted.
Q Okay. Are there a total of six? Is that --
A I think there's eight.
Q Eight. Okay. And do they all involve CSST?

Page 45

A No.
Q Okay. How many of them involve CSST?
A Five or six.
Q Okay. And what do the other ones involve?
A One involves a -- I'm trying to phrase this the best to protect what I'm doing. Sure. Basically, it is a way of -- it's a new design for a beverage mixing machine.
Q Okay.
A And then the other one is a new design for wiring or electric wiring or cabling that could be used in homes, industry, commercial applications that make -- make the insulation a lot safer in terms of electrical surge damage and lightning damage.
Q Okay. With that last one, are you working with the metal component or the insulator -- insulating component of that product?
A The metal component.
Q None of the patents that you have have anything to do with radiant barrier sheathing, correct?
A Correct.
Q How many of the patents that exist that involve CSST have some feature that serves as an increased safety to the CSST?
A It would be all of them.
Q And I don't want to spend too much time on this,

Page 46

but as I understand it, there is one patent that involves changing the charge times, is that --
A Well, there -- there are three, but yes.
Q Three involving changing the charge times?
A Two that have been granted. One that has been applied for.
Q Okay. And if you just briefly tell me what changing the charge times mean.
A Sure. Basically, if you go into a structure with CSST -- and we will pretend by way of example that the CSST is a fireplace. The fireplace -- and we have lightning in the area, we have -- we have step leaders coming down towards the house, we have a return stroke that goes up. The -- say, a steel insert fireplace is pretty good at not the impeding flow of current. Next to it you have CSST, which because it has some properties that's called skin effect, for one, and it has inductance also, that make it very slow to charge.
So in our theoretical example, you have a chimney here (indicating) at a million volts, if you will, and CSST being slow to charge is over 100,000 volts. You have almost a million volts difference between one and the other. And then the air breaks down and you have a flashover, and that -- the energy from the chimney has struck the CSST, punctures a hole, and then the gas is set

Page 47

on fire. The -- by changing the charge time, the CSST, the voltage on it can more carefully mimic what's happening over here next door at the (indicating) chimney, makes it less likely for one to arc to the other.
Q Do you know whether that's been utilized by anyone at this point?
A Okay. I rarely do this. Could we talk off the record and then you'll see why?
Q Is -- okay. Yes. Okay.
MS. MaCLEOD: Going --
MR. ELLIS: We're just going to hold that.
MS. MaCLEOD: Yeah. We'll do that at another time. We --
THE WITNESS: Okay. Okay. Okay.
MR. ELLIS: We're not discussing that right now.
THE WITNESS: Okay.
A Let me just say, there might be some issues.
Q (BY MS. MaCLEOD) Okay. And one of the patents in one of the designs is just something that cuts the gas flow off; is that correct?
A Yes. It senses whether lightning has hit a house and if it has, then the gas flow ceases.
Q Okay. And then there's another one that deals with a shunt for gas appliances?

Page 48

A Yes.
Q Okay. Tell me about that.
A That -- that will change -- that's essentially one of the ways of changing the charge time.
(Exhibit Number 69 was marked.)
Q (BY MS. MaCLEOD) Okay. I'm going to hand you what we've marked as Deposition Exhibit 69, and this is a four-page document that lists your appearances since 1995, correct?
A Yes.
Q And there weren't any dates, at least that I could discern from looking at this. Do you start with the earliest appearance and go to the most recent appearance?
A That's -- that's the order when I start recording them, yes, ma'am.
Q And I noticed from looking at the new CV that you provided that there were some additional -- and I can't remember how many. Was there -- how many additions since providing me with this CV are there on the new CV?
A Are we talking about CV or appearance list?
Q Appearance list. Is this -- okay. I'm sorry. Your appearance list. Okay?
A Okay.
Q Have you provided a new appearance list? Why don't you grab from --

Page 49

A We will -- we can check.
Q Last one I see on Exhibit 69 is Dobson v State Farm?
A Okay. There's one more --
Q Okay.
A -- that's been added.
Q In all of the appearances since 1995, have you ever given a deposition regarding radiant barrier sheathing?
A No.
Q And I assume that's going to be the same, but no trial testimony in regard to radiant barrier sheathing?
A Correct.
Q And as I looked through this, it appeared to me that the first time that you served as an expert in a CSST-related matter was the Hardy v Gastite?
A Yes, ma'am.
Q Do you know when that case occurred? What year?
A Probably 2005.
Q And how much sooner than your involvement with the Hardy v Gastite case were you aware of issues with CSST?
A Four years, maybe five.
Q Okay. So sometime in the 2000 time range is when you first became aware of issues with CSST?

Page 50

A Yes.
Q Did you participate in a class action lawsuit involving CSST?
A Yes.
Q And what was your role in that case?
A I advised the attorneys on what was -- what to ask for in discovery. I gave some technical advice, and I reviewed a lot of documents.
Q Did you provide a deposition in that?
A No.
Q Okay. When did you first learn about the Taylor fire?
A Probably June or July of 2012.
Q And how did you learn about the Taylor fire?
A I believe we got a call at the office.
Q From whom?
A I believe the -- the Ellis & Anthony Law Firm.
Q Do you recall what conversations you had with that person?
A No.
Q Do you recall what you were told about the fire?
A Just that there was litigation involving lightning and a radiant barrier.
Q At the time that you received notice of the Taylor fire, were you already familiar with the TechShield

Page 51

product?
A Generally, yes.
Q Had you been asked by Louisiana Pacific to look at the TechShield product prior to learning about the Taylor fire?
A I'm not going to say that I had, but I'm not going to say that I hadn't. They were relatively close together, as I recall.
Q Was Goodson Engineering ever retained directly by Louisiana Pacific to work on the Taylor case?
MR. ELLIS: Objection.
Go ahead.
A You know, I signed -- the best I can do is that I signed an agreement with Mr. Ellis's law firm, and legally, I don't know how that pans out.
Q (BY MS. MaCLEOD) Okay. Okay. So you had not been put on a retainer by Louisiana Pacific to work on -- on Louisiana Pacific cases?
MR. ELLIS: Objection.
Go ahead.
A No.
Q (BY MS. MaCLEOD) Was the Taylor fire the first time that you were asked to consult as an expert in a matter where it had been alleged that a radiant -- that a radiant barrier product installed in a home was the cause

Page 52

of the fire?
A Okay. Once again, I'm -- I'm unsure, like the answer a minute or two ago.
Q What do you mean?
A In other words, there was perhaps another case that hit about the same time from Louisiana Pacific. I don't know which came first.
Q Okay. Okay. But all in this time frame of -- of when you learned in -- in the July -- June, July 2012 time frame is when that -- that is the general time frame for when you first became aware of Louisiana Pacific product TechShield and allegations that the TechShield was the cause of a fire?
A Yes.
Q I know you did not go out to the scene of the fire in the Taylor house, correct?
A Correct.
Q In the other matter that you're talking about that was in the same general time frame of when you learned about the Taylor fire, did you go out to the scene of that fire?
A Okay. I don't know which case it was; however, to my knowledge, the -- there are several other cases, and yes, I have been to those scenes.
Q Is the Taylor fire the only scene you haven't

Page 53

been to?
A Of the cases that I mentioned earlier, yes.
Q Throughout your career, have you been involved in an investigation in which a home involved or had installed a radiant barrier product and it caught fire?
A Wait. Let -- let's hear the question again, please.
Q I think I understand what -- that -- what you've told me is the first time you investigated a matter that involved a radiant barrier product where it was alleged that the radiant barrier product installed in the home caused the fire was one of these two cases that you've just talked about, either the Taylor fire or the other one that was in the near proximity; is that correct?
A Correct.
Q Okay. And of the four or five cases where you are doing investigation on homes with TechShield installed where it's been alleged that a fire resulted because of the TechShield, how many of those cases involve McDowell Owens?
A All of them.
Q In the four or five cases that you've investigated that have TechShield and it's been alleged that the TechShield caused the fire, how many of them were you -- was it -- someone in the case able to determine that the home was directly struck by lightning?

Page 54

A As opposed to indirectly struck?
Q Yes, sir.
A That -- okay. Okay. I just don't remember.
Q Is that because it's not relevant to the information and opinions and expertise that you're providing in those cases?
A Well, that -- now, that's -- that's a very good answer (sic). And that is indeed part of it, but I -- I have just a number of, you know, investigations going on. I just don't remember them.
Q Okay. Fair enough.
Do you recall -- in any of these four or five investigations where TechShield is involved and it's alleged that the TechShield caused the fire, do you recall any instance where the mechanism in which the lightning from the energy entered the home was through an object other than a metal object?
A I just don't know.
Q Okay. I just wasn't sure if there was something that maybe stuck out in your memory about that.
A No, ma'am.
Q Okay. How many fires have you investigated involving CSST?
A I want to -- so that I understand your question, are you specifically asking where I went to the site or

Page 55

just where I'm doing some work on it as part of, you know, part of an investigation?
Q I'm really -- I'm really interested in the big number where you're just a part of the investigation.
A Close to 200.
Q And then I guess I will go ahead and ask you, of that 200, how many where you've been to the site?
A Probably 120.
Q And of the 200 -- approximately 200 CSST fire cases that you've been involved in, in how many of those was a hole located that was caused by electrical energy from a lightning strike?
A Okay. I want to answer you correctly and -- let me hear the question again.
Q Okay. Yes. Because -- because I understand that there's going to be a difference between electrical damage and mechanical damage, and what I want to focus on is the electrical damage. So of these 200 or so cases that you've been involved in where there's been a fire from lightning -- CSST lightning-induced fire, how many -- in how many of those cases did you find a hole that was caused by electrical energy from a lightning strike?
A Okay. As we sit here, probably -- easily 90 or 95 percent of them.
Q Okay. So that means that in about five

Page 56

percent -- 10 to five -- five to 10 percent of them you've found a hole that was caused mechanical damage?
A Or we didn't find a hole.
Q Okay. Well, then let me ask you that next question. Actually, strike that.
Prior to the Taylor case, have you investigated lightning fires in your career that did not involve CSST?
A Sure.
Q Approximately how many?
A Oh, probably several hundred. That -- that sounds a little high. Between 100 and 200, that's probably closer.
Q And that's not including any of the CSST fires?
A Right.
Q Can you tell me what the materials in a piece of TechShield are.
A Well, OSB with some type of adhesive and then a layer of essentially aluminum.
Q Anything else other than the OSB -- and I can't remember what -- glue and --
A Well, the piece of paper there.
Q A piece of paper as well? Okay.
A Yeah.
Q Okay. So four components to it, the OSB

Page 57

sheathing, a layer of paper, an adhesive and an aluminum laminate, is that --
A Yes, ma'am.
Q Okay. Do you intend to offer any opinions or testimony at trial in regard to the composition or characteristics of OSB sheathing used in the TechShield product?
A Yes, ma'am.
Q Okay. Will you tell me what testimony you'll offer in that regard.
A Okay. Basically, that -- I think there will be no disagreement here. The material is aluminum and as such, with lightning it is subject to skin effect, and that, you know, skin -- skin effect is -- is a factor when dealing with high frequency.
Q Okay. Tell me, so that we just have it, what skin is.
A Basically, it is a electric property of a material that causes the electricity being carried through that material to migrate. Let's say if we had a round wire, it was solid, the majority of the electrical charge would be carried out near the edge of the wire, if you will, say, it was copper or aluminum. The bottom line is you could use a -- a wire that's hollow, like a pipe, and it would perform just as well because none of the electric

Page 58

current is being carried internally inside the -- in the inner portions of the material; very little current carried internally. It's all -- most all out at the edge (indicating). That's skin effect.
Q Okay. And why is that a factor when dealing with high frequency?
A Oh, that's just a property of the material. There are something called eddy currents generated that -- that bring about skin effect and you have to, you know, deal -- deal with it appropriately.
Q And so help me understand how you would deal with it appropriately.
A You're asking where I'm going with that?
Q Yeah. Because I -- I need to -- I want to hear the -- and just so that I understand --
A Yes, ma'am.
Q -- and I can be educated --
A Sure.
Q -- as to what you're -- what it is you're telling me here.
A Okay. Very specifically, Mr. Simmons did a bunch of testing, and he used DC current. He gave a deposition that says skin effect does not apply to lightning, and I brought references with me. They -- skin effect does apply to lightning, and it exactly performs how -- it exactly

Page 59

affects how you perform your test. That's one of the reasons the tests he performed are of no merit.
Q Why is the test he performed of no merit because of the failure to include the skin effect in his testing?
A Well, basically, he said we put in this amount of current, and it brought about this amount of heating. With lightning, you can try to put in a certain amount of current, but it won't happen. The current is carried near the surface of the skin and it's going to limit the amount of current and the amount of heating that takes place. It's a completely different animal.
Q So in regard to this skin effect, what should he have done differently in carrying out his testing?
A Okay. He should have not tried to mix apples and oranges; more specifically, he needed to do pulse testing with a lightning-type waveform.
Q And what's a lightning-type waveform?
A Well, one of them is quoted in 9F- -- NFPA 780, the lightning standard, and it's known as 8 by -- 8-by-20 waveform. It has a certain -- certain shape, and it's what is commonly used to test components to see how they react to lightning.
Q Have you done that kind of testing on CSST?
A No.
Q Why not?

Page 60

A Okay. That would come from, as an example, a lightning lab. I just do not have the capabilities to do that test.
Q Okay. So you haven't done this test on TechShield either?
A Correct.
Q And do you feel that it was not necessary for you to undertake this testing?
A That's right.
Q Why?
A Okay. We know at some point in time, because of the tremendous amount of forces involved with lightning, that building materials are going to fail, be it OSB, be it TechShield. It's a fact of life, with enough energy they're going to fail and be destroyed or catch fire.
Q And that that would include CSST?
A Help me.
Q In your list that you just made, that would include CSST as a building material that's going to fail?
A CSST is going to fail from lightning. It does fail from lightning.
Q Okay. So you know that building materials are going to fail when energized by lightning and therefore, you didn't need to do this test because? That's where you were headed with all this.

Page 61

A Well, we know it's going to fail. What more -- what more can be shown, number one. Number two, building materials making use of aluminum have been used for years. I -- I don't see what change in design, knowing that if you hit a piece of OSB or TechShield with lightning that it's going to eventually fail, I'm not sure where that -- where that gets us. We know that.
Q So is it your testimony that a piece of OSB -- traditional piece of OSB is just as likely to fail as a piece of TechShield with the aluminum sheathing on it?
A No.
Q Which one is more likely to fail more quickly?
A I think it would depend on the circumstances.
Q What circumstances?
A Well, let me -- let me give you an example. There are some cases where energy, electrical energy or heat energy may strike the radiant surface barrier, and the aluminum spreads out the heat (indicating) making it less likely to catch fire. There are other instances where it may hit and, you know, immediately cause it to catch fire.
Q Have you done any testing to determine how the aluminum on the TechShield is going to react in the situation -- those scenarios that you just described?
A No.
Q Why not?

Page 62

A You know, because I know in my heart -- I mean, I just feel this product eventually is going to fail. And knowing that it fails, what -- I'm not sure what -- where that takes us. It is going to fail given enough current.
Q I guess I -- I guess as I sit here my question is -- is why wouldn't you want to know how much more quickly it's going to fail than a traditional piece of OSB sheathing?
A Okay. We don't know that it would fail quicker. It might. It might not. It depends on the circumstances. We don't know the level of insult that's available on a -- on a given fire from lightning. You know, we talked to Mr. Simmons last week. He didn't know how much energy was available. He didn't even know how the energy spread. I'm not being critical of that. It's just we don't know.
Q We do know, though, from sources, from folks that are lightning experts like Dr. Uman that there's a range of electrical energy that is produced with a lightning strike, correct?
A In -- yes.
Q Okay. And I guess -- I guess that's -- I still don't understand why there was no testing performed to determine how quickly the TechShield product would fail when subjected to levels of energy from a lightning strike or from just levels of electrical energy.

Page 63

A How can I help you? I mean --
Q I mean, why -- why did you not feel that any of that was necessary to do that kind of testing?
MR. ELLIS: Asked and answered.
Go ahead.
A Because at some point in time given enough energy it will fail. You could -- as an example, you make the product thicker. Well, then it all of a sudden becomes very expensive. You know, Dr. Eagar quoted NFPA 7- -- 780. It gives the thicknesses in there. We're talking, you know -- you know, 60 to 100 times the metal that -- that's going to be added. How do you improve the design? It -- you've got a very good design now. Having said that, it is going to fail given enough energy.
Q (BY MS. MaCLEOD) If it were 163 times thicker, the aluminum sheathing laminate that is on the OSB, is it going to fail as quickly as the .0one millimeter sheathing that is on the OSB protection?
A Well -- well, it depends on your -- your meaning of failure. Because it can be damaged and then all of a sudden you have large globules of the aluminum that can -- that can come off of there, because you have a lot of aluminum available. So while it may be thicker it may become more dangerous from that.
Then you had the structural problem of all

Page 64

of a sudden we have roofing that -- it's very difficult, we have to redesign houses so they can hold this. It -- it -- it -- it's not just a simple solution of, well, we make it thicker and it's safer. That's not the case.
Q Have you done any testing in regard to what happens to TechShield when energized by lightning if you put thicker aluminum on it? Have you done any of that testing to see what the effects of putting a thicker layer of aluminum on the OSB would do?
A No, ma'am.
Q And why not?
A Well, I read Dr. -- Dr. Eagar's report. I know what NFPA 780 says. I know what thicknesses you have to get to. And if -- if you -- you know, Dr. Eagar wants it to be -- if he follows 780 -- very thick and that's just not practical. Besides which could make it, in some instances, not as safe.
Q And when you say it's not practical, you're talking about expense-wise?
A Well, that's number one. Number two, you now have to re- -- redesign your structure to carry more weight.
Q So other than the economies of adding more metal and the -- determining what it does to the structure, your other testimony is that if you added that much aluminum you

Page 65

could create globules of melting aluminum that could be more hazardous?
A Yes.
Q Anything else that increasing the thickness of aluminum might do to this particular product?
A You know, aluminum is pretty good at storing heat, and so it's going to change the time -- the time constant in your house. Meaning, that if the hot -- if the attic gets very hot and you've got this big thickness of aluminum, all of that sudden that aluminum stores that energy. And then at night, you know, when the sun goes down you still have all this aluminum up there dissipating heat into the attic. And so it would -- it could -- you could very well damage severely the energy savings you were trying achieve.
Q Have you done any testing at all in regard to improving the safety of TechShield?
A No.
Q I mean, as I understand it, in regard to testing you have -- other than looking at the quantification for aluminum and looking at the particular wires, electrical wires from the Taylor house, you've conducted no other testing; is -- is that correct?
A You know, there are -- there are other cases where we have looked at evidence. To be fair to you that

Page 66

would be included. But other than that, I think your -- your question is correct.
Q And when you say looked at evidence you're talking about electrical wires and that --
A (Nods head affirmatively.)
Q Okay.
A Yes, ma'am.
Q What is the -- we -- I think I initially started asking you about OSB, but we turned to aluminum. If you will tell me what the composition and characteristics of the aluminum on the radiant barrier sheathing for TechShield are.
A Well, essentially, it's pure aluminum. And it -- within the limits of our machine we measured essentially what the in the industry would be called four nines, 99.99 percent pure. It's all we found was aluminum.
(Exhibit Number 70 was marked.)
Q (BY MS. MaCLEOD) Let me hand you what we've marked as Exhibit 70. Is this the testing that you're referring to?
A Yes.
Q And this testing was done on May 29th, 2012?
A Okay.
Q Does that give you any better sense of -- did you -- well, strike that. Did you do this testing on the

Page 67

aluminum of the TechShield specifically for the Taylor case?
A No.
Q Okay. Why did you end up doing testing in which you looked at the quantification for the aluminum that is applied in the TechShield product?
A Okay. A couple of reasons: I had been reading McDowell Owens's papers, that's number one. And number two, that is the -- the brand of radiant barrier that the local hardware store sold -- or building supply.
Q So does that mean, though, before you had any conversations with Louisiana Pacific you were interested in this product called TechShield?
A Absolutely.
Q What got you interested?
A Because I -- frankly, Jean McDowell came by the office one day and -- unrelated matter -- and he said, you know, he said, we're very concerned about the radiant barrier. He said, we've done -- you should read our papers on it, so I did.
Q After you read those papers on the radiant barrier, did you make any attempt to contact Louisiana Pacific about this?
A No.
Q And after you read those papers but before you

Page 68

were contacted by Louisiana Pacific, you did a quantification test on the aluminum involved in the TechShield product?
A Yes.
Q And you did that because you were curious about what was going on with this product?
A Well, in part.
Q What was the other part?
A Well, I read something put out by Mr. Simmons that said, you know, they did some calculations to make sure they were on base as a sanity check, and that they felt sure it wasn't pure aluminum. Part of my company used to do what's known as infrared thermography where we go in and measure temperatures using emissivities. And it struck me as odd that this paper would say that they were using pure aluminum, because the best way to make a radiant barrier work is to have emittance very low. And normally, that means very pure aluminum. It just -- it just struck me as odd.
Q Hypothetically speaking, if McDowell Owens agreed that the aluminum in the TechShield product was 100 percent aluminum, based on your review of the papers that you've read that McDowell Owens has published and based upon sitting through Mr. Simmons's deposition, how would that affect any of the test results or conclusions that McDowell

Page 69

Owens came to, if you know?
A Okay. The -- the sole factor of aluminum purity would have no bearing except that was his basis for saying, hey, we know what we're doing, we did a sanity check, the numbers come out right. And -- and one, they don't come out right; and, two, it made me wonder does he understand or realize what's important about a radiant barrier, and that's bringing the -- the emissivity way down. That would be the start of it.
Q Anything else?
A Well, just the whole nature of his testing.
Q Okay. But I mean -- I'm sorry.
A Okay.
Q I thought that would be the start of it in regard to his testing, but I'm talking about the aluminum, the -- the -- whether it's 100 percent aluminum or not does not affect the conclusions or results that he reached in his paper, correct?
A Substantially, that's right.
Q Have you ever asked the question of Louisiana Pacific whether they've made any changes in the aluminum that they have used over the years on their TechShield product?
A No.
Q So as you sit here today you don't know whether

Page 70

the aluminum that was used during the manufacturing process in the 2008 time frame is the same quantification of aluminum used in the product that was made during your test on May 29th, 2012?
A Well, I think I do know.
Q What do you know?
A That it -- that it would be as close to pure as can be.
Q And what do you base that on?
A Sure. Basically, when you start making aluminum alloys, they're not going to have the same emissivity. And then the emissivity numbers are going to go way off. You won't be able to meet the test requirements.
Q Do you know whether Louisiana Pacific was doing emissivity testing back in the 2008 time frame?
A I -- I have test documentation. I don't know what date it shows. That would be my best answer.
(Exhibit Numbers 71 and 72 were marked.)
Q (BY MS. MaCLEOD) I am going to hand you what I've marked as Exhibit 71 and Exhibit 72.
A Okay.
Q And I'm sorry. I didn't mark it on my paper, but the one that's dated April 6th, 2010, is that 71?
A That's 71.
Q Okay. And Exhibit 72 is dated November 10th,

Page 71

2011?
A Correct.
Q And are these reports the reports that you were just referring to that you had seen some testing?
A Yes, ma'am.
Q Okay. Who provided these reports to you?
A These were e-mailed to me by Mr. Murphy.
Q Have you asked or not if there was any testing of the TechShield product that predates the April 6th, 2010 test report that we've marked as Exhibit 71?
A No.
Q So as you sit here today now knowing what these dates are, do you have any evidence that they were doing any testing of their product back in 2008?
A No. In terms of emissivity, no.
Q Okay. What about in terms of any other testing that they were doing?
A I -- I wouldn't know.
Q Okay. I mean, it -- it's -- you know, other than these two tests that we've marked as 71 and 72, have you seen any other test reports done by -- that were either done by or on behalf of Louisiana Pacific?
A No, ma'am.
Q Would the age or how the TechShield was stored have any effect on the quantification test results?

Page 72

A You might -- the answer is yes.
Q How would it affect the quantification test rules?
A Okay. You -- you might detect some oxygen. Aluminum forms -- readily -- aluminum oxide on a very -- on the very surface of it. Just the nature of aluminum. You put it in air and it turns to aluminum oxide. If there had been some oxygen show up it wouldn't have surprised me.
Q But in this result you didn't see any oxygen show up that was a large enough quantification that it made it on to this table?
A Right.
Q Because this table only considers the K value, correct?
A Correct.
Q Okay. That doesn't mean that there aren't other trace elements that are measured that just aren't reported when you print these out?
A You are -- you are right.
Q Okay. Have you done any research into the effects of oxidation on radiant barrier product -- products?
A No.
Q Would oxidation of a radiant barrier product, based on your knowledge, have any effect when the aluminum

Page 73

was energized by lightning?
A Okay. Aluminum oxide is an insulator; however, it's -- it forms at the very, you know, smallest level. You know, I think we're talking just several layers of atoms, certainly not a great deal of thickness. So you -- I don't think you would see a substantial effect, no.
Q Okay. When it was energized by --
A Correct.
Q -- electrical current from a lightning strike?
A Yeah. Aluminum wiring does fine except at the connections where you have the oxide. But along its layer where you have the oxide it -- it still continues to perform quite well.
Q Well, when you get to those ends where it oxidizes and acts as an insulator, how is that affecting the flow of the electrical current through that aluminum? Does it create a -- a choke, an impedance? Does it --
A It -- it can create high-resistance connection, yes.
Q And what -- if you've got a place where there's a high-resistance connection, what is the import of that? What happens when it becomes energized by electrical energy?
A Basically, it -- it -- it heats up.
Q More so than if that oxidation wasn't there?

Page 74

A That's right.
Q And heat is part of the fire tetrahedron, correct?
A Yes.
Q Did you do any testing in the Taylor case to determine the level of oxidation on the TechShield in the Taylor home?
A No.
THE VIDEOGRAPHER: I'm sorry, Ms. MacLeod, it's about to stop.
MS. MaCLEOD: Let's go off the record.
THE VIDEOGRAPHER: Going off the record at 11:18.
(Break taken from 11:18 a.m. to 11:24 a.m.)
THE VIDEOGRAPHER: We're back on the record at 11:24 with Tape 3.
Q (BY MS. MaCLEOD) All right. I want to get back to talking about the particulars of the components that make up the TechShield, if we can.
A Okay.
Q I asked you earlier if you were going to provide testimony and opinions in regard to the composition and characteristics of the OSB sheathing that's used -- that makes up a part of the TechShield. If you will, tell me what the composition characteristics to which you'll

Page 75

testify at trial are.
A I'm just going to testify about -- about the aluminum.
Q Okay. So you're going to provide no testimony about the composition or characteristics of the OSB sheathing?
A Well, to the extent that it's wood and wood can catch fire, if -- I -- when struck by lightning, if that forms the basis of expert testimony, I -- yes. But no, I mean, nothing -- predominantly, I'm testifying about the -- the aluminum. But that, you know, wafer board, OSB board, plywood, lots of wood building materials are -- you know, they will catch fire when struck by lightning.
Q Do you know what the ignition temperature is for the OSB sheathing that's used in the TechShield product?
A Well, it's cellulistic -- cellularlistic. It's a Class A combustible. It should be around 450 or 500 degrees, but no, I've not measured it.
Q Have you done any research to determine what the temperature is?
A No.
Q Is it your opinion that the OSB sheathing manufactured and used in the TechShield product is a good conductor of electricity?
A The wood itself?

Page 76

Q Uh-huh. The OSB sheathing.
A So that I understand, you're just talking about the wood?
Q Right. Right.
A Okay. It's not -- it's not a particularly good conductor.
Q It's -- isn't it a fact that wood is actually considered an insulator?
A It -- it often is an insulator, yes, electrical insulator. Let me -- let me change that. No one -- well, except when the electric chairs were built, no one really used wood, per se, as an -- as an insulator, but it does have that characteristic.
Q What testimony, if any, will you provide in regard to the composition and characteristics of the paper product used in the TechShield product?
A Nothing, per se, with regards to the paper except -- you know, I -- I've been to several houses where you can see kind of a scorching effect, but the paper is not burned. It looked like the aluminum had ablated from lightning, but there was no combustion to the paper. But the -- that would be it.
Q Do you know what the ignition temperature is for the paper utilized in the TechShield?
A No.

Page 77

Q Do you consider paper to be a good conductor of electricity?
A Not dry.
Q Do you consider it to be a good conductor of electricity when it's wet?
A It's not great, but it'll -- the -- the water -- the moisture there can carry electricity, yes.
Q And you would consider it a good conductor when it's wet?
A Not a good conductor, but it -- it will conduct.
Q In regard to the glue or adhesive that's used in the TechShield product, what testimony, if any, will you provide in regard to the composition or characteristics of that adhesive?
A None.
Q Do you know what the ignition temperature of the adhesive used in the TechShield is?
A No.
Q Do you know whether the glue or adhesive used in the TechShield is a good conductor of electricity?
A I would seriously doubt that it is.
Q Okay. And then we've talked about aluminum already and we will talk about it more later, but can you tell me what the ignition temperature of aluminum is.
A Ignition temperature? It's got to be I believe

Page 78

above its vapor point. I've got -- I brought that -- it's in the CRC handbook. I brought that. It's here someplace.
Q Does 1,200 degrees Fahrenheit sound like -- or is the ignition temperature different than the melting temperature?
A It's a lot different.
Q Okay. What is the melting temperature of aluminum?
A It depends on the alloy, but roughly, you know, 1,200 degrees Fahrenheit.
Q And is aluminum considered a good conductor of electricity?
A Yes. Let me back up. That -- I guess that would depend who you ask. Relative to copper, it's all right. Relative to some metals, it's very good. It's a relative term, but in terms of the common metals used for building wires, for constructing wires it's number two behind copper in -- you know, in terms of conductivity.
Q Is there any doubt in your mind that the radiant barrier product that's at -- that was installed in the Taylor house was, in fact, Tech- -- TechShield manufactured by Louisiana Pacific?
A You know, I have -- I have no opinion. I was never at the site.
Q Okay. Once you were alerted to the fact that the

Page 79

Taylor fire existed in June or July of 2012, what under -- what investigation did you undertake to determine what happened in this fire?
A Basically, I just -- I read reports.
Q What reports did you read?
A McGraw and Mr. Simmons.
Q Did you read Dennis Scardino's report?
A You know, at some point in time, I believe I've seen it, but I -- I don't have it in my file.
Q Did you read Tom Eagar's report?
A Yes.
Q Have you ever had any conversations about the Taylor case or TechShield with an individual named David Dellwo?
A Yes.
Q What conversations have you had with Mr. Dellwo?
A I may have just mis-answered the question. I have spoken with David Dellwo. Did you ask me is it in regards to the Taylor case?
Q Have you had -- yes. Have you had any communication with Mr. Dellwo in regard to the Taylor case?
A No.
Q Have you had any communications with Mr. Dellwo in regard to TechShield?
A Yes.

Page 80

Q And how many times have you talked to Mr. Dellwo in regard to the product TechShield?
A Okay. I have seen him several times on -- he has come to several fire investigations, so -- so perhaps two or three times I have met him and we have talked.
Q And are those discussions involving the site scene where you are or are they discussions involving the product TechShield?
A There have been both.
Q Okay. What I really want to talk to you about is the discussions that you've had with Mr. Dellwo about the TechShield product.
A Okay.
Q If you would -- you said two or three times?
A Well --
Q Help -- I know it's hard to remember if you've talked to someone two or three times what specific conversation was had during which. Just give me an idea of the conversation and the content that you've had discussions with Mr. Dellwo about as they relate to TechShield.
A Sure. I met Mr. Dellwo and we started talking. And I asked him, I said, I've read a report that says y'all's aluminum is impure. And I says, I don't see how it will work if it's impure. And he says, it won't work if

Page 81

it's impure. It's got to be essentially pure aluminum.
And he -- he told me -- he said, matter of fact, some -- some states or mun- -- municipalities have requirements that certain emissivities be met, and I said, you know, I would like to know what those are. And so he prepared and sent me an e-mail in addition to him stating that California was such a place. And then he stated in -- I believe in Austin he said, you know, while they don't come out and say, you know, these requirements have to be met, they have a -- a type of energy code that without a product like TechShield you won't meet the energy requirements required in Austin.
So essentially, it's -- it's a mandated building product. And I said, here's my card, can you send me some information, and he sent me an e-mail outlining --
Q Which I've marked as Exhibit 73.
(Exhibit Number 73 was marked.)
A Yes.
Q (BY MS. MaCLEOD) That's the e-mail you're talking about?
A That's it.
Q Okay. Other than this e-mail from Mr. Dellwo to you, did you do any other corresponding with Mr. Dellwo via e-mail?
A No.

Page 82

Q And this e-mail was in response to a conversation y'all had had at the Erica Jones inspection in Humble, Texas in late July, correct?
A Correct.
Q Who else was there on-site from Louisiana Pacific at the Humble, Texas site inspection?
A When you say from Louisiana Pacific, are you speaking as an employee -- are you asking what employees were there?
Q On behalf of Louisiana Pacific.
A On behalf.
Q Or let's do it -- let's do it in two because I see where you're going with that. Employees of Louisiana Pacific.
A I believe that's it.
Q Just Mr. Dellwo?
A Yes.
Q Okay. And then who else was on-site on behalf of Louisiana Pacific besides yourself?
A Mr. Scardino and a gentleman from Vinson & Elkins.
Q Not Mr. Murphy?
A No.
Q And I think you already covered this, but this Humble, Texas involved TechShield --

Page 83

A Yes.
Q -- correct?
A Yes.
Q And did you see evidence in the Humble, Texas case of damage to the TechShield as a result of electrical activity from a lightning strike?
A I think there was a lightning strike there. Evidence that I might term as being electrical activity, if there was any, would have been -- as I recall it was destroyed.
Q Did that house burn down?
A Yes.
Q To -- I mean, there wasn't --
A It didn't burn to the ground.
Q Okay. Did the roof burn off of it?
A Some of it.
Q Did the portion that was part of the pathway to ground burn? I mean, was there any of that left for you to observe?
A I -- I don't recall.
Q Okay. In this e-mail from Mr. Dellwo he mentions the American Plywood Association PS2, dash, 10 performance standard; do you see that?
A Yes.
Q And he provided that to you, correct? This is --

Page 84

this is an attachment?
A That's what it says, yes, ma'am.
Q Did you -- have you seen how thick that document is?
A No.
Q Okay. Did you -- did you actually review that document?
A As we sit here today, I can't tell you that I did.
Q Okay. And it doesn't appear from this e-mail that he provided the ASTM testing that had been performed on behalf of Louisiana Pacific, correct?
A Correct.
Q After you read this e-mail from Mr. Dellwo, did you make any inquiries about any other test results?
A Well, there had to have been a conversation had with -- with someone, perhaps Mr. Murphy, but regardless of how it happened I was forwarded the -- the test data.
Q Did you have any discussions with Mr. Dellwo about why the radiant barrier foil must be attached directly to the underside of the roof decking?
A No. Well, if we did I don't remember it.
Q Okay. Let's go ahead and look at the exhibits that we've marked as 71 and 72. Let's focus on 71 right now. And I understand from your testimony and your role,

Page 85

you didn't play any role in asking Louisiana Pacific to undertake any of these two tests?
A That's right.
Q Have you had any discussions with anyone at Louisiana Pacific about why they undertook this testing?
A No.
Q And other than this ASTM E408 test report, you've never seen any other ASTM E408 test report, correct?
A Correct.
Q And you don't know as you sit here today whether any others exist?
A Correct.
Q Do you know if such testing like the ASTM E408 is mandatory testing for a manufacturer to perform?
A The extent of my knowledge would be what I told you that Mr. Dellwo told me, and then the e-mail that he sent me. That would be it.
Q So you don't -- as you sit here today you don't know whether such testing is mandatory?
A Correct.
Q Can you tell me what the ASTM E408 standard is.
A Not without the standard in front of me. I mean, we know it's a test for emittance, but...
Q Okay. Do you know what an emit -- emittance test is?

Page 86

A Yes.
Q What is it?
A Well, it -- basically, you're comparing energy reflected with energy absorbed and everything. When you go back to the very beginning of how this -- these measurements are made you start with what's known as a black-body radiator, and everything is compared to the black-body radiator.
Q What is -- I don't understand. I'm sorry. What is a -- what is a black-body radiator?
A It's no -- no part of a car. Basically, when you deal with black-bodies, you're dealing with things that are, in essence, the color of black and which absorb energy at all wavelengths equally. It has to do with -- when I say all wavelengths -- colors.
Q Okay. I'm really sorry. Tell me why you told me that, because I don't understand what you're trying to tell me.
A The bottom line is you're asking about emissivity.
Q Right.
A In its simplest terms, it's -- what you're determining is how much energy is absorbed and how much is reflected. That -- that's...
Q Okay.

Page 87

A That's it.
Q Does anything with the emittance testing conducted in -- that we see test results here for tell you anything about what happens to the aluminum laminate when it's subjected to electrical voltage?
A No.
Q Does it tell you anything about the aluminum lam- -- aluminum laminate when it's subjected to electrical energy from a lightning strike?
A No.
Q Has this -- the -- the information that's provided in these test results played any role in forming the basis of any opinion you intend to offer at trial?
A I -- I'll just tell you that if -- if someone were to suggest that an alternate material be used, as Mr. Simmons did -- he mentioned one particular product -- based upon my reading of the characteristics of that product, they would not meet what Mr. Dellwo is saying; as an example, has to be done in California, the .05 emittance. The -- the stuff that Mr. Simmons spoke about last week has a lot higher emittance values.
Q Do you know what the emittance requirements are for North Carolina?
A No idea, ma'am.
Q And it is a state-by-state determination?

Page 88

A Well, it is a jurisdiction-by-jurisdiction determination.
Q Okay. And how do you know that?
A Well, because I know that certain progressive cities in Texas like Austin has an energy code. I know basically if Mr. Dellwo is correct, and I believe he is, that California has one. I know there are other states that don't.
Q Let's look at Exhibit 72. And this is a report that's dated November 10th, 2011, correct?
A Okay.
Q And it has to do with testing for -- to the ASTM C1371 standard, correct?
A Yes.
Q And do you know if an emittance test is different from an emittance measurement?
A These -- these are essentially two different tests.
Q Well, I know they're two different tests because they're coming to two different -- applying to two different standards.
A Yes.
Q But do you know why one would use test and one would use measurement?
A No.

Page 89

Q Do you know what the purpose of undertaking such testing in accord to ASTM C1371 would be?
A You'er asking me why we test in a certain way? Is that what I'm --
Q Well, tell me what -- tell me what the standard is. ASTM C1371, what is that standard?
A I've got it here. I'd have to go through it. Without -- without going through it, you know, I can't tell you what exactly it is except it is a measure- -- a measurement of emittance.
Q And as with the other ASTM testing undertaken on behalf of Louisiana Pacific, you didn't play any role in getting Louisiana Pacific to undertake this ASTM C1371 testing, correct?
A No.
Q This testing was undertaken after the Taylor fire that occurred on October -- excuse me -- August 29th, 2011, correct?
A Yes.
Q Okay. Do you know why L.P. undertook this testing?
A Other than what's in Mr. Dellwo's, you know, e-mail, no.
Q Okay. Do you know if this was the first time that Louisiana Pacific had undertaken such testing in

Page 90

accord to ASTM C1371?
A No.
Q Have you made any inquiries to find out whether there were other testing to ASTM Standard C1371?
A No.
Q And as with the other testing we just discussed, do you know if this testing is mandatory?
A I -- I can -- I can repeat what's in the e-mail. That's it.
Q Okay. So you don't know if it's mandatory?
A Correct.
Q Okay. Do you know as you sit here today whether there's any testing of a radiant barrier product that is mandatory?
A Not other than what I've already told you.
Q Which is? Because --
A What came from Mr. Dellwo's -- you know, he told me, he said, you know, this stuff has to be tested to meet certain energy codes, and then he sent me an e-mail.
Q Okay. Does the -- do the test results in Exhibit 72 tell you anything about what happens to TechShield or to the -- excuse me -- to the aluminum in the TechShield when it's subjected to electrical voltage?
A No.
Q Does it tell you anything in regard to what

Page 91

happens to the aluminum in the TechShield product when it's subjected to energy from a lightning strike?
A No.
Q Okay. Did any of the information in this report for ASTM C1371 form or assist in forming any basis of any opinion identified in your report?
A No.
Q Okay. Other than the testing that was the quantification of the aluminum, the two tests that we just looked at for ASTM E408 and ASTM C1371, is there any other testing -- and I guess I should add to that testing done by McDowell Owens -- are you aware of any other testing other -- outside those that I just named?
A In regard --
Q Of the TechShield product?
A Thank you. And -- and the answer -- the answer is no.
Q Okay. We did all get together and meet and undertake some testing of the electrical wires from the Taylor home.
MS. MaCLEOD: Actually, why don't we go off the record for a quick minute, if that's okay with everyone so that --
MR. ELLIS: Sure.
MS. MaCLEOD: -- y'all can take a break, and

Page 92

I'll -- I will get all this stuff marked and it will go faster.
MR. ELLIS: Okay.
THE VIDEOGRAPHER: Going off the record at 11:53.
(Break taken from 11:53 a.m. to 12:08 p.m.)
THE VIDEOGRAPHER: We're back on the record at 12:08.
A Okay.
Q (BY MS. MaCLEOD) All right. We have been talking about testing that's taken place in -- in this case. I now want to turn your attention to the testing that we undertook on September 27th, 2012 in which the electrical wiring was examined, the electrical wiring from the Taylor house was examined or a portion of it was, correct?
A Correct.
Q We did -- while we were there, we did a CT scan of the 18-39 wire, correct?
A A CT scan?
Q Uh-huh.
A I didn't remember that.
Q You don't remember a CT scan?
A Well, I saw that. The answer is no, I don't.
(Exhibit Numbers 74 through 78 were marked.)

Page 93

Q (BY MS. MaCLEOD) Okay. Let's look at -- I have divided into four packets several pictures. If you will, look at the first of those, which are Exhibits 74, 75, 76, 77 and 78.
A Okay.
Q These are the various pictures that were taken of wire that we labeled Number 25.
A Sure.
Q And I guess if you will help me understand, we looked at -- we had two wires. We had a 14-2 electrical wire and we had a 14-3 electrical wire, correct?
A Yes. Yes, ma'am.
Q We looked at three sections of the 14-2 electrical wire there at the end where it had separated from its other half?
A Yes.
Q And those were wires 25 -- we labeled them 25, 26 and 27, correct?
A Correct.
Q Okay. And the exhibits that I just handed to you that were 74 through 78 are what we ended up with after we looked at, took pictures, ran tests on that particular wire, the 25 wire.
A Correct.
Q Did you find any evidence on the wire that we

Page 94

labeled 25, any evidence of electrical activity on that wire?
A Not in my opinion.
Q Okay. What we were looking at was to determine whether the end piece was electrical or mechanical damage, correct?
A Yes.
Q And did you determine that it was mechanical damage?
A Yes, ma'am.
Q Let's pick up the next packet.
A Okay.
(Exhibit Numbers 79 through 83 were marked.)
Q (BY MS. MaCLEOD) And it is Exhibits 79, 80, 81, 82 and 83. And these are what we ended up with at the conclusion of the testing in regard to the wire that we labeled 26, correct?
A Correct.
Q Okay. And again, that came from the 14-2 wire that we examined?
A Yes.
Q And is -- was your conclusion the same, that the damage to this wire that we reviewed was mechanical and not electrical?
A Yes. I mean, there -- there was characteristics

Page 95

I couldn't figure out, but I do not believe this -- this is electrically arced.
(Exhibit Numbers 84 through 88 were marked.)
Q (BY MS. MaCLEOD) Let us, if we can, pick up the next packet --
A Okay.
Q -- which is Exhibit 84 --
A Okay.
Q -- 85, 86, 87 and 88.
A Yes.
Q This is the information that we ended up with after we undertook the testing on September 27th, 2012, correct?
A Correct.
Q And it was looking at the third and final piece of that 14-2 wire and we labeled it Wire 27, correct?
A Yes, ma'am.
Q Okay. And did you find any evidence of electrical activity on Wire 27?
A No.
Q Again, the damage that we looked at was mechanical damage in your opinion?
A In my opinion, yes.
(Exhibit Numbers 89 through 91 were marked.)
Q (BY MS. MaCLEOD) Okay. Let's look at the final

Page 96

packet which are Exhibits 89 --
A Okay.
Q -- 90 and 91.
A Correct.
Q This is the test results from an examination that we did of the ground wire which was a part of the 14-3 wire that was collected from the scene of the Taylor fire, correct?
A Correct.
Q Okay. Did this 18-39 wire show any evidence of electrical activity?
A Yes.
Q Did you also look at the -- this 14-3 wire would have had four wires running inside the insulative jacket, correct?
A Correct.
Q Did you have an opportunity to look at the other three wires in this 14-3 wire sample that was brought from the Taylor home?
A Yes.
Q Okay. Did you find any evidence of electrical activity on any of the other three -- would they be hot wires, the other three hot conductors within that insulative jacket?
A Well, no, they wouldn't.

Page 97

Q Okay. So did you find any evidence of electrical activity on any of the other three wires that were inside that electrical -- or insulative jacket?
A No.
Q Okay. So the only electric activity that you located was on that ground wire of the 14-3 --
A Yes.
Q -- bundle? Okay. You had the opportunity -- and I know you're not a metallurgist, but you've had the opportunity in your practice to look through -- at -- at various pieces of metal that you stick into the SEM machine, correct?
A Correct.
Q As well as the EDX machine?
A Correct.
Q And we did that on September 27th, correct?
A Yes.
Q When we looked at -- how many areas of electrical activity on that ground wire did you locate during the examination?
A I guess it would depend how you -- you could say that there was just one or you could say that there were two that -- there were very close together. But in a -- you know, a very short section of that wire, there were -- it depends whether you want to call it one or two, but

Page 98

certainly there was something going on there.
Q Okay. And when you say very close together, what are you talking about? Inches? Feet?
A Oh, oh, oh, we're talking -- we're talking less than an inch.
Q Okay. And other than that area that you're talking about, you saw no other evidence of electrical activity on the 14-3 ground wire?
A Right.
Q And where we -- where you saw the evidence, we actually sectioned that piece of the ground wire out, correct?
A Correct.
Q Okay. And the photographs that we have in Exhibit 89 are photographs taken where we have rotated that area of evident -- electrical -- evidence -- the evidence of electrical activity, you know, basically 360 taken photographs of it, correct?
A Correct.
Q Okay. Did the copper wire, ground wire that we looked at from the 14-3 fire alarm circuitry, did you see any evidence of aluminum spatter or aluminum sparking on that wire?
A No.
Q Can you tell me what spatter is.

Page 99

A Well, some people call it splatter or spatter. It's a metallurgical term, but basically it's -- it is a result of arcing. It's when you have molten metal that fly off and then hit and essentially re-solidify.
Q Okay. Do you know if there's a difference in the definitions between spatter and splatter?
A According to Dr. Eagar, it depends where you're educated.
Q Okay. But the import of all of that we just talked about is you saw no evidence of aluminum spatter or splatter on the 14-3 ground wire?
A That's right.
Q Do you have an opinion that you will offer at trial about whether the electrical energy from a lightning strike that arced from the aluminum laminate of the TechShield to the ground wire -- do you have an opinion as to whether you would expect to have seen aluminum in the SEM or EDX test results?
A I do have an opinion.
Q Will you tell me what it is.
A Sure. And the answer is it can go both ways.
Q Okay. And help me understand that, why it can go both ways.
A I've tested quite a few lengths of CSST with -- or we've purposely created a fault with energized wires

Page 100

that we knew were copper, and then create a hole in the stainless steel, in the CSST. Sometimes we have copper depositions, sometimes we don't. And we have seen that on other instances where we have analyzed -- where we had arcing, like on steel arced essentially to copper. And sometimes when we look at the steel cabinet or something like that, we'd find copper, sometimes we wouldn't. So the fact that we did or does -- did not, I've seen both -- both circumstances.
Q Okay. Does it seem a reasonable explanation to you that if there was aluminum spatter that came from the aluminum laminate of the TechShield, that it embedded into the insulation of that conductor and then was burned away by the fire?
MR. ELLIS: Objection.
Go ahead.
A I think that you're saying is the -- there were -- insulation in the way is such that the aluminum never really impinged on the copper, that -- that would seem reasonable.
Q (BY MS. MaCLEOD) Based on what you saw in any of the test results in regard to this 18-39 ground wire that was part of the alarm circuitry or in any investigation that you undertook in this case, is there any way for you to determine whether the arcing originated from the

Page 101

TechShield or whether it originated from the ground wire?
MR. ELLIS: Objection.
Go ahead.
A Not that I'm aware of.
Q (BY MS. MaCLEOD) Okay. Do you have a -- an opinion about the probable direction of the arcing of the electrical energy?
A In terms of polarity? The answer is no.
Q Okay. When you say polarity, I was really talking -- I mean, I think when you're saying as I understand it -- I was talking about the directional flow from it being from the aluminum laminate to the --
A (Nods head affirmatively.)
Q Okay. That's what you were talking about?
A Yes, ma'am.
Q Okay. Are you aware of any tests that have been undertaken where it was demonstrated that the electrical energy that was applied to the radiant barrier sheathing arced and resulted in a flame?
A Say that again.
Q Have you seen any test results where it's been demonstrated that applic- -- application of electrical energy to a radiant barrier sheathing aluminum laminate resulted in an arc in a flame?
A An arc in a flame. Not that I'm aware of.

Page 102

Q Okay. Let's take arc out of there. Have you -- are you aware of any tests where it's been demonstrated that electrical energy was applied to the radiant barrier sheathing and a flame resulted?
A Yes.
Q Okay. And have you seen -- were all those tests where you've seen that conducted by McDowell Owens?
A Yes.
Q Have you seen anybody else conduct such a test?
A No.
Q And you haven't conducted such a test?
A Correct.
Q Have you ever -- like just so -- at no point in any of this have you run electrical current through a piece of TechShield?
A That's right.
Q Okay. By covering the SEM testing and the quantification testing, we've covered all the testing that Mark Goodson or Goodson Engineering has done in regard to TechShield?
A That's right.
Q And I know you may not have seen it, but have you ever heard that anyone from Louisiana Pacific has done any such testing where an electrical current has been applied to the TechShield and a flame has resulted?

Page 103

A I'm not aware of that, ma'am.
Q Have you seen any testing or -- yeah. Have you seen any testing where electrical current was applied to radiant barrier sheathing and it resulted in an arc?
A Can you re-ask that again.
Q Yeah. Sure. Have you seen any evidence -- or that's a different question. Have you seen any test results where electrical energy was applied to a radiant barrier product and an arc resulted?
A No. Other than what McDowell Owens has done in their testing, no.
Q Okay. Have you seen evidence in the field where TechShield has become electrically energized and an arc has resulted?
A Okay. Let me -- let me tell you just so we're very clear, I have seen instances where in my opinion ablation has occurred, like there might be a nail and then a rounded -- like a halo effect where the aluminum was missing. I've seen that several times. And then the same around the -- the so-called hurricane clips where there would be an absence of metal. And I wasn't there at the time that it happened, but presumably that's from arcing. Certainly, that could be that type of manifestation.
Q Because ablation is a form of arcing, right?
A Arcing -- well --

Page 104

Q Or arcing leads to ablation?
A It can, yes.
Q And if I were to run or conduct a live test whereby I ran electrical energy through TechShield to illustrate that it catches flame?
A Yes, ma'am.
Q What would you expect to happen?
MR. ELLIS: Objection.
A Okay. It would depend on the level of current and the duration of time. Those are, you know, the two big variables.
Q (BY MS. MaCLEOD) So the higher the energy placed into it, the quicker it will get a flame; is that correct?
A If you get a flame, yes. It -- the -- the higher the energy is, the quicker you would get a flame, all things being equal.
Q Okay. All things being equal leaving the voltage, the energy -- or the energy applied to the radiant barrier, the longer it's applied, the more likely you are to have heating and have a resulting flame?
A Yes, ma'am.
Q Have you seen any test results where -- I'm sorry. I'm thinking about how -- how to ask you this question. Have you seen any tests undertaken in regard to TechShield in which an impulse electrical current has been

Page 105

applied to the material?
A Okay. I know only what Mr. Simmons testified to last week regarding a 20-millisecond test. That's the extent of my knowledge there.
Q In regard to an impulse test of 20 milliseconds, does -- what's your opinion on that in regard to criticisms of his testing?
A 20 milliseconds is, in rough numbers, 1,000 times too long.
Q Is it your opinion that if -- strike that.
I think I understood this from your earlier testimony, but I just want to make sure that -- that I have done my job and gotten the question asked. Are you in a position to say that there's no set of circumstances where the aluminum laminate of TechShield will be energized and cause a flame even if briefly? Again?
A Please.
Q Okay.
A Thank you.
Q Is it your position that there is no set of circumstances in which the aluminum laminate of TechShield will be energized and cause a flame?
A No.
Q That's not your position?
A No.

Page 106

Q So it is possible that the aluminum laminate of TechShield can be energized -- if energized, can cause a flame?
A Given enough energy and it -- it can, yeah.
Q So an energy from a lightning strike could cause a flame?
A That's a different question. There are -- there are certainly strokes and amounts of energy that can bring it about. At some point in time it will fail, but I -- I can't quantify that number for you.
Q Okay. But I guess -- I mean, will it cause -- when you say fail, are you talking about causing a flame?
A Yes. I think eventually you will light it, get enough current, and it is a function of time, you will -- you will ignite it.
MS. MaCLEOD: Well, I'm in a good position to stop because I'm finished with my testing questions for now.
MR. MURPHY: We noticed the "for now."
MS. MaCLEOD: For now. Well, I hate to make any promises.
Should we break for lunch?
MR. ELLIS: We can go off record, yeah.
THE VIDEOGRAPHER: Going off record at 12:33.

Page 107

(Lunch break taken from 12:33 p.m. to 1:36 p.m.)
THE VIDEOGRAPHER: We're back on the record at 1:36 with Tape 4.
Q (BY MS. MaCLEOD) Okay. I have a few more sort of housekeeping things because we kept getting off on tangents on more important stuff. But I just want to make sure that I've covered it all. So we were talking about who you had talked to in regard to your investigation at the Taylor house. Did you ever have an opportunity to talk to an individual named Brian St. Germain?
A No.
Q Have you had an opportunity to speak to Laura Proctor?
A No.
Q Have you ever had an opportunity to speak to Dennis Scardino about the Taylor fire?
A Sure.
Q And how many times have you spoken to Mr. Scardino about the Taylor fire?
A Probably twice.
Q And what kinds of things did y'all talk about?
A Excuse me. He told me that -- essentially, what I remember is he saw evidence of what he thought was ablation with no real fire around it. He said, you know, I

Page 108

think that the house probably got hit by -- by lightning. We talked at length about arc through char as to whether that can be distinguished or not. And then he -- he said the difficulty -- and we talked back and forth on this point. The difficulty in trying to evaluate a fire such as this is that where you believe you have an area of origin, you have nothing left to examine.
Q Did y'all have any further discussions about that, about the difficulties when you have no materials left in the area of origin?
A Oh, I think that's -- that's been an ongoing discussion, yes.
Q And tell me why it is that that makes it hard to evaluate the fire.
A Well, what you have is an area of origin with no materials present. If one presumed the lightning hit there, you don't know if it energized the TechShield sufficient to bring about ignition there. What you do know is that you do have a fire there. Is it possible the fire just occurred because there was enough energy in the lightning to bring about discombustion of the wood, that would be number one. Number two, in terms of the ablation that he spoke of, you know, I think he confirms that there was lightning present. But in the areas he described to me, he said -- he said essentially that it looked more, you

Page 109

know, like it was scorched there, but he didn't see any combustion and certainly no evidence that a fire started there or a fire spread from there.
Q Do you know what it means to be scorched?
A I know how -- I know how I took it. Basically, that you had ablation. You had evaporation of metal from, you know, essentially very fast and high heat, but no real ignition of materials where the fire would take off.
Q And what we're talking about now, is this really sort of outside the purview of your expertise?
A Yes, ma'am.
Q Okay. Other than talking about ablation, the lightning hit the Taylor house and arc through char and the difficulty evaluating fire with an area of origin that has no materials left to examine, anything else that -- that you remember talking to?
A No. And I want to make sure that what I just answered, when you said it's outside of your area of expertise, we're talking about the area of origin. The fire certainly -- I know quite a bit, as an example, on arc through char.
Q And I actually was just limiting it to the current discussion that we were having to scorching.
A Okay. That's fine.
Q What kind of conversations did y'all have about

Page 110

arcing through char?
A Well, basically there is no definitive test on arc through char. It -- the -- the underlying question is did this arc start a fire, is it the result of a fire. And there is -- you know, I said there is no chemical or metallurgical test regarding whether you can look at arc through char and determine whether or not it's arc through char. You -- it can't be done.
Q Does arc through char typically occur when you have arcing between two conductors within an insulated jacket? Is that typically where you find arc through char?
A That, and then you have -- you have heat sufficient to paralyze the insulation so it becomes a char -- yes.
Q Okay. Is it your opinion that the 14-3 wire that experienced electrical activity was not the result of arcing through char?
A I will tell you this: I think it's lightning-related, that it arced to something. I can't tell what it arced to. I don't think anybody can, but I -- I -- that is not classically what I would call arc through char. Arc through char implies time and the bringing about of carbon because of the heat of an existing fire. I don't believe what we saw was classically known as arc through char.

Page 111

Q Did you have any conversations with an individual named Mark Loose of Exponent?
A I have not.
Q In reaching the opinions that you provided in your report, was it necessary that you know that Mr. Scardino determined that lightning directly struck the Taylor home at the chimney cap?
A It -- so that I'm clear, is the emphasis on the word "directly" or is that -- is that important to your question? I'm trying to --
Q Yeah. No. I see it, because you've already explained that before. Let me ask you this: In forming the opinions that you've formed in your report, was it necessary for you to know that lightning struck the Taylor home and entered the premises through the chimney cap?
A No.
Q In forming any of the opinions set forth in your report, was it necessary for you to know that Mr. Scardino determined that the dryer along the conductive path was not the cause of the fire in this case?
A No. You know, you could -- I -- I'm thinking back three -- three minutes ago.
Q Okay.
A Something about ablation. I mean, my report certainly talks about ablation. You weren't -- I don't

Page 112

think you were trying to limit me there, but I just want to make sure you were or were not.
Q No. Honestly, the -- my question was limited to scorching.
A Well, that -- that would go hand in hand I think with ablation. In the sense that, you know, I've seen instances where we had ablation but no scorching. I -- and I don't even remember the question. I just want to make sure that I've not confused any issues.
Q So did -- is what you were just telling me, though, is that you think that scorching and ablation are the same -- occurred at the same time?
A Well, what I'm saying is in -- in -- in my mind, the scorching is evidence of heat damage which ablation brings about. But it may bring about some discoloration, but no evidence of -- no evidence of combustion. Paper didn't start on fire.
Q Typically, when you see ablation, do you see scorching?
A Well, I guess that's why I'm bringing it up, to make sure we're talking about the same thing. I have seen ablation where we had a darkening of areas. It's very common. As an example, a lot of energy comes down (indicating) and carbonizes stuff. I've seen on air-conditioning ducts as an example. But not -- but it

Page 113

was all metal parts, nothing there to burn. Certainly it was scorched, but nothing really burned. There was no paper or anything like that present, but it's got black -- black shadows, black -- what sometimes is called flash, and to me that's evidence of scorching.

Q Okay. In reaching any of the opinions in your report that you provided, was it necessary that you know that Mr. Scardino determined that the mechanical systems in the house were not the cause of the fire?

A Oh, no.

Q In reaching any of the opinions in your report, was it necessary for you to know that Mr. Scardino determined that given the location of the fire in the attic, slash, ceiling that the electrical plans -- electrical appliances in the house were not a direct cause of the fire?

A I don't think it was necessary for me to know that.

Q In reaching any of the opinions that you provide in your report, was it necessary for you to know that Mr. Scardino determined what the building materials in the location of the origin of the fire were, and that they included asphalt-impregnated fiberglass shingles mechanically to TechShield with nails, TechShield wood rafters, fiberglass batten insulation with paper backing,

Page 114

plastic baffles for ventilation and gypsum board pane secured to the wood rafters?

A I don't think that helps me in terms of my opinions, no.

Q In preparing -- in providing any of the opinions in your report, was it necessary for you to know that Mr. Scardino determined that the TechShield was, in fact, energized during the lightning event?

A Well, I think that that is important.

Q In rendering any opinions that you provided in your report, was it necessary for you to know that Mr. Scardino determined that the primary path to ground ran from the chimney cap through the chimney ductwork across the TechShield to the dryer vent and dryer ductwork to the dryer and out to the ground?

A No.

Q In preparing your report and providing any of the opinions in your report, was it necessary for you to know that Mr. Scardino determined that the TechShield was electrically connected to both the chimney ductwork and to the dryer ductwork?

A Oh, I think so.

Q Okay. Why was it necessary for you to know that Mr. Scardino determined that the TechShield was electrically connected to both the chimney ductwork and to

Page 115

the dryer ductwork in the Taylor home?

A Okay. Basically, what I'm assuming is that we -- this -- this fire is from lightning, and I -- I would suspect that -- that there would be a path. It is not a surprise. The fact that the TechShield carried some of the electrical current, no -- no surprise there.

Q And what opinions that you provide in your report does knowing this information support?

A Let's pull a report.

Q I was going to say we did mark it. Will you just read the exhibit number. Is it Exhibit 66?

A Yes, ma'am.

Q Okay.

A Well, in Opinion 2(a), I point to the power and nature of lightning and, you know, point out that it's going to make a conduction path. And from what I understand, Mr. Scardino was saying that some of that path may well have been on the TechShield?

Q Anything else that you see?

A No, ma'am.

Q We talked earlier about spatter. Is spatter something that happens during the ablation process?

A That -- that's where I would -- that's the only time I would expect it in that -- is when that ablation is occurring, yes.

Page 116

Q Okay. And when spatter occurs, the directional force of the spatter occurs in numerous directions, correct?

A Yes, ma'am.

Q It's not just metal pieces falling in accord with gravitational principles, correct?

A So what you're saying is they're energy expended that shoots the spatter out in all directions, the answer is yes.

Q Okay. It doesn't just fall straight down?

A No.

Q Then let me get gravitational principles in there. All right. Can you tell me what impedance is.

A How technical do you want it?

Q Start on a light end and we'll see if we need to go further.

A Okay. Impedance is a characteristic of a material that weighs against the eas- -- eas- -- well, the easy flow of electrons through that material.

Q Okay. Are certain metals rated for their impedance value?

A Well, they -- I'm not going to say they're rated -- well, it depends on the form of the metal. Like certainly wires are and, you know, copper wire is rated different -- a little bit different than, say, aluminum

Page 117

wire, but yes.
Q So in -- in that scale of determining imped- -- impedance of a metal, where would aluminum fall? Is it going to have a high impedance or a low impedance?
A Okay. Well, I'll confuse you a little. Impedance, technically, is an AC term. It can mean DC resistance also, but generally when we think of impedance, we think of what's known as real power and reactive power, real numbers and imaginary numbers. Skin effect weighs in there, so does something called phase shift. Having said that, aluminum is a good conductor of common 60 Hertz electricity. Of all the metals that we know about, it is the least inexpensive. It is not -- could we stop for -- for a minute?
MS. MaCLEOD: Yeah. Let's go off the record for a minute.
THE VIDEOGRAPHER: Going off the record at 1:55.
(Break taken from 1:55 p.m. to 1:56 p.m.)
THE VIDEOGRAPHER: Going back on the record at 1:56.
A I believe the question was in regards to the impedance of aluminum?
Q (BY MS. MaCLEOD) Correct.
A Okay. Of the metals that are easily affordable,

Page 118

aluminum is the best for carrying power line frequency with the exception of copper. Having said that, copper is much more expensive. It doesn't compare at all to the metals of silver and gold which are excellent conductors, but, you know, practicality says that we can't afford those metals.
Q Okay. Well, we talked earlier about oxidation on aluminum serving as an impedance, correct?
A Yes.
Q Okay. What happens to voltage at an impedance in a metal? And if you want to use aluminum that would be great.
A Well, any time you have a voltage -- well, a current -- I'm sorry. Any time you have a current making a pathway through a metal that has some impedance, theoretically heat is created.
Q Would you have an impedance as electrical energy from a lightning strike that moves from one piece of TechShield to another where there are no metal clips?
A Well, assuming you have enough energy to meet the Paschen's criterion, you're going to arc across there. And I'm sorry. What was the question?
Q Would it be considered an impedance at that location?
A Well, I mean, any time you have current flow you have an impedance, but that is -- that is a change in

Page 119

impedance and it does rise, and you're going to have arcing there.
Q Would that be the same if there were metal clips that were holding two pieces of TechShield together?
A Okay. The metal clips, I've seen steel and I've seen aluminum. Depending on the cross-section areas, you're going to get perhaps an impedance there, certainly from the steel because it's not a good -- a conductor. Iron is not as good a conductor as aluminum, that's number one. And then number two, that's going to relate to the size of the impedance is, does the shield -- I'm sorry -- does the clip actually touch the shield or is there enough gap with the metal clip where there's -- where there's a little space in there. That -- that's going to determine whether or not you've got continuity for a direct path or you're going to have arcing occur. Then we have to throw in the frequency involved. Skin effect can be a big deal depending on the metal.
Q What is the skin effect going to be in a piece of aluminum laminate that is .0one millimeters in thickness?
A Well, there's -- that would have to be calculated as some -- you look at skin -- what's known as skin depth. You look at the frequencies involved, are there going to be numerous -- you -- you do a Fourier decomposition and you can figure it out. It's a -- it could be a several-hour

Page 120

mathematical problem, but it can be done.
Q Okay. And you haven't done that in this particular case?
A No.
Q So as you sit here today, you don't know what the skin effect of aluminum with a thickness of .0one millimeters is?
A Well, I know what it is. I can't -- no, I can't give you a -- I can't quantify it.
Q Okay. Do nails that are typical for construction, and in particular ones that would secure asphalt shingles to a piece of TechShield, have iron -- typically have iron in them?
A Yes.
Q And have you done any research or any investigation into what kind of nails were used in the construction of the Taylor roofing system?
A No.
Q Do you know what kind of nails were used to connect the metal flashing around the chimney ductwork to the TechShield?
A No.
Q And if a metal has object -- sorry. If a metal object has iron in it, is it considered a ferromagnetic object?

Page 121

A Well, it -- it depends.
Q On what?
A Well, it depends on the -- the exact composition. And the reason I say that, stainless steel, as an example, is full of iron and yet depending on whether it's in austentic form, A-U-S-T-E-N-T-I-C, or martensic, M-A-R-T-E-N-S-I-C, or ferritic, F-E-R-R-I-T-I-C, depending on which phase it is, that's going to determine whether or not it's ferromagnetic.
On the other hand, if it's, you know, just plain steel, for lack of a better word, it's probably going to be ferromagnetic.
Q Okay. Is it your opinion based on what you know about the typical nail used in construction as to whether that nail is considered a ferromagnetic object?
A We'll make it real easy. You can take a magnet and you look for spare nails, that way you make sure nobody gets a flat tire. It's magnetic, yes.
Q Okay. If an item or object is ferromagnetic in nature, is that going to have any effect on the behavior of energy from a lightning strike?
A Absolutely.
Q Tell me what that -- how is it going to affect that behavior?
A Iron generally serves as what's known as an RF

Page 122

choke, spelled as it sounds. It can serve as an impedance and it can -- some conditions, I suppose theoretically could limit the current.
Q But if it acts as a choke or an impedance, you're going to have a greater amount of heat generated at those locations, correct?
A Well, that's a different issue.
Q Help me understand why that's a different issue.
A Okay. You're -- for a -- for DC power and DC current, you generate heat any time you have an impedance because it's a resistance. With AC however, one of the properties of AC power is it goes through an inductor, which I believe is what you're speaking of. The voltage and the current at that inductor would tend to be 90 degrees out of phase. The amount of work done is -- energy dissipation of watts is known as voltage times current times basically the power factor. At 90 degrees the power factor is zero, no work is done, no heat created.
Q And so that's with an AC current, no heat created? Or with a DC current, no heat --
A No. That's with -- that's with AC just going through a perfect inductor. There is --
Q And you said inductor, right?
A An inductor --
Q Okay.

Page 123

A -- which is an im- -- it's a type of impedance which is what a choke is. A perfect one brings about no heat.
Q And if it is a DC current, it's going to bring about heat?
A Well, and there is a DC component to lightning, so that -- the DC current will generate heat just due to the resistance of the material has nothing to do with the inductance.
Q Only with the resistance?
A That's right.
Q Tell me if you will, because I don't believe we've talked about resistance and how it's different from inductance.
A Okay. Resistance, when a current flows through it, AC or DC generates heat. It is just a -- an -- it is a form of impedance. It opposes electron flow. Inductance not only opposes electron flow, but it's an energy storage device and it causes a phase shift. It causes voltage and current to be 90 degrees out of phase. And when they're out of phase, they do no work. Inductance is very much frequency-related. All things being equal, you increase the frequency, you increase the voltage drop across an inductor.
Q Simple as that?

Page 124

A That's just the start.
Q All right. Let me ask you, and I think you've touched on this, but is an electrical -- is the electrical energy from a lightning strike considered AC or DC or both?
A Well, it's considered impulse. It's got -- would have a DC component, and then it would have -- if you did a decomposition, it would have multiple AC components.
Q Is it electrical resistance measured by Ohm's Law?
A Well, the unit of measure of electrical resistance is Ohms, and then there is such a thing as Ohm's Law, yes.
Q Do you intend to offer any opinion at the trial of this matter in regard to Ohm's Law?
A I don't think so.
Q Is conductance the inverse of resistance?
A Yes.
Q And is it the true -- is it also true to say that resistance is the inverse of conductance?
A Exactly.
Q And conductance is measured in siemens?
A That's exactly it.
Q And if you will, tell me what siemens represent.
A It is the inverse of resistance. I mean, I -- I'm not trying to appear as a smart-aleck. I mean, that's

Page 125

literally what it is.
Q Okay. Do you intend to offer any opinions at the trial of this matter in regard to siemens?
A No. And having said that in prior answer also regarding Ohm's Law, I mean, those -- those weighed heavily in Mr. Simmons's calculations in my estimation. I -- in some testing he did. I would comment on his testing, so I would say that.
Q Do you know the siemens value for aluminum?
A No.
Q Do you know the siemens value for stainless steel Type 304?
A No.
Q If I had a piece of stainless steel and I had a piece of aluminum, and both of them are the same size, the same length and they're electrically parallel, which one would carry more current, the stainless steel or the aluminum piece?
A They're wired and parallel?
Q Yes.
A Okay. DC?
Q Well, let's do it first with DC and then with AC if -- if there's a distinction to be made.
A DC aluminum is going to be a much better conductor than stainless steel. And at low frequencies

Page 126

that is also true, that aluminum is a better conductor than stainless steel. At high frequencies you'd have to throw in the skin effect, and I haven't done that calculation.
Q And that last part you were talking about AC, right, with -- or?
A Yes. High frequency AC, yes.
Q Okay. In your opinion, is there anything predictable about lightning?
A Very little.
Q Is frequency predictable?
A Okay. You've used the term frequency. Does that refer to harmonic content or how often it hits someplace or how often it occurs? I'm just not sure.
Q Yeah. No. I can see -- let's answer both of those questions.
A Okay. Frequency, in terms of how often something hits, there is such a thing as an isokeraunic, K-E-R-A-U-N-I-C drawing. They're essentially compilations of thunderstorms. They show lightning density. I mean, lightning, how often it hits, is somewhat predictable in a large area given our history knowledge of that particular area.
In terms of harmonic content, I -- what you can say is there's rapid transitions that manifest themselves in what we call DI, slash, DT. They're all

Page 127

usually pretty rapid, but the data by Dr. Uman and -- suggests that harmonic content is -- you know, varies widely from event to event.
Q And what about is there any predictability in how lightning will travel from cloud to ground?
A I -- I think it demand -- or the question is best answered -- relatively speaking, I don't think it is predictable. I mean, certainly it happens.
Q Okay. Do you know what the state of North Carolina building code says in regard to the installation of radiant barrier products?
A No opinion, ma'am.
Q Do you know what the state of North Carolina building code says in regard to protecting systems from being energized by lightning?
A No opinion.
Q Have you ever been before the state of North Carolina building code council or building code board before?
A No, ma'am.
Q Do you know if anyone from Louisiana Pacific ever sought approval from any government agencies in the state of North Carolina to distribute TechShield in North Carolina for use in residential homes?
A No knowledge.

Page 128

Q Do you know what standards apply to Louisiana Pacific's TechShield product?
A Other than the ones outlined to me by Mr. Dellwo, no.
Q Okay. And those are the APA PS 210 Standard and the two ASTM standards, the E408 and C1371 that we talked about today?
A Yes. And I need to amend an answer. You asked me 10 minutes ago which -- at high frequency which was the better conductor of electricity at high frequency, AC stainless or aluminum. It's -- the answer is aluminum.
Q That's what I took away from it, so -- but thank you for clarifying.
Do you know whether there are any applicable ANSI standards to radiant barrier products?
A I do not.
Q Do you know how ANSI standards are developed?
A Generally.
Q Can you tell me.
A Well, there has to be a need and there has to be a sponsoring organization, and then a code committee is put together. I say a code committee, a standards committee. And they try and write out a standard that -- presumably, it does not favor one manufacturer over another. And it's normally a consensus process that everybody comes to

Page 129

agreement on, what's in the code. The code is voted on. It may have -- code committee might consist of representatives from industry, manufacturers, distributors, perhaps end-users. Certainly, with building materials, building code officials also play a role in that.

Q Okay. Will you be offering any opinions at the trial of this matter that ANSI standards are not needed for the radiant barrier product?

A No.

Q And I should probably just ask you. Are you going to be offering any opinions at the trial of this matter that ANSI standards are needed for the radiant barrier products?

A No. No.

Q In regard to the ASTM standards, is there an ASTM standard that regulates the electrical properties of radiant barrier products?

A Not that I'm aware of.

Q Is there an ASTM standard that regulates the ignitability of a radiant barrier product?

A Well, in general a lot of building materials are subject to a test called the Steiner Tunnel, S-T-E-I-N-E-R, and in general that's also known as ASTM -- I believe it's called EASTM -- I think it's E but then followed by 84.

Q Tell me a little bit about that standard if -- if

Page 130

you know.

A Sure. It's -- it's a -- it's a tunnel that you put a piece of building material in. And what I remember is you apply like a flame for a certain amount of time or certain amount of heat, and then you measure how far the -- the charring progresses. It's a relative standard. The scoring is from zero to 100. I don't remember what zero is except it used to be asbestos. Obviously, that's gone the wayside. But 84 is -- I'm sorry -- 100 is the fire spread associated, I believe, with Red Oak, and flame spread is measured as to that relative scale zero to 100.

Q And so that's testing the ignitability of a product?

A Flame spread.

Q Flame spread?

A Yes.

Q How -- how is flame spread different from ignitability?

A I'm sorry. The answer is I don't know if there is a test for ignitability, and ignitability is just how easier or hard something -- how difficult it is to ignite.

Q And codes that are applicable to a particular product are minimum standards, correct?

A Yes.

Q And a manufacturer, if they want, can decide to

Page 131

impose standards that are higher than what the codes provide, correct?

A Yes.

Q They can't, however, impose standards -- decide to impose standards that are less than what the codes provide, correct?

MR. ELLIS: Objection.

Go ahead.

A Well, they can. They just won't get their listing.

Q (BY MS. MaCLEOD) Is it your opinion that compliance with the current applicable codes for radiant barrier products are sufficient?

A Oh, I have no opinion.

Q Any other codes, standard or instruction that would apply to radiant barrier that we haven't already talked about?

A No, ma'am.

Q Okay. Let's turn to your report --

A Sure.

Q -- Exhibit 66.

A Okay.

Q And if you'll look at the very front it talks about the things that were provided. It says that there was a fee schedule provided. I didn't see one, but I did

Page 132

see in here where you talk about your hourly rate, and that actually may be your entire fee schedule which --

A For me, that's it.

Q Okay. And today, when you brought materials -- I'm looking at Page 2, I should tell you --

A Okay.

Q -- at the materials reviewed.

A Okay.

Q Today you brought me several different references, things like NFPA 921 sections and things like that that you used, correct?

A Sure.

Q Okay. The -- if you'll look down the list fourth from the bottom, it says, "USFA 2002 report on lightning fires"?

A Yes.

Q Is that a part of -- did you produce that?

A Yes.

Q It's in that file?

A It's here today. I --

Q Okay.

A Yeah.

Q All right. Let's turn to Number 1 under opinions held.

A Sure.

Page 133

Q And actually, if -- if -- it appears that Opinions 1, 2, 3 and 4 concern your opinions that involve lightning --
A Yes.
Q -- is that fair?
A Yes.
Q In Opinion Number 1, you state that lightning can produce currents of 200,000 amperes of current?
A Yes.
Q How many volts is that, 200 (sic) amperes, if you know?
A It's -- one can't -- you can't -- can't deduce one from the other.
Q Okay. You can't make that calculation?
A No.
Q Okay. Is it true that while lightning can produce amperes of that level, that not every strike actually produces 200,000 amperes of current?
A Absolutely.
Q And, in fact, Umans says that amperes can be as little as 1,000 amperes, correct?
A You know, I remembered -- I thought it was 2000 on the low end, but maybe it's 1,000. It's -- it's certainly not -- it's much less than 200,000.
Q If you had it in a report or a paper that you had

Page 134

written, you wouldn't disagree with whatever was written in that --
A Oh -- oh, no. Oh, no.
Q Okay. And does Uman also say that the average amperes for a lightning strike are in the range between 10,000 and 20,000?
A Probably. That -- that's -- that's -- those are certainly good numbers.
Q Okay. When you talk about in the second sentence of Paragraph 1, that you're trying to put that number in perspective, it says, "Many houses that are built have incoming service rated at 200 amperes."
A Yes.
Q "About 1/1000th of the current of 200,000 ampere lighting" -- "lightning strike." Do you know -- when you're talking about incoming service, you're just talking about the power that's being provided to the house?
A Yes, ma'am.
Q Okay. And do you know what the typical volt or voltage is for the incoming service to a home?
A Well, in the United States it's 120, slash, 240 three wire.
Q And then in the last sentence of Opinion 1 you say, "The level of electrical current produced in a lightning strike is capable of causing substantial damage

Page 135

to many items and not just a radiant barrier product." Did I read that correctly?
A That's right.
Q Okay. By making that statement, you're not saying -- or by making that statement you are saying that a radiant barrier product can sustain substantial damage due to a lightning strike, correct?
A Well, I didn't say substantial, but yes, it can be damaged. It absolutely can.
Q Okay. What is the point you're trying to make by asserting that statement?
A The fact that we have damage on a radiant barrier is -- one, it's not surprising, and it's not surprising that other items can also be damaged by lightning. Radiant barrier is just one of many materials that could be damaged by lightning.
Q Okay. Is it your opinion that lightning is attracted to metal?
A It depends on the circumstances.
Q What circumstances does it depend on?
A Well, lightning likes to seek a, you know, a return path, if you will. Take an area of flat ground and you ground a flagpole and run it up 100 feet, there's a good chance that lightning that's nearby, it's going to strike that flagpole. And certainly that's been the

Page 136

experience with all the testing at the Empire State Building which has a, you know, real high antenna on it.
Q And is that part of the sort of electrical principle that energy is going to seek the path of least resistance?
A Yes.
Q If a particular piece of metal is grounded, is it going to be more attractive to a lightning strike than a piece of metal that is not grounded?
A All other things being equal, yes.
Q All right. If you will turn to Paragraph 2 --
A Okay.
Q -- you state that lightning melts metals and carbonizes insulating surfaces. What does it mean carbonizes insulating surfaces?
A Basically, that the -- the lightning can generate heat at the site of an insulator and make that insulator fail to be an insulator anymore since it becomes a conductor.
Q Did you put that in this opinion because you think there is an example of that happening at the Taylor home?
A No.
Q Did you see any evidence of a carbonized insulating surface at the -- in the evidence that was

Page 137

provided in regard to the Taylor home?
A Well, we certainly have damage to insulation on wiring, particularly the -- the 14-3. That might be an explanation for that -- how lightning damaged that wire, that conductor.
Q That there was a carbonized insulating surface? How -- explain that to me.
A Yeah.
Q Because I'm not sure I followed you, and I apologize.
A Okay. Most insulators, absent something like glass, aluminum oxide, but common wiring insulation -- and absent asbestos which used to be used or mineral insulation -- the rubbers and the plastics all can be damaged by heat. They have carbon in them, and that carbon is bound through a process called pyrolysis. That heat can cause that insulation to fail and it can become conductive. It turns to carbon.
Q And it -- if it -- are you telling me anything -- is that another reasonable explanation of how the damage to the 14-3 ground wire could have occurred?
A Sure. Whatever it arced to, and we don't know that, but we just -- we know that there was electrical charge through there. And charge normally doesn't go through insulation unless you got a high voltage on it.

Page 138

You cause the insulation to break down.
Q Do you know what the voltage rating for the insulation on that 14-3 wire was?
A I didn't test it, but there is a standard for that.
Q Okay. Do you know if -- if -- do you know what the standard is?
A Well, it's 600 volts.
Q Okay. Do you know if -- if in reality most of those insulating properties are actually -- can withstand a much greater level of voltage?
A Yes.
Q Do you have an idea of what that level of voltage is?
A Sure.
Q What is it?
A It's 3 to 4,000 volts.
Q Do you know the level of voltage that is attributed to your typical lightning strike?
A It just depends on the distance. It can be billions of volts; that -- that is not uncommon.
Q Okay. And have you defined Paschen's Law for me?
A No.
Q Will you?
A Yeah. It's spelled P-A-S-C-H-E-N, apostrophe, S.

Page 139

Paschen's Law essentially defines at what point air will break down so that it becomes a conductor. If you have two metal plates and they have a voltage between them, no current flows until the -- what's known as the Paschen criterion is met. You have to exceed the voltage breakdown strength of that air, so that all of a sudden we have enough energy for the voltage to jump the gap. That's an arc. That produces aluminum discharge with -- you know, which is what you see.
The distance, if you were to bring two plates closer and closer together (indicating), you'll essentially reach a point called a Paschen distance which no matter how close you get the voltage will not jump. And then the distance that it will jump and the distance, that Paschen distance, is a function of whether it's a vacuum, whether it's air or nitrogen, whatever the air is in between them, whatever the molecules are. That in a nutshell is Paschen's Law, Paschen's criterion.
Q Okay.
MS. MaCLEOD: Why don't -- I think we're -- we're pushing our time limit. Why don't we take a break, go off the record for a minute.
THE WITNESS: Okay.
THE VIDEOGRAPHER: Going off the record at 2:37.

Page 140

(Break taken from 2:37 p.m. to 2:50 p.m.)
THE VIDEOGRAPHER: We're going back on the record at 2:50 with Tape 5.
Q (BY MS. MaCLEOD) Mr. Goodson, we were looking at Exhibit 66 which is your report, and we were looking at Paragraph or Opinion 2 which is Bullet 2 in your report.
A Yes.
Q And in the last sentence of that report, you state that the conductive path can be created with or without the presence of a radiant barrier?
A Sure.
Q In the Taylor home, the TechShield was, in fact, the primary conductive path through that home, correct?
A It -- it -- it could have been, yes.
Q Okay. If Dennis Scardino opined that it was the primary path of the electrical energy from the lightning strike, do you have any reason to disagree with that opinion?
A No.
MR. ELLIS: Objection.
Go ahead.
Q (BY MS. MaCLEOD) Is it your understanding of lightning that it typically chooses more than one path to ground?
A Yes.

Page 141

Q And do you have any evidence of the energy from the lightning strike choosing other paths to ground in addition to the TechShield?
A No.
Q Whether or not it chose other paths to ground doesn't affect any opinion you have to offer in this case, does it?
A Correct.
Q Is that because even if it chose another path to ground, there was only one origin -- area of origin for the fire, correct?
A Well, to my knowledge, there was only one area of origin, but you -- you know, you very well could have had, as an example, current flowing through the TechShield, say, at one point and then dividing and going multiple ways, including the dryer and including another path.
Q Do you know if the dryer was along the pathway to ground that was electrically connected to the TechShield?
A My -- from what -- from what I understand it is, yes.
Q Okay. We talked a few minutes ago about the well-known principle that energy -- electrical energy seeks the least -- least resistant path to ground?
A Yes.
Q As a product designer working with metals, is

Page 142

this a point that is commonly known among product designers that work with metal?
MR. ELLIS: Objection.
A That -- that it --
Q (BY MS. MaCLEOD) Just the basic principle that electrical energy is going to go follow the least resistant path to ground.
MR. ELLIS: Same objection.
A Well, that's a -- that's a -- that is a different question. It will follow multiple paths or it can follow multiple paths; however, the bulk of it and sometimes all of it will be the least resistant path.
Q (BY MS. MaCLEOD) Well, let me ask this then, and you may not have an answer for it, but is it fair to say that someone who is designing a product in which metal is involved ought to be aware of that principle that electrical energy is typically going to follow the least resistant path to ground?
MR. ELLIS: Objection.
A No.
Q (BY MS. MaCLEOD) No. Why not?
A I think it would depend upon what they're designing. If they're designing a drill bit, there is no reason at all to -- for electricity to be involved. It would just be the nature of the product.

Page 143

Q If they're designing an OSB board with an aluminum sheathing on it that they're going to cover the entire roof of a structure with, is that something that they ought to have considered in the design of their product?
MR. ELLIS: Objection.
A I don't -- I don't think so.
Q (BY MS. MaCLEOD) Okay. Why not?
A You know, because there are numerous other building materials out there which, as an example, guttering, aluminum-backed insulation which is put in attics. You know, those of us who are up in years can remember, you know, lots of houses being built with tin roofs, and I seriously doubt that -- and when I call them tin roofs, they're steel roofs with tin plate on them, galvanize it. I seriously doubt that was ever considered. It was -- it was just functional.
Q Do you agree with me that a tin roof is potentially thousands of times thicker than the aluminum laminate that's used in a piece of TechShield?
A No.
MR. ELLIS: Objection.
Go ahead.
Q (BY MS. MaCLEOD) Do you know how thick the aluminum laminate used in the TechShield product is?

Page 144

A Yes.
Q How thick?
A One mil.
Q Is that the same thing as saying .0one millimeters?
A Oh, I wouldn't -- I wouldn't say that.
Q Okay. Have you done that measurement yourself?
A No.
Q What leads you to believe that the aluminum laminate on the TechShield is one millimeter thick?
A A conversation with -- first off, it's not one millimeter thick. I believe I said one mil.
Q Okay. So what's the difference?
A That's a thousandth of an inch.
Q A thousandth of an inch. Okay. I'm sorry. That's just me not understanding that --
A No. And --
Q -- the various measurements.
A Yes.
Q Okay.
A No, I have not made that measurement.
Q Okay. And you said you learned that from, you thought --
A I believe that came from Mr. Dellwo
Q So let me ask you this: Is the one mil -- you

Page 145

may have answered this, I just don't remember -- is that a different measurement from saying .01 millimeters?
A That's different.
Q Okay. How different is it?
A Quite a bit different.
Q Okay. Which one is thicker?
A As we sit here I couldn't tell you.
Q Okay. You mean between those two measurements you can't tell me which one is a thicker measurement?
A Oh, I can sit here and calculate it, yes, but --
Q But don't know off the top of your head --
A Right.
Q -- which one is thicker? Okay.
All right. Let's look at Paragraph 3.
A Yes.
Q Essentially, in Paragraph 3 you have admitted that you did, in fact, observe damage to the radiant barrier from electrical energy, correct?
A Yes.
Q Okay. But then you say immediately after that in the second sentence, "But with no evidence of sustained combustion"?
A Yes.
Q What is combustion?
A Combustion's where you burn something.

Page 146

Q And what do you mean by using the term "sustained combustion"?
A In other words, didn't -- didn't catch on fire and burn.
Q Okay. But is saying combustion different than saying sustained combustion?
A You know, probably not. The instances that I'm thinking of, we had certainly no evidence of fire. We had nails, and then all around there was paper backing, but, no, you know, no -- no soot.
Q Are you talking specifically about the Taylor home?
A No.
Q Okay. Let's talk about the Taylor home because I think it can be confusing if we start talking about the others, because what I really want to know is whether you saw any evidence of combustion regardless of how long it was sustained at the Taylor home --
A I -- I -- I --
Q -- on the TechShield.
A I'm sorry. I didn't mean to interrupt.
Q That's okay.
A I'd have to see the pictures.
Q Okay. Have you not seen those pictures already?
A Well, I -- I have seen numerous pictures. I just

Page 147

don't remember them all.
Q Okay. If you saw pictures would you have provided them along with your file, any pictures that you had?
A No.
Q Why not?
A Because the -- the pictures I'm talking about are in a cloud.
Q Do you know where those pictures came from besides the clouds?
A Ma'am, I don't recall.
Q Okay. I guess what I want to ask you to do, because I really want to understand what evidence you've looked at in assessing that there was no sustained combustion. I want to know what you're basing that statement on, because I know you haven't been to the scene, so you're going to have to rely on photographs? --
A Okay.
Q -- correct?
A You need to re- -- read carefully -- and I'm not trying to lecture you.
Q No. No. Please --
A Read --
Q If you can explain it to me, please do.
A Read Paragraph 3. I never talk about this

Page 148

residence.
Q At all?
A At all.
Q So that paragraph doesn't have anything do with the specifics of the Taylor fire?
A I think that's -- you know, that's -- that's perhaps a matter of debate. All I'm saying is that I have seen this on houses, this phenomenon where there is no combustion and there is ablation, and it -- the fire certainly didn't start there and it didn't take off. Yet we -- we know that there was electrical energy there from lightning.
Q But in regard to the specifics of the Taylor home, there's nothing that, in regard to Paragraph 3, that you'll be offering at the trial of this matter?
A Right.
Q Okay. Is ablation considered a form of combustion?
A No.
Q And why do you say that?
A Ablation is really a form of evaporation, just reach essentially a boiling point.
Q Do I understand correctly that when you're talking in Paragraph 3 about general terms, that you draw no distinction between combustion and then sustained

Page 149

combustion?
A Yes, ma'am, that's fair.
Q Okay. There's no time frame associated with sustained combustion?
A No.
Q And I apologize if you've answered this too, but just tell me that -- what's the significance when you have ablation and you find with the TechShield product that the paper still remains?
A Okay. The significance is it demonstrates that there are times that lightning hits and does not cause a fire; therefore, it begs the question, where we have nothing really to look at because it's burned away, was the fire caused by the TechShield being damaged by the lightning or is this just a fire where there was enough energy that the OSB without the TechShield would have started a fire on its own. We don't know.
Q What about the idea of the fact that when there's ablation and there's spatter, that that spatter could -- which goes out in multi-directional patterns -- could catch another combustible item in the vicinity on fire?
MR. ELLIS: Objection.
Go ahead.
A I won't say that can't happen; however, we're talking about an extremely thin material, you know, one mil

Page 150

thick. And it -- it's taken into evaporative state. I can't imagine that much material -- any droplets of any size being developed and generated so as to go out and cause something to catch on fire.
Q (BY MS. MaCLEOD) Would you disagree with Mr. Scardino's opinion that the polystyrofoam venting channels that were attached to the TechShield were anywhere from zero to one inch away from the TechShield?
MR. ELLIS: Objection.
Go ahead.
A No.
Q (BY MS. MaCLEOD) You have no reason to disagree with that?
A No.
Q Do you know what the combustion rate is for the polystyrofoam channeling that was located in the Taylor home?
A I'm not sure what you're asking me.
Q Do you know how easily it ignites?
A The answer is no.
Q Okay. Let's move on to Paragraph 4.
A Okay.
Q When you say in Paragraph 4 lightning does cause fires --
A Yes, ma'am.

Page 151

Q -- is that your way of saying that lightning supplies the energy that can result in a fire?
A Yes, ma'am.
Q And if you -- you told me that -- earlier that you know what the fire tetrahedron is. Can you tell me what that is.
A Sure. Oxygen, fuel and heat, when they come together; but to create a fire you need the fourth element, and that's sustained chemical reaction.
Q Okay. And so the heat portion of that would actually be the energy from the lightning?
A That's the initial heat, yes.
Q Okay. And then you'll -- you have to have some type of fuel source, correct?
A Yes.
Q And in this particular fire that's going to be a material that was found inside the Taylor home?
A Sure.
Q And if you remove any one piece of this fire tetrahedron puzzle?
A It collapses.
Q It collapses.
So if you -- if you had a flame and you removed a piece of it, the fire is going to go out?
A When you say remove the piece, remove a piece of

Page 152

the tetrahedron? Yes.
Q Yes. Yes, sir. I'm sorry.
And if you don't have all four pieces of the fire tetrahedron, you're just never going to have the fire in the first place?
A Correct.
Q And as I understand sort of the totality of Paragraphs 1 through 4, is that you're offering the opinion that lightning can cause fires and fires can occur in houses without the presence of radiant barrier, correct?
A Yes, ma'am.
Q Would you agree with me that lightning-induced fires occur in houses that don't have CSST installed in them?
A Yes, ma'am.
Q And in a home with CSST where CSST is energized by lightning and perforated, that -- it is your opinion that that CSST is the cause of the fire?
A Well --
Q As long as it's located in the area of origin?
A It -- it's -- it's got to be in the area of other origin, that's -- that's number one. Two, there's been a -- someone has asked the question, is it possible for the CSST to be perforated and have gas but no -- no ignition, but then the same lightning, say, caused a fire a few

Page 153

inches away, and that -- that's -- that is an unsettled question right now.
Q It is. Okay. But let me ask you, go back to what your opinion is. If a house has CSST in it, the house sustains a lightning strike or energy from a lightning strike enters that house, it energizes the CSST, it perforates the CSST, it ignites the gas, and all of this happens in the area of origin, is it your opinion that the CSST was the cause of the fire?
A That's -- that -- that is what my opinion was as of seven years ago when I wrote the first paper. Lately, I have been issuing no opinions as to the -- the cause of the fire. I haven't in the last probably three or four years I bet.
Q Okay.
A Because -- because the possibility -- and I don't know the answer, so I'm going to say, well, what if there were sawdust right there and you ignited the sawdust. Well, the truth is the bulk of the fire damage is going to come from that gas, but I can't eliminate the possibility that the sawdust a few inches away was ignited. I just can't do it.
Q How would that sawdust have been ignited, though?
A By the -- by the lightning.
Q Okay. Does the fact that the Taylor loss

Page 154

occurred in the southern United States have any significance to you in regard to lightning events?
A I'm -- I don't understand where you're going.
Q Yeah. I mean, I'm not trying to be tricky. Have you heard the phrase "high lightning exposure environment"?
A Sure.
Q And what does that mean to you?
A It means you have -- it's a relative term, but it means you have more lightning striking the -- higher lightning density in events per square kilometer for a given period of time relative to another area of land someplace else in the -- in the United States which is what we're talking about.
Q Are some areas considered high lightning exposure -- exposure areas while some are not?
A Sure.
Q Okay. Do you know whether North Carolina is considered a high lightning exposure environment?
A Well, to me, that's a relative term, but on -- on the map it's -- it's got the color yellow which I believe is -- two to four is the nomenclature. I don't think -- I believe you can go up to high -- up to as high as 10. But it also would depend what part of North Carolina you're in.
Q And I really wasn't asking you to guess. I mean, if you don't -- if you don't know you --

Page 155

A Oh, it's -- it's on the chart I brought.
Q Okay. If lightning were to strike two pieces of aluminum metal, one being very thin, let's say one mil, one being 163 times thicker, all other things considered being even, is energy from a lightning strike going to do more damage to the thinner piece of the aluminum -- aluminum or to the thicker piece of the aluminum?
A You're going to have different kinds of damage. Having said that, the thicker piece of aluminum will be able to absorb some of the heat and carry that heat away from the penetration site, so you'd expect less damage.
Q And in regard to heat, the thin metal is going to heat faster than a thicker piece of metal, correct?
A All other things being equal, yes.
Q And in regard to duration -- well, strike that.
Do you have any opinion as to whether TechShield, when installed in the roof structure of a home, attracts lightning?
A No opinion.
Q And that would be the same, no opinion, if you were to learn that the TechShield installed in the roof structure was grounded?
A Correct. I would also add that that -- you know, it's -- it's somewhat a relative term. As an example, one of the houses we've seen, you know, that had TechShield in

Page 156

it that I believe was struck by lightning, there's the house -- I'm sorry -- a thousand houses or so in this subdivision. How do you say it was attracted to one house relative to another? I don't know how you do that. All that we can say is that it struck that house.
Q Okay. And in that example that you just gave me, if the rest of the houses in that area the TechShield was not grounded, but in the one house that was struck by lightning it was grounded, would that change your opinion in regard to attraction of lightning?
A Oh, I think you'd have to know a lot more, like the elevation, the elevations of the house. Part of it is -- is the vagaries of Mother Nature. When this -- you know, when this cloud got enough energy where it wanted to discharge, where did that cloud -- where was it situated?
Q And despite all those, what did happen in that instance was the lightning had a cloud-to-ground path and did strike the house that you were referencing?
A Yes.
Q And it did energize the TechShield in that house?
A Yes.
Q And there was a fire in that house?
A Yes.
Q Was the area of origin located anywhere near the TechShield in that house? If you know. It may not be the

Page 157

one that burned. I'm not --
A No. No. The -- the -- the house I'm thinking of, certainly there was TechShield there, but it's also evidence that it was on the air -- on the -- on the furnace right there, and then ran down the copper lines to the outdoor unit. So it -- you know, there's energy all over that house.
Q But the area of other origin was near where the TechShield was located?
A Yeah. And -- and -- and the furnace and -- and the ducting, yes.
Q Okay. Let's turn to Paragraph 5.
A Yes, ma'am.
Q What's the general point you're trying to impart with Paragraph 5?
A Basically, that the use of aluminum in a building material is -- is not new nor is it novel. People have used roll-in insulation with aluminum backing, as an example, to line their roofs with, and no one has ever, to my knowledge, suggested that that creates any undue hazard.
Q In those situations, the radiant barrier sheathing is actually attached to the wood rafters, correct?
A Yes.
Q It's not attached to the OSB as in the instance

Page 158

with TechShield, correct?
A That's right.
Q Okay. So the roofing nails that are attaching the shingles to the TechShield are not actually -- the roof shingles -- nails that are attaching the roof shingles to the OSB are not actually coming into contact with the radiant barrier sheathing that is attached to the wood rafters, correct?
A Correct.
Q Are you aware -- I mean, let me ask you this: Just because a metal is used in a certain application, it doesn't mean that that application is always the appropriate application, correct?
A Can you give me an example.
Q Yeah. Well, let's -- let's -- I mean, I actually got this from you, but there was a time when some wiring was made out of aluminum?
A Sure.
Q And not all the testing was done, but at some point folks started figuring out this application, this use of aluminum in this application is not appropriate, it's not working?
A That's right.
Q So there are instances where a metal is used in a certain application, and it's not always the appropriate

Page 159

application for that metal?
A Yes, ma'am.
Q And do you have any opinion in regard to -- well, strike that.
Okay. Paragraph 6, this is also sort of joined with Paragraph --
A Yeah.
Q -- 5 --
A Yes, it is.
Q -- and its content, and it's talking about other types of aluminum foil backed products. We talked about the roll insulation, and you mentioned earlier the foam insulating board?
A Yes.
Q Can you tell me where that's installed in a home?
A That's installed around the perimeter walls.
Q On the inside or the outside of the house?
A Normally, the outside.
Q And when that's installed, is the aluminum foil backing facing the interior of the home or the exterior of the home?
A Exterior.
Q Do you know how foam insulating board is attached to a structure?
A Normally, it's just been nailed on.

Page 160

Q And is it -- is it your understanding that it's nailed to the framing of the house, to the wood rafters of the house?
A Well, it would be to the studs, but yes.
Q The studs. Okay.
And in Paragraph 6, when you say the use of aluminum in residential construction is not novel, but a time-honored practice?
A Yes.
Q Are you referring to all products that use aluminum or just to the aluminum foil backed products?
A Aluminum foil backed products, ma'am.
Q Do you know when roll insulation was first introduced -- what -- what is roll insulation? I mean --
A Essentially, it's fiberglass that's been made to adhere to like a layer of paper, then backed with a layer of aluminum.
Q And is that -- do you know where -- where that is typically installed in a home?
A You can install it -- install it in the walls or you can install it in the attic or you can install it at the top of the rafters.
Q Is that a typical practice, to install the insulation on the roof line rafters?
A In -- in parts -- I've seen it used many times in

Page 161

Texas.
Q Okay. Do you know what the practice is in North Carolina?
A I do not.
Q Okay. Okay. If you will turn to Paragraph 7.
A Yes, ma'am.
Q You state in the last sentence, "There's nothing unexpected in the use of aluminum in the TechShield to serve its intended use in residential construction"?
A Right.
Q Will you tell me what you mean by this, why you include it in your report?
A Let me read the whole paragraph. Okay. What -- what -- what I'm trying to say there is we need a product that is radiant. Copper is impractical because it tarnishes. We can't afford gold or silver. Silver tarnishes and is expensive. We know the problem with gold. It would be excellent, but we can't afford it; therefore, we find a material that will work well and that, relative to the others, is both functional and inexpensive. That's copper -- I'm sorry -- that's aluminum. No surprise.
Q Okay. I mean, is -- does go back to what you were telling me earlier that there really is no alternative design to the use or to TechShield in its use of aluminum laminate?

Page 162

A There really isn't.
Q I mean, is -- is there any way to make this product less likely to conduct energy when it's struck by lightning?
A Well, you then run into the test of -- well, we -- we might try and come up with some other material, but then we -- we lose our, you know, very low emissivity which is what's desired. It's -- it's -- it's kind of a tradeoff. But the utility of the product would be, you know, severely hampered to go to, you know, another compound.
Q Are you aware of any instance or any products -- or strike that.
Are you aware of any product that is a spray-on radiant barrier sheathing?
A Well, I did review -- the answer is yes.
Q Okay. And tell me what you reviewed in regard to that product.
A Well, Mr. Simmons suggested a company and I went and looked it up. And they -- they gave numbers as to their emissivity, and it was much higher than -- than what -- per Mr. Dellwo says is allowed per, as an example, the California standards.
Q Was it higher than the standards required in Austin?

Page 163

A If I -- I'll explain about Austin. I don't think Austin, per se, has a -- a -- a numeric figure for emissivity. It's just that what was explained to me was, in order to meet the Austin efficiency requirements for a house, this is the -- the practical solution is to use a radiant barrier product, not a spray-on.
Q Do you -- do you know that the spray-on would not meet the standards that are required by Austin?
A No, I do not.
Q Do you know whether North Carolina has any of the standard requirements or that -- the requirements that you've been discussing that Austin has?
A I do not.
Q Let's turn to Paragraph 8.
A Yes.
Q And this paragraph has to do with your criticisms or this -- I guess it's not a sole paragraph, because it's got four points under it, but it has to do with your criticisms of McDowell Owens's testing as of November 5th, 2010?
A Yes.
Q And as I understood from earlier, you have not seen any testing done by McDowell Owens after November 5th, 2010?
A Well, I've not seen a video. I was present at

Page 164

Mr. Simmons's deposition to understand what he -- what he told us about it.
Q Okay. In regard to what he told you during the -- his deposition that you sat in on, does that change anything that you've included in your report in regard to criticisms of McDowell Owens's testing?
A No.
Q Okay. I'm just to trying to figure out -- I think you've covered the 60 Hertz and the DC electrical energy. Why is it you say that the testing cannot be used to interpolate as to how TechShield would perform when exposed to fast wave, short duration energy?
A Why? A number of reasons: One is skin effect. Number two is the amount of energy that you're using to develop a fire. Number three would be just the transient nature of heating from a fast pulse relative to a -- what's not a pulse or impulse, but, you know, roughly five to five and-a-half minutes of continued energy.
Q Where are you getting the five to five and-a-half minutes of continued energy?
A Well, that's in one of his reports where he tested for like 310 seconds.
Q Is it your opinion that you don't believe that if a material can catch fire or combust at a lower voltage or amperage that it will also catch fire at higher values,

Page 165

those items?
A Okay. I'll explain it real carefully. You have left out the critical element of time.
Q Okay.
A Current -- current -- particularly, the factor of current squared times time is engineering shorthand for essentially energy. The units are amperes squared seconds. You need an impedance involved, but all other things being equal, electrical engineers are taught this quantity, I squared T, and that that's proportional to the energy input into a system. Those numbers need to be similar, and they're not.
Q Okay. If the time or the duration is the same and the metal is the same, the only thing that changes is the amount of voltage that's put into this equation. If it's going to combust at the lower voltage, is it going to combust at the higher voltage?
A I think you need to be asking about current --
Q Okay.
A -- but the answer is yes.
Q Okay. All right. Let's go to the second paragraph.
A Okay.
Q And it says, "The McDowell Owens article talks about the impassity, the lack of theoretical basis for

Page 166

calculating same, and the need for determining the impassity in the actual application." What does that mean?
A It -- in the paper, they were trying to determine the impassity, how much current could this aluminum carry. That's what -- that's what they're trying to do.
Q Before it combusts?
A Well, essentially, before it brings on combustion in the paper, but yes. And then they went on to test with 50 -- 50 amperes rather than the more appropriate value which would be something on the order of lightning current.
Q And again, your criticism is is that -- is that they can't -- if they -- if they prove something at a lower impassity that it will combust or heat to a point where it will combust, that you can't take that and then prove that at a higher impassity, it will get to that point and combust?
A That -- that's right. Really, the energy levels need to be pretty similar.
Q Tell me about the ANSI/IEE c62 Standard. What is this standard?
A Well, there's a number of standards there, probably 20 or 30. They are a series of standards that describe a standard waveform for testing electrical components that are to be used in a lightning environment.
Q And why do you think that that's the appropriate

Page 167

standard to use and to conduct testing pursuant to -- in this particular --
A Sure.
Q -- case?
A Sure. Because what Mr. Simmons is stating is that, hey, this product is failing due to lightning. And all I'm saying is, you know, there's a lot of objects or a lot of pieces of equipment or components that are tested to see if they fail or how they react when lightning is -- lightning waveforms are imposed upon them. That work's already done. This is what -- this is how the testing ought to be, you know. This -- this is a very easy way to test, is to go to a lightning lab and say, let's put this in and see what happens, if that -- if that's his premise.
Q And it -- it is -- so it's an easy test to have accomplished? I mean --
A That's -- it's -- it's going to be expensive, but there are lightning labs that can do that, yes.
Q But you haven't done it, correct?
A Right.
Q Okay. And have you told Louisiana Pacific that they ought to do it?
A No.
Q And as far as you know, Louisiana Pacific hasn't done it?

Page 168

A Correct.
Q Is it your understanding that the McDowell Owens's position is that they are attempting to show that lightning can damage the TechShield?
A Yes.
Q It's not your understanding that they're attempting to show that ener- -- electrical energy can damage the TechShield?
A I read it as lightning.
Q And I think we've covered Number 2, the second opinion about the purity?
A Yes.
Q When you're talking about Number 3, you say in that last sentence, you're talking about ablation and things that you've observed in the houses that you've actually visited, correct?
A Yes.
Q Okay. And you state that there was no fire present in many of these instances?
A Yes.
Q That doesn't mean there was no fire present in any instance, correct?
A Correct.
Q So there are times when you've seen ablation and you've seen the presence of combustion?

Page 169

A Yes.
Q Okay. In the fourth paragraph, you're talking about the melting point of aluminum and the temperatures of -- that fires reach?
A Yes.
Q What is it you say -- as I understand it, you're saying that because the temperatures of a fire can reach a temperature that is beyond the melting point of aluminum, that there are times that all you can tell is that the aluminum has melted?
A Yes.
Q Okay. Why does that make the McDowell Owens's conclusions concerning the cause of melted aluminum in a residence speculative?
A Well, as I understand their paper, what they're saying, if you get this melted aluminum and it catches the paper on fire, certainly at some point the level of current -- that can happen. But if you have nothing to look at when it's all gone, it's just as easy to say something else caused the fire, number one. And number two, it melted the aluminum, and once the aluminum is melted there's really nothing to -- to evaluate.
Q Are you saying in those areas where there is ablation and you have a nail and paper, but you can clearly see that the aluminum metal is missing, that there's

Page 170

nothing in that regard to evaluate?
A No. No. What I'm saying is once you reach these excess -- they're not even access. Once you -- once you reach these hot fire temperatures, you've -- it destroys the -- any evidentiary patterns you might be looking for in the area where the fire started.
Q I think we have discussed at least all the questions I wanted to ask you in regard to Paragraph 9 or Opinion 9.
A Okay.
Q And in regard to Opinion 10, can you tell me the basis for making the assertion that the presence of TechShield does not present an increased risk of lightning-related fire when lightning strikes a home which it is -- in which it is installed?
A Yes, ma'am. That is a -- a poor choice of words on my part.
Q Why is that?
A The -- the better way of explaining this would have been to state that I have seen nothing that leads me to believe that TechShield increases that -- that lightning risk. One would need to do a -- a very in-depth statistical analysis, and I haven't seen anything like that to -- to say that given the presence of TechShield in a house, all other things being equal, this house is more

Page 171

likely to catch on fire than one that does not have TechShield.
Q Anything else you want to tell me in regard to how you just revised your Number 10 paragraph in your opinions?
A No.
Q Okay. Do you know whether there's any code in North Carolina that requires the grounding of a roof?
A I do not.
Q Was there any reason anyone would consider grounding a roof from a electrical standpoint?
A Well, one, if they're putting a lightning protection system on it, number one. Number two, let me back up. Let's re-ask that question again.
Q Okay. I'm not really sure what it was, but I'll try. I'll do my best. Do you know why anyone would consider grounding a roof?
A Okay. I -- I made an assumption on that -- in that answer. It -- it makes no sense unless it's a -- a metal roof. But if it is a metal roof, it would not be uncommon to have it grounded in the sense that if you put exhaust fans in, as an example, or mount some type of antenna, you know, solar cell collectors, that would result in a grounding of the roof. In addition, if you've got, say, a steel exhaust ducts with aluminum inside, they're

Page 172

attached, say, to an electric -- a gas furnace with an electric motor, that would ground the roof.
Q Okay. And are you talking about metal roofs in those instances --
A Well --
Q -- grounding those or just any roof in general?
A Well, you -- we -- there really is --
THE VIDEOGRAPHER: I'm so sorry. The tape is about to run completely out.
MS. MaCLEOD: Sorry. Let's go off record.
THE VIDEOGRAPHER: Going off the record at 3:50.
(Break taken from 3:50 p.m. to 4:05 p.m.)
THE VIDEOGRAPHER: We're going back on the record at 4:05 with Tape 6.
(Exhibit Number 92 was marked.)
Q (BY MS. MaCLEOD) Mr. Goodson, I am going to hand you what I've marked as Exhibit 92.
A Sure.
Q And this is a document called "Investigating the causal link between lightning strikes, comma, CSST and fire," and it was authored by you and Mark Hergenrether --
A Yes.
Q -- correct?
A Yeah.

Page 173

Q Is Mark an employee -- or I should say, Mark Hergenrether an employee of Goodson Engineering?
A Yes. I'm sorry. He was. He was at the time this was written, yes.
Q Okay. And what role did you play in the creation of this article?
A Just one of the authors, two of us.
Q Okay. And was this article peer reviewed?
A Yes.
Q What does it mean to be peer reviewed?
A That means that the publishing committee or publishing agency has a system whereby other fire investigators, engineers, fire scientists review the article and determine whether or not it's worthy to be published.
Q And when was this article written?
A Roughly 2004.
Q Okay. And was it published anywhere?
A Yes.
Q Where was it published?
A Fire and Arson Investigator.
Q And where is Mark Hergenrether employed now?
A He started his own company up in Sanger, Texas.
Q When did he do that?
A Almost three years ago.

Page 174

Q And this is an article you wrote about failures you had seen in CSST when the CSST was insulted by lightning, correct?
A Yes.
Q Do you still hold the opinions and information that you provided in this article as true?
A That's -- with all due respect, I don't believe this is the article that was published.
Q I am not sure -- this is certainly one that is available if you type in various key words it can be --
A The reason I say this, this looks like -- it looks like what it went through before peer review.
Q Okay.
A Because I believe we took out the references to -- to -- as an example, on Page 4, Gause's Law.
Q Okay. Well, let me hand you what I've marked as Exhibit Number 93.
(Exhibit Number 93 was marked.)
A Sure.
Q (BY MS. MaCLEOD) What is this article?
A This is from the Fire Materials conference of 2005, very similar to what we just talked about in the prior article.
Q Okay. Is this the result of the first article being peer reviewed, and this is what ended up and was

Page 175

published in the Fire Materials 2005?
A Not quite.
Q Okay. So there's another article out there that was actually the one that was published?
A Yes.
Q Okay. I don't have that one with me today.
Okay. Let's look back at Exhibit 92. Do you know when CSST was first introduced to the U.S. markets?
A Roughly 1988.
Q And before it was introduced into the market, ANSI standards were developed for it; is that correct?
A Yes.
Q And in under -- on Page 1 under CSST development in that first paragraph, you state in the second to last paragraph -- sentence of Paragraph 1 under CSST development, "In analyzing CSST, it is important to note that we can find no evidence of testing for lightning resistance during product development." Why is that important?
A Where are we at? I'm sorry. Page?
Q Page 1 of --
A Well --
Q -- Exhibit 92.
A That's what's wrong. Okay. Oh, okay. Okay.

Page 176

Because at that point in time I had seen a number of fires from gas appliance connectors, some failing from lightning. It was a known hazard. I wrote about it back in 1999 that these could fail, and one of the manifestations -- the reasons for failure was -- was lightning. And it was a real surprise that lightning testing wasn't done given that CSST is essentially a gas appliance connector just hundreds of feet long.
Q Okay. In Paragraph 2 -- well, first let me ask you. Have you found any evidence that TechShield was tested for lightning resistance during the product development?
A No.
Q In Paragraph 2, it talks about an installer program where installers are trained how to install CSST. Do you -- are you aware of any -- whether TechShield or Louisiana Pacific requires installers of TechShield to take a training certif- -- certification course before installing TechShield?
A No.
Q And do you believe there should be a training course before installing TechShield?
A No.
Q As you sit here today, do you have any idea how many pieces of OSB sheathing TechShield that have been

Page 177

installed in the United States from the date the product was first introduced to the market?
A No, ma'am.
Q Do you know the date that the product was first introduced to the market?
A As I understand it, roughly '90, '91, something like that.
Q TechShield with the aluminum sheathing laminated to it?
A I believe that's right.
Q If I can, will you hand me Exhibit 63, the big stack of your stuff.
A Sure. (Witness complied.)
Q If you will, I'm going to have you look at the U.S. patent that you have provided to me in Exhibit 63.
A Okay. Yes.
Q Does that give you any indication of perhaps when the -- that the product wasn't introduced in the market as early as 1991?
A Are you asking me based on this patent is it more likely that it came on in '99 than '91? Is that what you're asking?
Q Yeah. What's the date on that patent?
A Well, it was issued in 2001. It was filed for in '99.

Page 178

Q So it doesn't give you any greater insight. I just thought I'd have you look at it.
A No, ma'am.
Q But as to when the product --
A No, ma'am.
Q So the best of your recollection is 1991?
A Yes.
Q Okay. Have you done a -- or let me strike that.
How much testing have you done in regard to CSST?
A Conservatively, hundreds of hours.
Q Have you ever undertaken any testing to CSST where you've subjected it to electrical current?
A Yes.
Q And why did you subject it to electrical current? Why did you do that testing?
A Okay. There have been specific questions raised as to whether or not -- there's several questions. One, to compare the ability to pierce CSST with electrical energy off of wall current comparative to black pipe. Secondly, there have been questions raised if electrical wire arcs to CSST, then creates a hole, will it leave a copper residue, can that be detected on the CSST.
Q And in the testing where you undertook to apply electrical current equal to that that runs through a

Page 179

residential home to the CSST, were you able to create a hole in the CSST?
A Absolutely.
Q And that was testing you thought was necessary to support the opinions that you were offering in CSST cases?
A Well, some of the opinions.
Q Yes. Okay. And on Page 3 of this article, that's entitled "Failure Aspects," correct?
A Which -- which exhibit, please?
Q The same one, 92.
A Okay. Yes.
Q Okay. And the first failure aspect of CSST is that the metal utilized in the CSST is extremely thin, correct?
A Yes.
Q Do you know whether the metal utilized in CSST is thicker than the aluminum used on the TechShield?
A I know.
Q You don't?
A No, I do know.
Q Oh, you do know. Can you tell me.
A It's much thicker.
Q Much thicker than the aluminum on the TechShield?
A Yes.
Q Okay. Do you know how much thicker? Is that

Page 180

something that you can --
A Roughly, 10 to 12 times thicker.
Q So when CSST is energized by electrical current from a lightning strike --
A Yes.
Q -- and the CSST is perforated, the fuel ignited is typically the gas that's traveling inside the CSST?
A Yes.
Q Do you know how the NFPA defines a fuel?
A No.
Q Is your argument in regard to CSST versus plat -- black pipe that the thinner the metal, the more easily it is perforated by electrical current?
A That's one of the arguments.
Q And in the testing that you did in regard to determining if CSST could be damaged by electrical current was the use of a 120-volt system?
A Yes, ma'am.
Q When you did testing of CSST, were you able to emulate the electrical current that you would find in lightning?
A No.
Q But that didn't stop you from doing the testing on the CSST?
A That's right.

Page 181

Q And you've mentioned some equation that -- more than one, though I can't -- could not repeat them back to you. Were those the -- were any of the equations a mathematical formula that you found on Page 3?
A No.
Q Tell me what the measurement or mathematical formula that's on Page 3 is calculating.
A Basically, how much heat is necessary on a first order of approximation to bring out to -- bring about a hole in different types of metal, be it stainless steel, black pipe, aluminum or copper.
Q So in this formula, it's basically calculating how much energy you need to melt metal?
A Essentially.
Q And in this formula, the mass of the metal matters in regard to the amount of heat that's needed to cause that melting, correct?
A That's right.
Q Have you used this mathematical formula to determine whether TechShield will fail when electrical energy is placed or run through the TechShield?
A No.
Q And again, why not?
A Well, one, we know -- one, we know it'll fail. Given enough energy it is going to fail. Secondly, we also

Page 182

know that if we have a lightning that just catches the wood on fire, that wood has combustion temperatures that will bring about failure of the material.
And I need to add -- something else you had asked early on with -- looking at this paper, you -- you said why -- why not the testing -- or why did it surprise you there was no test for lightning. If you read the lightning code, 780, there is in the appendix one of the provisions for when a lightning system might be installed is the presence of, as I recall, piping systems carrying fuel gas. And so that would be another reason that you would want to test a piping system for lightning resistance, is because it meets that criteria in the appendix of NFPA's 780.
Q You just mentioned the temperature for combustion or you were talking about the combustion of wood --
A Yeah.
Q -- as a result of electrical insult from lightning. Do you know whether the wood rafters in the Taylor home were treated in any way?
A I do not.
Q What about the OSB?
A I don't know.
Q Do you know what the age of the wood rafters in the Taylor home were?

Page 183

A No, ma'am.
Q And do you know the age of the OSB installed in the Taylor home?
A No.
Q Do you know which ignites more readily, paper or wood rafters?
A Well, if you're talking about a strip of paper or a sheet of paper versus a wood rafter, it's going to be the paper.
Q Do you know what ignites more readily, a piece of paper or OSB sheathing like that used in the TechShield?
A Wait a minute. I'm -- could you ask that again, please.
Q Sure. Do you know what ignites more readily, a piece of paper or the OSB that's used in the TechShield product?
A All other things being equal, it would be a piece of paper.
Q Which ignites more readily, styrofoam vents or wood rafters?
A Probably the styrofoam vents.
Q What ignites more readily, the styrofoam vents or a piece of OSB similar to that installed in the TechShield product?
A Probably the styrofoam vent.

Page 184

Q Which ignites more readily, aluminum sheathing with a thickness of one mil or a wood rafter?
A Wait. What -- what was that again?
Q Which ignites more readily, aluminum sheathing with a thickness of one mil or a wood rafter?
A If you're using the same size torch on both, it's going to be your OSB.
Q And that -- would that be true in regard to aluminum sheathing and a wood rafter? That the wood rafter is going to ignite more quickly than the aluminum?
A Let's start over. I want to make sure I answered the right question.
Q Okay. Which ignites more readily, the aluminum laminate of a thickness of one mil or a wood rafter?
A Oh, okay. It's going to be the wood.
Q Okay. Why is that?
A Well, aluminum is pretty hard to get to ignite. It's a -- it's a metal. It's not readily combustible.
Q Okay. And its melting temperature -- so you -- but you don't know what its combustion temperature is, correct?
A Right. It -- I know it's going to be something above, you know, roughly probably 3,000 degrees. It melts -- I'm sorry -- it boils at roughly 2,500 degrees, so I believe combustion would be above that.

Page 185

Q And it melts at?
A Roughly 1,200 degrees.
Q Do you know whether aluminum sheathing with a thickness of one mil is going to melt before a wood rafter ignites?
A Say that again.
Q Do you know whether a piece of aluminum laminate with a thickness of one mil is going to melt before a wood rafter ignites?
A You know, it really -- really can't -- can't be answered.
Q Okay. I believe, as I understand, that your testimony is that wood can burn if it's struck by lightning?
A Yes.
Q Does it catch fire every time it's struck by lightning?
A No.
Q What are some of the factors that you would consider in regard to whether it catch -- caught fire or not?
A Well, the orientation of the wood, the age of the wood, whether -- whether or not it's in a position to trap heat, that's number one. But number two, one of the -- the biggest factors is going to be the nature of the lightning,

Page 186

whether it's, as an example, hot or cold lightning.
Q Okay. Would the wood, in order for it to catch fire, have to be struck directly?
A No.
Q Why do you say that?
A Well, if -- you can have electrical energy come down from the lightning strike and essentially energize part of a house, and then you get a -- that breaks down the fields within the house and creates ionization, and you can get continuing currents to flow, and the continuing current -- continuing current could light off the wood.
Q Okay. You -- I wanted to finish that train of thought before I went on and asked you what you meant by hot and cold lightning?
A Okay. Per Uman's book and the National Weather Service and generally accepted, that hot lightning is what causes fires. And what that means is you have a lightning -- lightning event, but instead of stopping very rapidly it continues on for a few tenths of a second, maybe up to a second with what's known as continuing current that's around 100 amperes. And that's -- that's when a lot of heat is -- is created by this resist -- resistive heating by the 100 amperes or current flow.
And in cold -- cold lightning does not -- is not believed to cause fires by ignition of, say, wood or

Page 187

something like that. The energy just isn't there.
Q In rendering any of the opinions that you offer in your report, does it matter whether the lightning that struck the Taylor home was hot or cold lightning?
A Not -- not in rendering my opinions, no.
Q Okay. Do you know whether the lightning that struck the Taylor home was hot or cold lightning?
A Okay. What's generally accepted is that it would have -- it's hot lightning that causes fires, not cold lightning. The exception to that would be, as an example, let's suppose you had a gas leak already in existence or a flammable gas or gasoline or some vapor space that's easily ignited by -- by an arc. Cold lightning could ignite -- could light those off, but generally, it's hot lightning that -- that ignites trees, forest fires, pieces of structural lumber, things like that.
Q And how are people measuring that to come up with the determination that that's generally hot lightning that's causing those events?
A Well, one of the ways -- and I -- I -- you know, I read a paper on it recently, was forest fires were occurring. I forget what state, but they were using planes to circle these forests overhead. And they were using instrumentation to measure lightning events and the length of those lightning events, and they were able to

Page 188

essentially triangulate and determine where the fires started and associate those with particular lightning events. And what they determined was the lightning events starting the fire were essentially caused by hot lightning.
Q How did they come to that conclusion?
A Oh, because when you have a lightning event, it creates a radio frequency signal, and they measure just the length of those signals as to whether it was very short lived, very long lived. That's the impression I get reading the paper.
Q Do you know the name of that paper or --
A I've got it here.
Q In all of this stuff?
A Yes, ma'am.
Q Is it -- is it in the exhibit in the stuff you produced?
A Yes.
Q Great.
If you'll turn to Page 4 of Exhibit 92.
A Okay.
Q In the top paragraph, it states, "Thus the thickness of black pipe is critical to prevent fires post lightning strike." Do you still agree with that statement?
A Yes.
Q If you will look down at the chart energy versus

Page 189

material?
A Yes.
Q There is a column there that represents the material being aluminum?
A Yes.
Q And that is aluminum that has a thickness of .035 inches, correct?
A I'll check the prior page. Yes, ma'am.
Q And how much thicker is the wall thickness for that aluminum tubing that you were using than the thickness for the TechShield at one mil?
A The factor of 35.
Q So 35 times thicker?
A Yes, ma'am.
Q Based on the calculations that you've done, how much more energy is required to melt black pipe than it is to melt the aluminum that you've used in this example?
A Oh, roughly a factor of eight.
Q Okay. So if you were trying to figure out the difference between black pipe and the one mil aluminum laminate on TechShield, would you multiply that number you just gave me by 35 to figure out what the difference is?
A Yes.
Q And you could do that same kind of calculation that you and I just did to determine the difference between

Page 190

CSST and aluminum?
A Yes, ma'am.
Q As well as copper, the difference between copper and aluminum?
A Yes.
Q Okay. Under the failure aspects of this article, would you agree that the focus is on the thinness of the metal?
A Yes.
Q And do you still agree that the failure aspects of CSST are the thinness of the metal?
A Yes.
Q And this article in 2004 is talking about the fact that fires attributable to CSST are increasing. Do you see that at the bottom of Page 4?
A Yes.
Q And when you're talking about fires attributable to CSST, you're talking about the damage effects that lightning energizing a CSST pipe is having on that CSST pipe?
A Yes.
Q Okay. Would you agree with me that there was at some point a time when folks were not aware of the failure aspects of CSST?
A Yes, ma'am.

Page 191

Q And that there was a -- a learning curve and a time period in which the problems with CSST came to be known?
A Yes, ma'am.
Q On Page 5, when you were writing this article and doing research and trying to figure out what was going on with CSST, as part of your research you interviewed fire department officials in Arlington, Texas, correct?
A Correct.
Q Have you interviewed any fire department officials anywhere in regards to TechShield?
A No, ma'am.
Q Do you know when the CSST industry first became aware that there may be an issue with lightning-induced fires resulting from CSST?
A Yes.
Q What year was that?
A Roughly '97 or '98.
Q Okay. And then as of 2005, at that time you'd encountered five fires that you thought were attributable to lightning and CSST, correct?
A I had personally investigated roughly that many, yes, ma'am.
Q Okay. Do you know as of the 2005 time frame how many existed at that time beyond the five that you had

Page 192

personally been involved with?
A Well, I know Frisco had -- had four or five fires. Carmel, Indiana had had six. Donan Engineering did investigations in Ohio and Indiana and had come up with, I believe, 10 or 15.
Q Okay. And in this article, you are not just saying that lightning causes fires, correct?
A Correct.
Q I mean, you're saying that the electrical energy from a lightning strike interacting with CSST and energizing that CSST is what's causing the fires?
A That's right.
Q In the Edmond, Oklahoma case that's listed on Page 5?
A Yes.
Q It talks about two runs of CSST, each serving a metal chimney comprised of CSST piping in the house. Do you know whether that CSST was electrically connected to those chimney portions of the home?
A It was not connected over the chimney, no.
Q Okay. Do you know if it was otherwise electrically connected?
A You asked me if it was ground and mounted?
Q No, no, no, no. I was just asking if it was electrically connected to the chimney -- the metal chimneys

Page 193

in the home.
A No.
Q Was it -- so it wasn't -- the CSST did not go to the fireplace in that home?
A No. It went to the fireplace, but the -- the base of the fireplace was masonry.
Q Okay. What about the metal piping that came down into the box?
A No connection.
Q And the -- despite the manufacturers having some knowledge of lightning-induced CSST fires, in the 1997, 1998 time frame, the class action lawsuit wasn't filed until November of 2004, correct?
A I think that's right.
Q Okay. Do you know when the first CSST lawsuit was filed?
A I do not.
Q All right. On Page 8 of that report?
A Sure.
Q Under investigating CSST fires after a lightning strike?
A Yes.
Q In the second paragraph there, it talks about a -- locating a hole in the area of tubing where the polymer coating had no fire damage; do you see that?

Page 194

A Yes.
Q Do you know what causes that?
A It was lightning.
Q Do you know why the tubing would be damaged but the polymer coating would have no fire damage?
A Sure.
Q Will you tell me?
A Just what you have there. There were no nearby combustibles and when it punched the hole in the CSST and the polymer jacket, the gas just shot out (indicating). And anytime gas leaves a jet, there's a gap (indicating) which is actually cooler than -- much cooler than the flame; in fact, it's cooler than the air around you. Normally, you got this cool zone and this flame shooting out. There's nothing combustible for it to hit and catch fire on, and so it just sits there and -- and you have a flame just running unabated.
Q Sort of like a blow torch?
A A small one, yes.
Q Okay. The same paragraph talks about during a fire investigation the leaks and subsequent fire development must support the area of origin or the leaks would appear to be of little consequence.
A Yes.
Q In investigating the effects of energization from

Page 195

lightning on CSST, have you ever had the opportunity to see a piece of CSST that has more than one hole in it?
A Absolutely.
Q And in those times when you have seen more than one hole, have you found times where some of those holes are outside the area of origin?
A I believe that's correct, yes.
Q Okay. So the -- you find evidence of damage from electrical energy from a lightning strike that was not the cause of the fire -- you find that damage on the CSST and it was not the cause of the fire, correct?
A That's a different question.
Q Yes, it is. Okay. Let me ask it again, because it's a different question from the last one, but it's all part of the core question that I meant to ask. Okay. So you see a piece of CSST that has several holes, and some of those holes are outside the area of origin?
A Sure.
Q But they have been caused by electrical energization from a lightning strike?
A No.
Q Okay. What have they been caused by?
A Electrical wires that are laying adjacent to it. Then the fire comes. The heat from the fire destroys the polymer jacketing, destroys the insulation on the wiring,

Page 196

the wiring shorts to the CSST, blows a hole in it.
Q Okay. Have you ever seen an instance where a lightning strike -- the lightning strike -- the electrical energy from the lightning strike itself causes more than one hole?
A Yes.
Q Okay. And some of those holes are outside the area of origin?
A No.
Q Okay. You've never seen that?
A No.
Q More than one hole outside the area of origin caused by the electrical energy?
A No.
Q Okay. Did -- is it your opinion that that is not a possibility that that scenario cannot happen?
A I'm going to say I don't understand how it can happen because you have a -- you have a blow torch right there. And with the hole in the gas leaking out, there should be a flame there.
Q Well, didn't you tell me that there -- you knew of an instance where there was no combustible and no other combustibles in the area and the house didn't ignite there?
A Right. Then -- then we don't have an area of origin.

Page 197

Q I'm wondering if we're communicating here because --
A Well --
Q Yeah. So let me try again, because I'm sure it's my question. A piece of CSST tubing has more than one hole?
A Yes.
Q Some of the holes are outside the area of origin?
A Okay.
Q Have you seen that scenario?
A I have.
Q Okay. Have you seen the scenario where there is a hole outside the area of origin which also has a hole that was caused by electrical energy? Have you ever seen that scenario?
A Sure.
Q Okay. But not from lightning, is what you're telling me?
A That's right.
Q Okay. You haven't seen that scenario where there are two holes caused by electrical energy from lightning, one of them in the area of origin and one of them in the -- outside the area of origin?
A Well, let me -- let me -- I remember -- let me just answer as best I can.

Page 198

Q Okay.
A The fire you're talking about with this little hole, the area of origin was probably 6 inches above there (indicating). Relative to a 5,000-square-foot house, six inches -- to me that's the area of origin. The -- the holes that were above it, there were three more, I believe, created. We had a total of four holes. They were impinging upon combustibles, but within a one-foot space (indicating), I mean, to me that's reasonable that that's in the area of origin even though there were no combustibles around this fourth hole.
Q Right. And I'm not limiting it to this one case in here. I mean, you've investigated over 200 CSST fires?
A Yes, ma'am.
Q And I really was talking about your collective experience, whether you have ever seen a situation where there's a piece of CSST where there are two holes, both caused by the electrical energy from a lightning strike in which one is in the area of origin and one is outside the area of origin?
A Not that I can recall. The -- the way I could see that happening is if you had CSST that got punctured inside a house, but then you had a hole outside the house and nothing for that flame to impinge upon. So that's really not an area of origin. You really don't have a big

Page 199

bonfire over there. It doesn't catch the house on fire. That's how I can envision it happening, but the -- in terms of the question you asked, I don't remember that happening.
Q Okay. Would it be reasonable if you had two holes and one that was the area of origin and then downstream there was a second small hole in which the -- as you described here, the polymer coating was still intact, that you could find electrical damage in two places and only one cause of origin?
A Sure.
Q All right. If you'll look at Page 11.
A Yes, ma'am.
Q This article provides remediation measures, correct?
A Sure.
Q Okay. Do you agree -- still agree that these are recommendations to homeowners with CSST to remedy issues involving CSST?
A Yes.
Q If you get rid of the CSST -- strike that.
All right. So in the world of CSST, we have energy from a lightning strike that energizes the CSST and then perforates the CSST resulting in a fire?
A Right.
Q And in the Taylor house, didn't we have energy

Page 200

from a lightning strike that energized the TechShield, correct?
A Yes.
Q Okay. And we see evidence of such energization on the TechShield that remained after the fire, correct?
A Correct.
Q And we see ablated areas on the TechShield, correct?
A Yes, ma'am.
Q Okay. In the evidence that you've looked at, you can see scorched areas on the TechShield, correct?
A Yes.
Q And if you looked at the evidence, you could see melted, discolored areas on that TechShield, correct?
A Correct.
Q And you can see, in some of those photos, burned areas on the TechShield, correct?
A I don't remember seeing that.
Q Okay. And while all of these areas on the TechShield, this evidence of electrical damage from the lightning strike are outside the area of origin, there's no doubt that they are evidence that the energy from the lightning strike did, in fact, energize the TechShield, correct?
A Correct.

Page 201

Q With the experience that you have in the CSST world and the -- what you've been doing with TechShield, do you see any similarities in how these products are -- have arrived to where we are today?
A No, I don't.
Q In your experience, when you're investigating holes in CSST that are allegedly due to the electrical arcing from -- as a result of a lightning strike, are you typically able to identify the opposing electrode that was involved in the arc?
A Sometimes. And it's not -- it's not uncommon, but there has been times when we couldn't.
Q Okay. And even in those scenarios where you cannot determine the opposing electrode, it was still your opinion and you were still willing to say that the electrical arcing between the CSST and the unknown electrical -- electrode, excuse me -- occurred causing the perforation in the CSST?
A Yes, ma'am.
Q Okay. Is it your opinion that the effect of energy from a lightning strike to TechShield is different than the effect of energy from a lightning strike to CSST?
A Absolutely.
Q Tell me about that.
A Well, TechShield is so thin, one, it -- we would

Page 202

expect it to ablate. Secondly, earlier today you asked me about spatter. TechShield is pretty thin. I can't -- I'm not going to say it can't happen, but it's inconceivable to me that you would have molten particles because it's so thin and it's -- we've got temperatures associated with arcing of five and 10,000 degrees, that they would -- you'd have a vapor coming off. And it's extremely small particles, if you can even see the particles. I'm not going to say it won't spatter. I'd be very surprised if you get any spatter at all. And I forgot the question. I'm sorry.
Q It was the effect of energy on -- from a lightning strike on TechShield, is it different than the effect of energy of -- from a lightning strike on CSST?
A Oh, yes. And -- yeah, continuing on, just because lightning hits TechShield doesn't mean that you're going to have a fire.
Q Well, does lightning -- does it necessarily mean when lightning hits a piece of CSST and perforates it that you're going to have a fire?
A If -- if there's gas on the line, and if you don't get gas, it's even worse because you're going to get an explosion.
Q What about the scenario that you just told me about where there were no combustible materials in the

Page 203

area?
A You had a fire. It just didn't spread. I --
Q You had a flame?
A You -- you had a flame, that's right. And --
Q Okay.
A And then to make matters worse, if that flame gets put out, something blows it out, then you've got a gas leak, and that's just not acceptable. You know --
Q Creates a scenario where you could have an explosion?
A It absolutely does. And, you know, you don't have those attributes with TechShield.
Q Okay.
A Negative attributes.
Q Because there's no gas involved with TechShield?
A That -- that's right. And TechShield is much more difficult to ignite than -- than leaking natural gas or propane.
Q Okay. Have you done any testing to determine the amount of spatter that comes off the aluminum laminate of TechShield?
A No, ma'am.
Q In the discussion section of Exhibit 93?
A Yes, ma'am.
Q On Page 7?

Page 204

A Okay.
Q You state in that first sentence, "It would be easy to list our findings. It's just peculiarities and vagaries of Mother Nature."
A Yes.
Q But in regard to CSST, you weren't willing to let that be the end of the question, were you?
A No.
Q But with TechShield, as I understand your opinion, you are?
MR. ELLIS: Objection.
A I'm not -- not -- not saying it's the end of the question. I'm saying that testing hasn't been done to establish that -- that there is -- there is a problem at all, number one. And number two, at some point in time, you know, TechShield -- and I say some point in time. At some level of energy, TechShield will fail.
Q (BY MS. MaCLEOD) So are you satisfied with an explanation that in -- in ruling out that TechShield could have been the cause of the fire at the Taylor home, that lightning is lightning and lightning causes fires?
A Lightning is lightning. Lightning causes fires. It has caused no fuel gas to leak. It is capable, hot lightning, of igniting combustibles, particularly Class A combustibles. It's -- it's really no surprise.

Page 205

Q Are there things that you're aware of that could be done to the TechShield product to protect it from being energized by lightning?
A In my opinion, such things would, you know, essentially make it unuseful for its intended purpose.
Q Okay.
MS. MaCLEOD: All right. It looks like we have about two minutes on this tape --
THE VIDEOGRAPHER: Actually, one now.
MS. MaCLEOD: And now would be a good time for a break so...
THE WITNESS: Okay.
MS. MaCLEOD: Why don't we go off the record.
THE VIDEOGRAPHER: Going off the record at 5:05.
(Break taken from 5:05 p.m. to 5:21 p.m.)
THE VIDEOGRAPHER: We're back on the record at 5:21 with Tape 7.
Q (BY MS. MaCLEOD) Mr. Goodson, I wanted to talk to you about your review of expert reports in this case. I understand from your earlier testimony that you did, in fact, review Rob McGraw's report?
A Yes.
Q And he's Plaintiff's cause and origin expert?

Page 206

A (Nods head affirmatively.)
Q As you sit here today, do you recall anything in that report that you disagreed with?
A Well, I think we -- there were initially questions regarding what wiring was in the area of origin. I think given what we know now, you know, the comments regarding arc through char and whether that area was in the area -- or that wire was in the area of origin or not, they were kind of -- kind of by the wayside.
Q Okay. Did you have an opportunity to review his supplemental report?
A Yes.
Q Did you review Gary Richetto's report?
A Well, if there was a report I was unaware of it. I thought it was more of just a disclosure.
Q So if there is a report you haven't seen it?
A To my knowledge, that's right.
Q Okay. Have you reviewed Tom Eagar's report?
A Yes.
Q And were there any findings or opinions in Dr. Eagar's report that you disagree with?
A Yes.
Q Will you tell me what those are?
A Yeah. Dr. Eagar tries to analogize that the TechShield should somehow be compliant with NFPA 780 in

Page 207

regards to the dimensions of, you know, thicknesses and things like that, and I -- I just totally disagree with Dr. Eagar on that.
Q Have you talked to Dr. Eagar about that?
A No.
Q Have you had an opportunity to talk to Dr. Eagar about TechShield?
A Dr. Eagar and I have probably spoken 30 to 60 words on TechShield, and that was at my lab last week.
Q Anything substantive?
A Yeah.
Q What did y'all talk about?
A Oh, he said -- he said, Mark, he said, I've got to take issue with you on part of your report. And I said, Tom, I said it was a poor choice of wording on my part with -- with the last paragraph where I stated -- you know, improperly stated what I wanted to express. And he said, well, I just didn't want there to be any hard feelings. I said, we're professionals, there is -- there's no hard feelings.
Q And that was pretty much --
A That was -- that was --
Q -- the sum total of what y'all talked about?
A Of the conversation. Is Dr. Eagar's report available? I mean, I -- what I do remember substantively

Page 208

is he and I disagree about 780. In addition, he -- oh, he also described a lot -- a lot of incidents of welding spatter described in NFPA 51B. My experience with welding slag, you know, is it's quite large particles. You can -- you can see them hit the ground. You can see them solidify. And no doubt, welding spatter is a problem. You -- you want good housekeeping because of it. I don't at all think that relates to TechShield.
Q Because you think the spatter or -- I think you just called it splatter, but the -- whichever you call it is not going to be large enough to see?
A I think it's going to be very minuscule, number one. Number two, I don't think there's a whole lot of mass involved compared to what you have when doing welding operations.
Q What about sparking, do you know what sparking is?
A Well, sparking is a luminous particle that comes about during an arcing process. And on that one, I -- I just don't know whether there would be sparks emitted from such a thin -- thin substrate or not.
Q Assuming for just purposes of this hypothetical that I'm about to give you, if there were sparks, are sparks capable of igniting a combustible material?
A If the combustible material is small enough,

Page 209

if -- say, granular size, if you will, I -- I can't imagine these sparks igniting anything of a -- of a large -- large piece of timber or anything like that at all. Maybe if there was some fine sawdust there, perhaps.

Q Okay. Other than the size of the spatter, other than the opinion that he offered, that it -- that it should be compliant with NFPA 780, or however he states that --

A Yes.

Q -- in his report, is there anything else that you recall taking issue with in regard to Dr. Eagar's report?

A No.

Q In regard to Ron Simmons's report, beyond the -- all the issues that we've already discussed with his testing and beyond the issue with the arc to char, is there anything else that you took issue with in his report that we haven't already talked about today?

A You know, he is -- he -- he -- I -- I don't want this to be a surprise, because he did testify he felt it was more likely than not that this house burned because of the presence of TechShield. And I -- I do not see that the statistical data as to where he can reach that conclusion, that's number one.

Number two, this is perhaps reiteration of what I've already said, but this formula that we learned in engineering school called -- the paper was called "The

Page 210

magic of I squared T," Mr. Simmons's testing is roughly putting about a thousand times more energy into the substrate than is -- than one would reasonably expect in a normal lightning strike. And so it's another reason. Just the actual quantity of energy that's being imparted that I don't believe his testing is -- is up to snuff.

Q Okay. And I think we did talk about that. Anything else that we haven't talked about and that you haven't mentioned just now that you can think of?

A He says, as I recall, in one of his papers that it can attract lightning. I -- I don't know where that's coming from, the presence of TechShield. I just don't understand it.

Q Is that in his report where he says that?

A In all fairness, I think that's actually in one -- in the paper he just published

Q Okay. Anything else?

A No, ma'am.

MS. MaCLEOD: Then that is all the questions that I have for now.

CROSS-EXAMINATION

BY MR. ELLIS:

Q Mr. Goodson, just a few follow-up questions.

We just talked about Mr. Simmons's testing again, and do any of those tests that were conducted by Mr.

Page 211

Simmons demonstrate that TechShield will catch fire in the event of a lightning strike?

A No.

Q Did any of them approximate what a lightning strike does to a home?

A No.

Q With respect to the one test that you referred to earlier which was the so-called impulse test?

A Yes.

Q How long did that one last?

A 20 milliseconds.

Q And did that test by Mr. Simmons in any way help to demonstrate that the Taylor house would catch fire because RBS was in it?

A No.

Q Why do you say that?

A The duration of that pulse was about a thousand times longer than, you know, say, a 20-microsecond pulse, which you might expect.

Q There was a lot of discussion earlier in the day about the arcing artifact that appeared on the ground wire of 14, dash, 3 conductor; do you remember that?

A Yes.

Q Okay. Do you have any opinion with respect to Mr. Simmons's opinion that the arcing artifact was as a

Page 212

result of an arc from RBS to the ground wire conductor?

A I have an opinion.

Q What's that?

A I think that's a possibility, but it's -- it's also a possibility. It's arcing to something else. I -- I -- I don't see how one could make that determination.

Q Now, you said you had an opportunity to see Mr. McGraw's original report; is that correct?

A Yes.

Q You saw his photographs?

A Yes.

Q You saw Mr. McGraw's supplemental report?

A Yes.

Q You saw his photographs?

A Yes.

Q You saw Mr. Simmons's original and amended reports; is that correct?

A Yes.

Q And the photographs that he was relying upon?

A Yes.

Q In any of those photographs, did you see any evidence that the RBS had caught fire?

A Well, other than the fact that the RBS is missing where there's fire, but where the areas where it's still there -- as an example, I remember a nail sticking out

and -- and there's ablation around there, but no fire. That's -- that's my recollection, sir.

Q All right, sir. So you didn't see any evidence of flame on the RBS or fire?

A No, not --

MS. MaCLEOD: Objection.

A -- not where it wasn't burned away from a fire already going.

Q (BY MR. ELLIS) In other words, you mean by that, for instance, where the fire caught in the area of origin, for instance, and burned away everything?

A That's exactly right.

Q All right.

MR. ELLIS: All right. That's all I have.

MS. MaCLEOD: I don't have anything further.

THE VIDEOGRAPHER: Going off the record at 5:33.

(End of proceedings at 5:33 p.m.)

STATE OF TEXAS)

I, Kelly Hassell, a Certified Shorthand Reporter in and for the State of Texas, do hereby certify that, pursuant to the agreement hereinbefore set forth, there came before me on the 7th day of December, A.D., 2012, at 9:09 a.m., at the offices of Cozen O'Connor, located at 1717 Main Street, Suite 3400, in the City of Dallas, State of Texas, the following named person, to wit: MARK GOODSON, PE, who was by me duly cautioned and sworn to testify the truth, the whole truth and nothing but the truth, of his knowledge touching and concerning the matters in controversy in this cause; and that he was thereupon carefully examined upon his oath, and his examination was reduced to writing under my supervision; that the deposition is a true record of the testimony given by the witness, same to be sworn to and subscribed by said witness before any Notary Public, pursuant to the agreement of the parties; and that the amount of time used by each party at the deposition is as follows:

Ms. MacLeod - 5 hours, 58 minutes,

Mr. Ellis - 5 minutes;

I further certify that I am neither attorney or counsel for, nor related to or employed by, any of the parties to the action in which this deposition is taken, and further that I am not a relative or employee of any

attorney or counsel employed by the parties hereto, or financially interested in the action.

"I further certify that before the completion of the deposition, the deponent and/or a party _____ did X did not request to review the transcript."

In witness whereof, I have hereunto set my hand and affixed my seal this ____ day of _____, A.D., 2012.

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In The Matter Of:

State Farm, et al v.
Louisiana Pacific Corporation

Gary Marshall Richetto
December 28, 2012

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION
Civil Action No. 5:12-cv-289-BO

STATE FARM FIRE AND CASUALTY COMPANY as subrogee of CHRISTOPHER TAYLOR,

Plaintiffs,

vs.

LOUISIANA PACIFIC CORPORATION,

Defendant.

VIDEOTAPED DEPOSITION OF GARY MARSHALL RICHETTO
TAKEN ON BEHALF OF THE DEFENDANT
ON DECEMBER 28, 2012, BEGINNING AT 8:31 A.M.
IN TULSA, OKLAHOMA

APPEARANCES

On behalf of the PLAINTIFFS:

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ALSO PRESENT: Jim Langlois, Videographer

REPORTED BY: Joanna Smith, CSR, RPR

INDEX

EXHIBITS

STIPULATIONS

It is hereby stipulated and agreed by and between the parties hereto, through their respective attorneys, that the deposition of GARY MARSHALL RICHETTO may be taken pursuant to notice and in accordance with the Federal Rules of Civil Procedure on December 28, 2012, at the offices of 401 South Boston Avenue, Tulsa, Oklahoma, before Joanna Smith, CSR, RPR.

THE VIDEOGRAPHER: We are now on the record. This is a videotape deposition taken of Dr. Gary Richetto. It is Friday. It's December 28th. The year is 2012. And the time is approximately -- or I'm sorry. The time is approximately 8:31 a.m. And you may swear in the witness?

GARY MARSHALL RICHETTO,
being first duly sworn to testify the truth, the whole truth, and nothing but the truth, testified as follows:

DIRECT EXAMINATION

BY MR. ELLIS:

Q All right. Dr. Richetto, would you state your full name for us, please?

A Yes. Gary Marshall Richetto.

Q What is your residence address?

A 9711 South Sandusky Avenue here in Tulsa, Oklahoma.

Q All right. You've been designated by the plaintiff to testify as an expert in this case.

A Yes, sir.

Q Do you understand that?

A I do.

Q Can you tell us what your opinions are that you expect to deliver?

Page 5

A I believe they're reflected in the report that I sent to Ms. MacLeod, Mr. Ellis. I'm of the opinion that based upon the only testing that I am aware has been done, there appears, indeed, to be a potential hazard and risk associated with TechShield Radiant Barrier. And in my opinion, based upon that, I believe the company had an obligation to warn users in some fashion that -- and recommend, in fact, that in high-density lightning-strike areas, the product should be -- at least one should consider a lightning protection system.

Q Any others?

A There may some additional comments in my report, but none that come to mind at the moment.

Q All right, sir. You provided Ms. MacLeod and provided us with your resume?

A I did, sir.

Q And I'd like to start with that.

MR. ELLIS: And I ask the reporter to mark this as -- do you know what the next exhibit is?

MS. MACLEOD: 111.

MR. ELLIS: 111.

(Exhibit 111 marked for identification.)

Q (By Mr. Ellis) Is Exhibit 111 a copy of your resume, sir?

Page 6

A Yes, sir, it is.

Q Is it up to date?

A Yes, sir, essentially.

Q All right. I see here that as far as your college education goes, you obtained degrees from Ohio University, 1964. That was a BFA. What does that stand for?

A It was Bureau of Fine Arts. The communication department was, at that time, located within the College of Fine Arts. It's now a separate college unto itself.

Q And you had a major there in communications; correct?

A Correct, sir.

Q You obtained your master's at Ohio University, again with a major in communications?

A That's correct, yes. Organizational communication.

Q All right. And you obtained your Ph.D. from Ohio -- I'm sorry -- Purdue University in 1969, again with a major in communications?

A Correct.

Q And so none of your college education or degrees relate to engineering?

A That's correct.

Page 7

Q All right. And you are not now licensed as a professional engineer anywhere?

A No.

Q If you turn to the second page under the category "Professional Appointments," I see that as -- you've been employed as president of Triad Associates from 1982 to the present; is that correct?

A Yes, sir.

Q What does Triad Associates do?

A Just to clarify, Mr. Ellis, Triad Associates is now essentially Gary Richetto. It is a Subchapter S corporation formed in 1982 with colleagues, and hence the term "Triad Associates" at that time. I -- the partners either retired, or I bought them out over the years, so I am the sole owner of Triad Associates. In answer to your question in terms of what Triad does, therefore what I do, my work, Counsel, is essentially done in thirds, you might say.

About a third of the time, I do training and development work, which would include some executive coaching. A second third is what I call facilitation services; that is to say, conflict resolution between departments, for example, or between -- most recently between union and management. And I facilitate also strategic planning sessions. And then the remaining

Page 8

third is involved with some combination of litigation support and/or assisting manufacturers in the development of warnings and instructions.

Q All right. Thank you. How many employees are there?

A Just myself now.

Q All right. You said that about one-third of your time is involved with litigation support and assisting manufacturers in connection with warnings?

A Yes, sir.

Q Is that right?

A Yes.

Q All right. Can you tell me whether or not there are any particular industries that you're involved with in terms of providing assistance to manufacturers?

A There have been several, Counsel. In fact, something that I could provide at some point would be a list of clients for whom I've developed warnings. But there's been really quite a range. I developed the warnings, for example, in the Glock 19 firearm handbook, designed probably a dozen or more warnings for a local company headquartered in Tulsa called the Crosby Group. And they make, oh, block and tackle equipment, load binders that you may have seen on

Page 9

flatbed trucks, you know, that type of thing. Another local client for whom I've developed a warning system is called Roto Hammer. They make an overhead valve device that can be turned on and off in gas piping systems and so forth. I've also designed warnings for a company called CERTEX in Houston, Texas; and they make polyethylene and nylon slings.

Q Is that slings?

A Slings.

Q What -- what kind of product is that?

A It's a sling simply that -- for tying down a load, for example, on a transport. There have been others, Counsel. Those are the ones that come to mind.

Q Okay.

A I beg your pardon. Another I can think of would be, I developed the warnings that are now -- that now appear on large spools of wire rope, what some folks may call cable. That was done for the Wire Rope Technical Board.

Q Have you been involved with developing or assisting manufacturers in the wood products industry?

A I don't believe so, Counsel, no.

Q Okay. What about the building products industry?

Page 10

A No, sir.

Q All right. I notice from looking at the articles that you have written over the years that a lot of the work has been done with respect to warnings in connection with alcoholic beverages; is that right?

A Yes, sir. We did a series -- there were a couple of others that may be listed. But a couple of colleagues and I, Dr. Goldhaber, G-O-L-D-H-A-B-E-R, and Dr. deTurck, D-E capital T-U-R-C-K, did a series of articles about alcoholic beverages, yes.

Q All right. Were you hired by any particular company in the alcoholic beverage industry?

A No, sir, we were not.

Q How did you come upon alcoholic beverages as a study subject?

A At the -- at the time of those publications, Counsel, I think that industry was considering types of warnings regarding pregnancy, for example, and other things that were in the news. And we were interested at that time -- there were a series of studies, and we simply manipulated different variables as part of those studies, color, size of font, signal word, and so forth. And we really had a captive audience, if you will, of students in the communication or psychology class at the State

Page 11

University of New York at Buffalo.

Q So you were doing this primarily as an academic --

A Yes, sir. Exactly.

Q -- publication?

A I think one or more were probably presented at the Human Factors and Ergonomics Society. And I'm sure I've referred to them in lectures and so forth.

Q All right. But you had not been hired by a company, for instance, within the alcoholic beverage industry to provide those reports?

A No, sir. No.

Q All right. Have you ever testified in connection with warnings in the alcoholic beverage industry?

A I don't believe so, Mr. Ellis, no.

Q Prior to 1982, you were the co-owner of MBC Associates. And what was the nature of that employment?

A That's a company, Counsel, that, unfortunately, the primary owner, J. Robert Costello, here in town passed away recently. But MBC Associates was -- we're no longer in business now -- an outplacement firm, meaning we would work with employers who, unfortunately, were having to let one

Page 12

or more persons go. And we helped that person through the transition, teaching them interviewing skills, networking skills, helping develop a resume, and, in fact, providing a physical presence for them while they were in the midst of their job transition.

Q All right. And are you still doing that?

A No, sir, no longer.

Q Okay.

A I became less and less involved over the years. And then since the founder recently passed away, we've simply closed.

Q Okay. And when did you stop doing that? I know your resume says to the present.

A Yes, sir, the present, indeed, was -- I probably need to change that, the next printing -- was, indeed, until October of this year.

Q Okay. From 1985 to 1995 here on your resume, you indicate you were vice-president of Safety Synergistics International. What kind of work did you do with them?

A For that ten-year period, Mr. Ellis, we developed a series of safety simulations that were, at the time, a relatively new kind of teaching technology, if you will. Very briefly, they consisted of paper and pencil materials, but the problem -- the

Page 13

person would be given a problem and then go through, identifying steps to be taken. For example, one, coincidently, was called fire. And it was to depict a home fire. And we developed a scenario that it's 2 a.m.; you're at home with a spouse and two small children; a fire breaks out. What do you do? You open the document up, and you're given a series of steps to be taken. And the challenge is to do the right steps in the right sequence.

And then typically they were used in small groups, so you would -- I don't mean to be long-winded, but to just give you an idea, you would have your individual opinion, and then you would get with a group, who may differ from your opinion, and you would hash it out to reach a group consensus. You then open the paper. And I think it was based upon the expert opinion of fire marshal. You were given the correct answers, so you got feedback in terms of how you did versus how the group did. So it was kind of double-loop learning. You learn about how to escape a home fire, but you also learn about group dynamics and the give and take.

Q So the study really was related to how somebody who's involved with a fire in their home would escape from a fire?

Page 14

A In that particular scenario, Counsel, yes, that was the -- that was the premise.

Q Can you give me some examples of some others that you dealt with?

A Let's see. We developed -- again, it was paper and pencil. One of the things that was of interest in that time frame was AIDS in the workplace. And we developed a document which really educated people about HIV, of the fact that you couldn't, you know, get it from shaking hands and so on and so forth, was one that we developed. Boy, it's been a while now, 1995. Those are the two that come most to mind. But those are the ones that we had developed. Safety Synergistics was already an existing entity at that time, and they had a series of similar types of exercises.

Q And your resume indicates that from 1980 to '82, you were director of human resources and administration with Agrico Chemical Company?

A Yes, sir.

Q And that was here in Tulsa, Oklahoma?

A That's correct, yes.

Q And could you describe briefly for us what your duties were there?

A I was essentially chief administrative officer, Mr. Ellis. In fact, The Williams Companies are still right here across the street. Agrico Chemical was the largest of the Williams subsidiaries at the time, about 2 billion in sales out of, I think, about 4 billion overall, if I recall the numbers. And my responsibility included oversight of human resources, risk management, office services, corporate purchasing.

Page 15

Q All right. The next item down shows that you were corporate director, organization development, for The Williams Companies in Tulsa from '75 to 1980; is that right?

A Yes, sir. That's when I took the move into the subsidiary.

Q All right. And could you briefly describe what you did as a corporate director?

A Yes, sir. Organization development. We essentially provided the behavioral-science-based consulting services, if you will, to Williams corporate staff and our operating companies in energy, pipeline, metals distribution. So we did such things as helping with executive search, putting people through one or more tests to determine the fit for a job, developed performance appraisal systems, conducted employee work satisfaction surveys, and the

Page 16

like.

Q All right. And from 1972 to 1975, you were an associate professor with the department of communication and organizational behavior at General Motors Institute in Flint, Michigan; is that correct?

A Yes, sir.

Q And briefly describe for us what you did then.

A Essentially taught the courses in introductory psychology, as well as communication and also in organizational behavior.

Q From '71 to '72, you were an assistant professor, department of communication and organizational behavior, again at the General Motors Institute in Flint, Michigan; correct?

A Yes, sir.

Q And how did that differ from the assignment we just talked about?

A It really did not. Simply, I was promoted from assistant to associate professor. And the only other difference, Mr. Ellis, would have been, back then, as the name would indicate, GMI was a wholly owned, fully accredited undergraduate college, three phases of engineering and industrial administration. It's now Kettering University. So the only

Page 17

difference, really -- my teaching load remained the same, but I became much more involved in conducting surveys and doing things elsewhere in the corporation, which is to say, the other operating divisions.
Q All right. And then prior to 1971, you served in the Army; is that right?
A I did, sir.
Q Your assignments are indicated here under "Military Appointments"?
A Yes.
Q Okay. Have you had any other employment that's not listed here?
A No, sir, I mean, with -- obviously with the exception of helping to work my way through college with those kinds of jobs.
Q Sure. Would it be fair to say that in connection with all of your employment, you have not been involved with the study of lightning?
A That's correct.
Q And you've not been involved with electrical engineering studies as it relates to lightning?
A Correct.
Q All right. Under "Current Research Activity," which is on page 4 of your resume, you indicate there that you're "presently conducting

Page 18

research, designing, developing, and testing product warnings and instructions for various manufacturers." You told us about the Glock, the Crosby Group, Roto Hammer, CERTEX. Are there others that you've worked with in connection --
A Yes, sir.
Q -- with developing product warnings?
A Yes, sir, a company in -- just outside of Dallas called Gearench, G-E-A-R-E-N-C-H. Developed a series of warnings for some of their products, essentially hand tools. Another that comes to mind is -- I've been asked periodically to review the warnings for U-Haul that appear in their users' guides. I've not been asked to do that for probably the last two years, I would guess. I'll certainly volunteer other examples if they occur to me, but those are the ones I can think of.
Q Thank you. You've indicated here some "Professional Society Memberships"?
A Yes.
Q With respect to those, are there any in which you hold leadership positions?
A No longer, Counsel, no. I held leadership positions in the International Communication Association at one time, but not in those that are

Page 19

listed here.
Q Okay. With respect to the International Communication Association, during what period of time were you a member of that?
A Probably, as I recall, Counsel, until the late 1980s, early 1990s. I was vice-president of the organizational communication division. And also in about that time frame, I was vice-president of the organization development division of the American Society for Training & Development.
Q You've mentioned a couple of times organization communication. What -- is that a particular term of art?
A Yes, sir. I mean, it is a major that can be taken at a variety of universities now. And, really, the concentration in organizational communication essentially is the study of the flow of information, if you will, within and/or between organizations.
Q And would you say that that is a matter in which you have particular expertise, the organization communication field?
A I believe so, yes, Counsel.
Q How often have you given testimony with respect to warnings in connection with litigation?
A I brought a list of my previous testimony,

Page 20

Mr. Ellis. I probably have averaged six or seven depositions a year. I probably -- closer to five or six, I guess, since about 1985.
Q I've got a list of those.
A Okay.
Q And we'll get to those in just a minute or so.
A Sure.
Q Are all of the cases in which you've testified cases in which warnings have been in dispute?
A Yes, sir, in some form. There may be an -- one or two exceptions to that, where the issue was that of communication and what message is being communicated that was not of a warning nature. But those have been very rare, and I can only think of one that's actually on my list in the last of couple of years that we may chat about if you desire. But I have specialized, if that would be the term, specifically in testimony regarding the adequacy of warnings and instructions, be they oral, face to face, written, or what have you.
Q All right. Approximately how many times have you testified as an expert with respect to warnings in litigation?

Page 21

A I'm sorry. I may have missed a question.
Q Approximately how many times have you testified in litigation with respect to warnings?
A Well, as I say, Counsel, since 1985, I've probably averaged five or six either depositions or trial testimonies in that course of time.
Q Since 1985?
A Since 1985.
Q Five or six per year?
A Per year on average.
Q Okay.
A Yes.
Q If you multiplied that out, what would that be, approximately?
A Oh, let's see.
Q I'm not going to hold you to an exact number --
A No, no. I understand.
Q -- here. I don't have a calculator with me.
A Yeah. Nor do I. I would guess it would be someplace in the 120 range, then, probably, something of that type.
Q All right. On the next page of your resume, on page 5, you'll see there's some "Editorial Appointments"?

Page 22

A Yes, sir.
Q And you've served as a member of an editorial board for the Journal of Group and Organization Studies; is that correct?
A That's correct, yes.
Q What type of journal is that?
A Essentially an academic journal involved, really, essentially with organizational communication. It may -- there were studies done, again, on job satisfaction. There were studies done on intra- or inter-organizational conflict. It would have been a number of different subjects that would be published in that journal.
Q Okay. So that journal primarily deals, again, with the organizational communications field --
A Yes, sir.
Q -- as distinguished from product warnings?
A Yes.
Q The next journal is Organizational Communication Abstracts?
A Yes, sir.
Q Is that right?
A Yes.
Q Is that also an academic journal?
A It is, sir.

Page 23

Q And does that also address the field of organizational communication as distinguished from product warnings?
A Yes, sir, it does. There may, indeed, be some warning articles that may have appeared in that journal from time to time, but that certainly was not its primary focus.
Q All right. And the last one here is Organization Development Journal?
A Yes.
Q And is that also an academic journal?
A It is, but there is also -- at least there was in that time frame, Mr. Ellis, a large practitioner readership as well, people who were in roles of organization development within organizations as opposed to in a university or college study.
Q All right. And is the focus of the journal primarily on organizational communications as distinguished from product warnings?
A Yes. And organization development, yes.
Q Do each of the journals use a peer-review process?
A Yes, sir, we do.
Q Did the peer-review process differ from journal to journal in any significant way?

Page 24

A Only in the sense that in the -- both the Organization Development Journal particularly, we may have had a number of non-academics review from time to time as well. An executive at IBM, for example, comes to mind, who was a peer reviewer on occasion for some of the articles we received.
Q And with respect to the articles that are listed here in your resume, were each of those peer-review articles?
A To the best of my knowledge, Counsel, yes. There may have been a couple -- I mean, for example -- well, even it would have been peer-reviewed. I was thinking of -- there's an article I called "Feedback in the Executive Suite" that really came out of some of the work that we had begun with The Williams Companies. But it was also peer-reviewed in the sense that it was sent to other members of the American Society for Training & Development for review or commentary before publication. But I wouldn't describe it as going through perhaps as stringent, if you will, a peer-review process as some of the others. That would be particularly true also of -- I have a number of them listed that goes, golly, all the way back to my dissertation research, "Who Has The Influence?" It was in a journal called Personnel,

Page 25

which is really aimed at human resource -- or was then -- human resource professionals. And I do not recall that being peer-reviewed.

Q With respect to the articles that you have written that were peer-reviewed and your experience on the editorial boards, the various journals that we've talked about, can you describe for us the peer-review process?

A Well, the peer-review process, as the name might imply, you get other experts in the given area of the author who is publishing. And typically in blind fashion, without the author's name or any kind of identification, it is sent to a board of reviewers that may number as -- the board's peer review, I remember, would probably be, oh, anywhere from a half dozen to maybe ten on the outside, whose job it was, not knowing -- again, you know, blindly, they would judge the caliber of the article, if you will, based upon whatever the subject matter was and the treatment of that subject matter.

Q And when you say judge the caliber of the article, would they then return comments or criticisms --

A Yes, sir.

Q -- to the editorial board?

Page 26

A Yes.

Q And what would then happen to the comments or criticisms of the piece?

A They would be shared with the author, again, on a blind basis -- the author would have no knowledge of who had reviewed his or her work product -- and either with the good news that it's been accepted for publication, or kind of the yellow light, if you will -- we can accept it for publication if you will address the following -- or, in fact, turning it down in terms of not seen as fit for publication for whatever reason.

Q And in terms of the people who would conduct the peer review, the reviewers themselves --

A Yes, sir.

Q -- would they be people -- as you've already indicated, would be blind to the author of the article; right?

A Yes.

Q In other words, the reviewers would not know who the author was?

A Correct.

Q And in most cases, the author probably wouldn't know who the reviewers were?

A Correct.

Page 27

Q And why do you want that in a peer-review process?

A I think to attempt to screen out or filter any kind of bias that might operate if they were rival universities, you know, lack of a better term, or if -- I'm trying to think of a case or two in which you had two authors who may totally disagree about some theory or whatever. But in answer to your question more directly, it really is to try to make it as free of bias as possible.

Q You want reviewers who are impartial in terms of their critique of the paper?

A Yes. Yes.

Q You wouldn't, for instance, find a reviewer within the same organization as the author of the paper?

A Probably not. Probably not. I mean, there may be exceptions to that. But I expect, yes, that would be the case. Certainly not on the same faculty, if you will, or whatever.

Q Right. Turn to page 8 of your resume under "Professional Papers, Panels and Symposia." Do you see that?

A Yes, sir, I do.

Q I note at the top of the list, there is a

Page 28

1998 national annual meeting of the Defense Research Institute in San Francisco; correct?

A Yes, sir.

Q And the description here is that you delivered a presentation on the application of communication theory to products warnings litigation; right?

A Yes.

Q What exactly did you present?

A I doubt it was on PowerPoint at that point in time. It may have been. But essentially -- and, in fact, Mr. Ellis, the way I both do my warnings design work, as well as analyzing materials that are provided in terms of litigation support, I almost always employ as an analytical framework the basic communication -- basic model communication theory, which is to say, a source, a message, a channel, a receiver, and from time to time, if it's available, feedback from the receiver to indicate the extent to which the message has been received and acted upon. What I presented at the DRI was an accident scenario. And I apologize; I can't even remember the specifics, but showing the folks who were in attendance how either from -- I guess in this case, particularly from the defense perspective, one could analyze the fact

Page 29

pattern and determine the adequacy of information which was provided.
Q Okay. And in terms of the information provided, do you mean warnings?
A Yes, sir, warning messages specifically. Most often in litigation support, the message component is that of some kind of a warning or instruction, yes.
Q So in presenting the hypothetical, do you remember now what type of accident it was you were using --
A I honestly don't, since I -- I simply had taken -- and it may have been -- I don't know -- something as basic as slip and fall or an automotive accident. I honestly don't recall what the premise was or what the scenario was. But the important point was to help the folks in attendance, many of whom were attorneys -- some who were not -- how one could take this analytical model and look at the source in terms, for example, of credibility. Would this source be one that's perceived as credible? And what we know after eons of research is that credibility is based upon the extent to which the source is perceived as having expertise, as being trustworthy, and as having good intent in terms of messages being imparted. And then

Page 30

we would --
Q Can I stop you there --
A Surely.
Q -- with a question?
A Oh, absolutely. Yeah.
Q And I'm sorry to interrupt, but --
A I don't mean to run on.
Q No. You mentioned the word "source."
A Yes.
Q And by source, what do you mean?
A Source, I mean, is the instigator, if you will, the supplier of information.
Q All right.
A Okay.
Q I'm sorry. Go ahead.
A And then showed them how a source could be judged or presented in terms of credibility. And then you could also take a look at the message, the extent to which the message was provided, at what readability level, for example, under what conditions, and so forth. So essentially walking them through how this model might assist in understanding what transpired from the time the source created and put a message through a channel and reached the receiver, how each of those components could be analyzed independently in

Page 31

an effort to assist a jury, for example, in determining an outcome.
Q Had you developed a hypothetical set of information, a warning, in connection with this presentation?
A Yes. Yes, exactly. And, again, I apologize. I cannot recall. It's been some time ago now, obviously. But the most important part of that presentation, Mr. Ellis, was, again, to show the application of the model that would assist both counsel, as well as the triers of fact, ultimately.
Q Uh-huh. And when you say the applications of the model, what do you mean?
A What I mean is that how either an attorney or through an expert could help a jury appreciate why this source would be credible based upon the criteria I mentioned earlier, for example, why this message, you know, was designed the way it was in an effort to reach this receiver, which is to say the readability level, the use of a pictogram or pictograph, if it would be helpful, and the criteria for judging, you know, what is an effective pictograph or icon. And then moving, again, to the channel. Was the appropriate channel being employed? And then finally, what do we know about this receiver in terms of the

Page 32

way he or she has interpreted information in the past? So essentially it was to show them how we could take those individual elements and drill down, if you will.
Q Okay. When did you first start getting involved with expert testimony in connection with product warnings?
A 1985.
Q And what was the occasion for getting involved for the first time?
A I had given a presentation, again, on communication theory and that model I just described, Mr. Ellis, to the Oklahoma Association of Defense Counsel at a resort called Shangri-La here in northeastern Oklahoma. And I'd given the presentation and had shown counsel in attendance how one could look at the fact pattern using the model, both from a defense standpoint and then doing the same thing from a plaintiff's standpoint. And I'll never forget it. An attorney came down the aisle after it was over and gave me his card and said, you know, I think maybe you can give me a hand. And that was my first experience.
Q Okay. I'm going to hand you now and ask the reporter to mark Exhibit No. 112.
(Exhibit 112 marked for identification.)
Q (By Mr. Ellis) This is captioned at the top

Page 33

"Previous Expert Testimony"; is that right?
A That is, sir. Yes.
Q Is this a list of the cases in which you've been involved during the period of time from 2006 to 2012?
A I believe -- at least my copy, Counsel, says 2008 as the last year.
Q Okay. I was just looking at the title, 2006 to 2012.
A Oh. That is -- that is, indeed, a typo. I think this probably goes -- it's my understanding Counsel, under the rules is -- and I have maintained it for the previous four years. And actually, I have all of 2008. So it goes back a bit before four years. But, yes, that is a typo. That should be 2008. I appreciate that.
Q Okay.
A I'll change it.
Q Under 2012, what I'd like to do here is to go through the cases and find out what the subject matter was --
A Sure.
Q -- that you were involved with, so --
A I understand.
Q The first case here is Wayne Watson, a case

Page 34

in the Federal District Court for the District of Colorado. Can you tell me what that was about?
A Yes, sir. It was a case involving what's called popcorn lung. There is a theory that has been developed, primarily from a woman at the National Jewish Hospital in Denver by the name of Dr. Rose, as I recall, who is of the opinion that diacetyl or diacetyl, however it's pronounced, which is a butter flavoring in popcorn, is capable of doing long-term and irreparable lung damage, and called popcorn lung.
Q And what was the name of the product and the manufacturer?
A The manufacturer -- well, in this case, Gilster-Mary Lee. I can't remember the name brand of the popcorn as I sit here. But they were a manufacturer for popcorn.
Q What kind of a warning was involved?
A There was none. Dr. Rose was of the opinion that there needed to be a warning.
Q And your opinion was what?
A My opinion was that from everything I could appreciate that was done, obviously not by myself but by the chemists involved, that the amount of diacetyl or diacetyl that would be present under microwaving conditions in someone's home is simply -- it was a

Page 35

trace amount, which unlike workers, who would be involved with diacetyl who were actually popping the popcorn and mixing the ingredients, had far greater exposures.
And I was of the opinion that while a warning was appropriate for them and, indeed, was in place at the workplace, based upon the scientific evidence that others had produced, not myself, that it appeared as though there was so little that would actually reach the consumer level that it would be over-warning, if you would.
Q Not much of a risk to consumers of the product?
A That was my understanding, yes.
Q Uh-huh. So you testified on behalf of the defendant in that case?
A That's correct. Yes.
Q The next one is Jennifer Logan. Can you tell me what that case was about?
A Yes, sir. This involved a -- what's called a hookah, not the kind that you smoke, but rather was used for underwater work. And the fact pattern was a gentleman who suffocated while retrieving golf balls at a golf course in Dallas.
Q What was the nature of the warning that was

Page 36

involved in that case?
A The warning was the need to make sure that one -- when one was using the motor to provide air through the hookah device, that it be turned away from the intake valve. The fact pattern, very briefly, Mr. Ellis, is that he essentially suffocated from carbon monoxide poisoning. And I was of the opinion that the warning on the hookah device itself, the warning on a float plate that the motor was housed on, and the warning on the engine itself were sufficient to have alerted the individual to the potential for harm.
Q And Heater Specialists?
A Yes.
Q What kind of case was that?
A Yes, sir. It involves a company, coincidentally, Mr. Ellis, here in Tulsa who was fireproofing a large vessel, and they had used a tarp because of the wind. And the tarp had caught fire, being close to a heater of some sort, and went up in flames and severely burned an individual. The case is still -- I listed this as having given deposition. Apparently, it is supposed to go to trial here in Tulsa sometime in the spring.
Q So you gave a deposition, but you haven't

Page 37

testified at trial yet in that case?
A Correct. I have not.
Q What's the nature of your opinion in that case?
A That there, indeed, should have been a warning that accompanied this tarp that was manufactured in India and that when set to flame, burns faster than a stack of papers. So from a source of ignition, this otherwise benign-looking tarp literally goes up in flames. One expert -- perhaps a little bit dramatically, but one of the chemists described it as cloth napalm in terms of its kindling point, again, far below that for paper at 451 degrees.
Q Glen and Tracy Coats, a case in the Tulsa County District Court?
A Yes, sir. And that was both -- actually, I guess that was just trial testimony. They did not take my deposition in advance. I was of the opinion that a warning that was prominently placed on a scissor-ladder device was adequate. And rather, what had happened, in my opinion, was, in human factors literature, what's called negative transfer, which is to say -- this is a gentleman who was quite comfortable in using a 20-foot scissored lift. But in this case, it was more like 35 feet, and I think he

Page 38

simply underestimated the poundage. And in an effort to move it to his truck, it fell on him because the proper wheel apparatus was not put down as it should have been.
Q And what was your opinion?
A That the warning was adequate. There was a very explicit pictogram at about eye level, which clearly identified the hazard and the need to follow the instructions.
Q All right. Frank Varone?
A Yes, sir. This involved a case with a very unique handgun, a Derringer, that was purchased. And it did not have a safety device or one would recognize it as a safety device, which is to say, upon the cylinder, if you can picture this, Mr. Ellis -- on the cylinder, there were notches between the cartridge holes. And in a safe position, one had to put it inside the notch, which was barely visible. And I was of the opinion that there needed to be, in the owner's manual, a clearer depiction of that being the only safe firing position. It fell out of the gentleman's pocket, and he was injured.
Q All right. Let's go to 2011, Wayne Watson.
A Yes, sir. That was deposition testimony that was reflected in the trial testimony of 2012.

Page 39

Q Okay. I see. Alicia Reyes?
A I'm trying to -- oh, yes. I'm sorry. This was the surviving spouse. The product, Mr. Ellis, is a -- an anti-icing material that's put down. And I'm trying to remember the fact pattern in terms of the warning element. Yeah, it's coming to mind now. If it's put down during snowfall, it's fine. It begins to melt the product. If it's put down in advance and one doesn't get the requisite snowfall, it becomes slippery unto itself. It was put down on several overpasses in the San Antonio, Texas, area, and the storm that was expected never developed. And I was of the opinion that those people who were applying it were not adequately warned by the manufacturer of the potential hazard created if, indeed, you know, the anticipated storm did not develop.
Q All right. So the warning you're talking about was one that would have been directed to the people who applied the substance to streets or roads?
A Yes, sir. And ultimately through -- and one, I think that -- obviously, the San Antonio Department of Transportation and so forth was identified. They had oversight responsibility, obviously, for doing that, but I believed used independent contractors as opposed to city trucks.

Page 40

I'm not sure. But in essence, yes, I was of the opinion that there was a communication channel, if you will, and certainly a stream of information that could have been devised that would have reached either those laying the material down or with oversight responsibility for laying it down.
Q Would there have been a need for a warning to people who traveled on the roads that the substance had been placed there?
A There were, in fact, warning barrels and so forth put up, obviously, to warn folks of impending storm. But I did not feel, nor do I at the time, that there was a way, really, to inform drivers, if you will, who simply placed confidence in this case in the transportation department to put down, you know, proper materials. I didn't see that it would be reasonable to try to reach an individual driver. But certainly for those people who were applying the product, yes.
Q All right. James and Deborah Karlin?
A Yes, sir. This involved, actually, a manufacturer of corrugated stainless steel tubing, commonly referred to as CSST.
Q All right. And who were you testifying on behalf of in connection with that case?

Page 41

A On behalf of the plaintiff at the request of plaintiff counsel.
Q And what was the nature of your testimony in that case?
A I have testified in I don't know how many, Counsel, as I sit here, but in a few CSST cases. And my opinion has remained constant that as early as the 2000-2001 time frame, that industry had clearly been put on notice that its product could experience what's called meltdown or melt-through, rather, in which in the event of a direct or indirect lightning strike, small pinholes or perforations appear in the skin, from which LP or natural gas can escape, which, of course, if it comes in contact with the source of ignition, can result in a fire or explosion.
So I have testified consistently that the manufacturer of that product needed to -- again, much like the driver that you indicated in San Antonio, I don't believe it's reasonable to assume that they can get to the individual homeowner who is considering CSST, but certainly there is a stream of intermediaries that could be educated in terms of the propensity of this product to be damaged by lightning.
Q Approximately how many times have you testified in CSST litigation?

Page 42

A They would probably be -- let me see if I can -- it appears, Counsel, that I have testified, including the case we just discussed, on two other occasions since the beginning of 2008.
Q Which cases were those?
A Well, maybe -- it may be a total too. I'm looking at 2008, Mr. Ellis. You'll see probably, oh, a little over halfway down, Honeywell/Anderson v. Gastite. That was a CSST case. Oh, and I'm sorry, the one immediately below Karlin, Becnel, the last listing there in 2009. So that gives us, what, a total of three, I guess?
Q During the period from 2008 to 2012?
A A total of four, I guess, Counsel. Also in 2010, Grimm and Grady v. OmegaFlex.
Q And prior to 2008, had you testified in any CSST litigation?
A Yes, sir, I had. I don't recall the years. But with the firm of Cathcart & Dooley, I testified. I believe the case was styled Hardy v. Gastite, a division of Titeflex.
Q On how many occasions did you testify on behalf of that firm?
A That -- oh, Cathcart & Dooley?
Q Yes.

Page 43

A That was the only -- to the best of my recollection, Counsel, I think that's the only CSST case. I have -- I worked at their request on, I think, one other case, but not related to CSST.
Q All right. So we're talking, then, about a total over the entire period of time that you've been giving expert testimony of five CSST litigations?
A Probably a bit more than that, Counsel, if we're talking about the whole time from 2008. I know I have testified in the offices, I want to say at least twice, of Carpenter & Schumacher in Plano, Texas, also in CSST cases, I believe, on at least two occasions, perhaps three.
Q Okay. Were any of these subrogation matters?
A Help me -- were the insurance companies --
Q Yeah.
A They may well all have been, to the best of my recollection.
Q Do you know which -- which insurance company was involved?
A I don't, sir. Farmers comes to mind on one case. I think perhaps State Farm. Those are the two that come to mind.
Q All right. And in each one of those cases,

Page 44

you testified on behalf of the plaintiff against the defendant manufacturer?
A That's correct. Yes.
Q If you go on farther down the list, after Karlin, you've got Becnel there. But I think you may have already told us that was another CSST case?
A That's correct. Yes, sir.
Q All right. And 2010, Steven Peterson?
A Yes, sir. It's listed as asbestos defendants. Excuse me. As I recall, Mr. Ellis, it would have involved a respirator manufactured by North Products or Norton.
Q And what was the nature of the opinion that you gave there?
A My opinion was that the collateral that went with the respirator, as well as the labeling inside the respirator, was adequate to alert folks to its proper use.
Q Amador Garza?
A Yes, sir. If it's the one I have in mind, a sad case. A young Hispanic boy decided to start up an ATV, as I recall, and he was electrocuted. He was working on the battery, as I recall, of an ATV and was electrocuted.
Q What was the nature of your opinion in that

Page 45

case?
A I believe I -- well, I know I worked at the request of defense counsel and that there were certainly adequate warnings on the battery itself, as well as in the ATV manual about the appropriate way to go about working on the battery. Unfortunately, this man was on wet grass, barefoot. And I don't know that -- I can't remember the fact pattern in terms of whether he had been taught to work on the battery or not. I believe he was going to surprise his father, as I recall, and took it upon himself to attempt to go out and work on it.
Q All right. Millie Jean Turley?
A Yes, sir. This was a case in which -- and I have testified in a couple of McNeilus cases that may show up later. McNeilus is a manufacturer of refuse trucks. And this was a case where -- yes, her husband, was pinned. He had not properly done the locking device on one of the refuse trucks. And the sweep arm had caught him and pinned him against the frame of the truck. And he, I think, ultimately was asphyxiated.
Q What was the nature of your opinion in that case?
A I think -- well, the opinion was that the

Page 46

warnings -- and there were a plethora of warnings. I don't think they were over-warned, but there were clear warnings, very visible, you know, to him at the time of the accident to not do precisely what he did in terms of failing to set the locking mechanism.
Q Ellen Grimm?
A Yes, sir. That, as you can see, was, again, a CSST case. And I believe the fact pattern would have been the same as the other cases that I've had familiarity with, which is to say, a lightning strike, either direct or indirect, compromised the CSST as to say holes were present, which allegedly led to a fire. And, again, I had the same opinion, that that industry needs to give the homeowner or the structure owner, albeit through intermediary sources, information allowing them to make an informed choice of whether they want to go to the extra expense of installing a lightning protection system.
Q Uh-huh. And why were there holes in the CSST in this case?
A You know, obviously, I'm not a metallurgist and certainly not an engineer. My understanding is that the electrical charge is sufficient that pinholes, perforations appear in the skin of CSST. And from that, if, indeed, natural gas is present,

Page 47

that fuel can escape, and if it comes in contact with a source of ignition, can result in an explosion or fire. And at least from my experience, the alleged fact pattern has been the same in all the CSST cases with which I've had experience.
Q Was it the same source of ignition in every case?
A It was alleged, I think, in virtually all the cases to have been the result of a direct or an indirect lightning strike.
Q Uh-huh. Okay. But what was the first ignited material?
MS. MACLEOD: Objection to form.
A Boy, you know, I don't recall. And it may have been the CSST or material nearby, and it arced to the CSST, Counsel. I don't remember all the fact patterns.
Q (By Mr. Ellis) Tonya Cox?
A Oh, yes. Sad case, Counsel. This was a woman who had a horse trailer, and they were going to a horse show, her boyfriend and the pet and, I think, two small children. And they had brought a generator and -- that should have been used only outdoors to power the trailer. And they had moved it into the back of the trailer. And a wall which was not sealed

Page 48

allowed carbon monoxide poison, which settled in, and obviously heavier than air, to the level at which her boyfriend and his children were in sleeping bags. The woman was fortunate enough to have been sleeping on a higher berth, if you will, some sort of storage cabinet. So she was sick, but survived. And the others, unfortunately, died.
Q And what was the nature of your opinion in that case?
A That the warnings, both on the trailer as well as the device itself, were adequate to have alerted someone to the hazard of the potential risk of carbon monoxide poisoning.
Q Tonia Roberts?
A Yes, sir. This is a case that -- it's been turned over to a different law firm, I believe, Mr. Ellis. It still may be out there somewhere. But it involved a product called Flexible Foam. I believe that's the nature of the product. Long story short, an individual had misused the foam and built himself a kind of a recording studio and had moved on. It was now being used as kind of a bonus room or something of the like. And two children were in there, having smoked marijuana. And the son, who had a history of playing with matches and fire, was lighting the foam

Page 49

and -- to watch it, you know, kind of evaporate, if you will. And there was a fire that ensued, and the children, with the exception of the daughter -- one of them was trapped inside -- I think it was a friend, not a member of the family -- and perished.
Q What was the nature of your opinion in that case?
A That the -- I'm trying to recall if there was a -- I believe my opinion, Counsel, was that the information that was -- you know, can I get back to you on that? I honestly don't recall whether it was a package insert or it was something on the foam itself, but it certainly dealt with -- you know, specifically with the area of warnings.
Q Uh-huh. And you testified on behalf of whom?
A I believe on behalf of defendant.
Q All right. Larry L. Newkirk?
A Yes, sir. This was a case -- ConAgra Foods. I believe this was a case of spontaneous combustion, if I'm not mistaken. ConAgra made a vegetable-oil-based product and that if you wiped up spillage with towels, for example, and then put them in the dryer, unless all the residue was gone, indeed, if you stacked them up, there was enough heat

Page 50

generated where literally the towel could spontaneously combust. And I testified on behalf of -- at the request of plaintiff's counsel and was of the opinion that there was not adequate warnings on the product regarding spontaneous combustion.
Q All right. Let's go to 2009. China Star Oil Company?
A Yes, sir. This was a well blowout in Texas, as I recall. And I don't fully remember the fact pattern, Mr. Ellis. I apologize. I believe it was a down-hole tool that was being used and some sort of a hook. And I believe, Counsel, that I testified at the request of plaintiff's counsel that the tool should have been accompanied by more prominent or better warnings and instructions regarding its use. And, again, I don't recall the specifics beyond that.
Q All right. Oklahoma Cardiovascular Associates?
A Yes, sir. This involved a fire in the maintenance area of a large cardiovascular -- cardiovascular practice in Oklahoma City. And it involved plugging in a battery-powered tool to recharge the battery. And I testified on behalf of defense counsel that the battery warnings, in terms of its proper use and not to leave it plugged in for long

Page 51

periods of time, were adequate.
Q Katherine Craig?
A Yes, sir. This involved the case of a piece of Crown equipment, a form of industrial truck, if you will, that a woman was injured by in a tip-over accident. And I was of the opinion that, again, the warnings that were on the device were adequate to alert her to its proper use.
Q What was the equipment, again?
A The equipment was -- there's a specific term, Mr. Ellis, that isn't coming to mind, unfortunately. But it's essentially a -- an interior industrial truck-like -- that one can raise -- I mean, you would see it in warehouses, for example, which was the case here. It's got a specific term of art. But where you can obviously -- a crane-type product where you can lift packages and put them up on higher shelves. A crane would be the generic name, but they have a specific term of art for this particular piece of equipment.
Q And this was a tip-over accident --
A Yes.
Q -- you said?
A Yes.
Q Celeste Neaves?

Page 52

A Yes, sir. Or Neaves, I guess, was the proper pronunciation, as I recall. And this was a gentleman who was killed by a piece of equipment in which one of the transport arms came down and struck him as he was standing near the carrier bed that it was placed upon. And in that case, I worked at the request of plaintiff's counsel and was of the opinion that there should have been an on-product warning regarding a locking device that was otherwise, you know, not prominent.
Q All right. Ramon Canaan?
A Yes, sir. Again, working with defense counsel representing Crown Equipment Corporation. And if I recall correctly, this was an incident in which an individual backed into a bay in a warehouse, and it struck the back of his head, as I recall.
Q And your opinion in that case was what?
A Again, that the warnings on the equipment were adequate about backing up and the like.
Q All right. Charlette Lachney?
A Yes, sir. And this was one that I had in mind earlier when I indicated that, at least in this case and one more that I can recall, I really talked about communication and the adequacy of a message that was not necessarily -- in this case, indeed, not at

Page 53

all -- a warning. Actually, this was an age discrimination case against Target in Oklahoma City.
Q And what was the nature of your opinion?
A The nature of my opinion was that the meta-message, M-E-T-A, the message within a message, if you will, that was being communicated by Target was, indeed, reflective of the fact that there was age discrimination, which is to say, specifically, all their training films were with young folks. Their motto was, "fast, fun, and friendly" or something of the like. There was anecdotal history of supervisors communicating their desire for younger workers and employees and that all of the data that I had looked at, when analyzed from a communication-theory vantage point, I was certainly satisfied that, indeed, there was discrimination against older members of their work force.
Q All right. Before going to 2008, why don't we take a short break?
A Sure.
THE VIDEOGRAPHER: Off the record. The time is 9:39.
(Recess taken from 9:39 to 9:46.)
THE VIDEOGRAPHER: Back on the record. The time is 9:46.

Page 54

Q (By Mr. Ellis) All right, sir. Let's go to 2008. The first one there is AMCO Insurance Company?
A Yes, sir. That was very similar to the -- in fact, almost identical, Counsel, to the fact pattern I mentioned in that earlier case with ConAgra, which is to say, spontaneous combustion.
Q Of the same product?
A Vegetable oil. Yes, sir.
Q The vegetable oil?
A Yes.
Q All right. Millie Jean Turley?
A Yes, sir. If I recall this one, again, it was a McNeilus case. And this gentleman was driving not one of their refuse trucks, but another cross-country van of some type. And he --
Q Oh, okay. This is the deposition in the earlier case --
A Exactly. Exactly.
Q -- in 2010. All right. The next one is AMCO Insurance Company again?
A Yes, sir. That was simply deposition testimony versus the --
Q In the same case we talked about --
A Exactly.
Q -- just a few seconds ago? Okay.

Page 55

Honeywell/Anderson is a CSST case; is that correct?
A That's correct. Yes, sir.
Q Same opinions as --
A Yes.
Q Same fact patterns as before?
A Exactly. Yes.
Q Steven J. Headley?
A Boy, I apologize, Mr. Ellis. I'm drawing a complete blank on that one. I -- I apologize. Nothing is registering.
Q All right. Pablo Cabrales-Lozaro?
A Yes, sir. It was a case I worked at the request of defense counsel. And I was of the opinion that the collateral that went with the tires manufactured by Bridgestone/Firestone were adequate to talk about the importance of proper inflation, checking for tread, and the like. These were tires that were simply worn down to the point where there was a tire explosion and a vehicle wreck as a result.
Q Uh-huh. Jennifer Choi?
A Yes, sir. Working at the request of defense counsel representing Budget Rent A Car System. Don't remember the full fact pattern except that she had overloaded, as I recall, a vehicle in such fashion that it became unstable. And I was of the opinion

Page 56

that there were clear admonitions regarding how to store items.
Q All right. Anthony Aponte?
A Yes, sir. Working at the request of defense counsel representing Illinois Tool Works. This was a case where a -- coincidentally, they're here in Tulsa as a distribution center. A Hilti gun, H-I-L-T-I, which is a nail gun, was in a loaded fashion inside a bag that a construction guy was carrying. He dropped it. The gun went off, and he was injured by the nail. And I was of the opinion that, again, training collateral that went with the -- and instructional collateral that went with the device clearly talks about the importance of never carrying it in a loaded position and never to transport unless the nails, obviously, are separate from the gun.
Q So your opinion was that the warning was adequate in that case?
A Yes.
THE WITNESS: I've been known to walk out with those, so --
THE REPORTER: You know the drill.
THE WITNESS: Keep me honest.
Q (By Mr. Ellis) And I only have one copy of this, so --

Page 57

MR. ELLIS: Let me ask you to mark that as Exhibit 113.
(Exhibit 113 marked for identification.)
Q (By Mr. Ellis) I'm showing you what's been marked as Exhibit 113. Can you identify that for us, please?
A Yes, sir. This is a correspondence from myself to Ms. MacLeod dated December 23rd of this year. And subsequent to my report, Mr. Ellis, of October 13, I was sent other materials, which I reviewed. And this simply documents the fact that I had received and reviewed them. I might mention also, Counsel, that in addition to this, which lists everything I have reviewed after my report, I also received by e-mail the file of Dr. Timothy Rhoads, R-H-O-A-D-S, which I also have looked through.
Q Did you provide comments to Counsel about the file of Mr. Rhoads -- or Dr. Rhoads?
A No, I did not.
Q All right. Was there anything that you found of interest in Dr. Rhoads' file?
A I believe I'd already seen his report. His file, to the best of my recollection, Counsel, involved some deposition summaries done by someone on his staff, as I recall. And having reviewed the

Page 58

depositions, I simply glanced at that. I think there was maybe also a copy of an article that he had presented with colleagues at the Human Factors and Ergonomics Society meeting. Beyond that, there was nothing else that stood out. It was simply his file contents.
Q All right. In Exhibit No. 113, which is a letter that you sent to Ms. MacLeod dated December 23, 2012, you indicated then that you had received and reviewed the expert report of Thomas W. Eager; is that correct?
A Yes.
Q The supplemental report of J. Robert McGraw?
A Yes, sir.
Q The supplemental expert report of Ronald D. Simmons?
A Yes.
Q And the deposition transcripts of Goodson, McGraw, Scardino, Simmons, Christopher Taylor, and Rosaria Taylor?
A Correct. Yes, sir.
Q All right. Were you aware from reading the reports of Mr. McGraw and Mr. Simmons that they had changed their opinions from the earlier reports that they had furnished in the case?

Page 59

MS. MACLEOD: Objection to form.
A I know that they had supplemental reports, Counsel, and I can't -- I can't really recall the substance of those, whether they had altered or modified or simply amplified opinions.
(Exhibit 114 marked for identification.)
Q (By Mr. Ellis) I'm showing you now what's been marked as Exhibit No. 114.
A Yes, sir.
Q And is that a letter dated October 13, 2012, with your expert report attached?
A It is, sir.
Q All right. And here on the first page of the exhibit, you've indicated what materials you've reviewed in connection with the preparation of your report; would that be right?
A Yes, sir, it would.
Q On the second page of the report, you indicate that you have reviewed the materials and the "... fact pattern of this litigation within the analytical framework of communication theory, incorporating the elements of source, message, channel, receiver, and feedback." Can you tell me what you mean by that, please?
A Yes, sir. The framework that I'm referring

Page 60

to there, Counsel, is the one that I described, I hope, somewhat visually, but orally to you a bit earlier. It's the basic model of human communication. And the references that I provided, David Berlo, Schwartz and Driver, and so forth, are materials in which you would find that model presented and discussed.
Q Over at the top of the next page of your report, you indicate that you've "... critiqued, designed, developed, and field-tested dozens of product warnings/instructions for various manufacturers of consumer and industrial products ...." Do you see that?
A Yes, I do, sir.
Q And have you identified all of the ones that you can presently recall for us today?
A One more comes to mind, Counsel, and let me think. A machine called Artograph used by muralists. And very briefly, Mr. Ellis, what it consists of is a kind of a light housing in which a muralist -- or it doesn't have to be a mural, but typically so -- places a three-dimensional object, and it can be then amplified on whatever they are drawing or painting on. And long story short, in fact, that was one of the articles that we talked about earlier or perhaps made

Page 61

reference to. In the event that the light housing is not locked in place, but it's spring -- it's on a spring pedestal. And in the event that it isn't locked in place, if one bumps it, it can come up at a pretty high rate of speed.

A muralist in California was using it and bumped against it. And anyway, it hit her in the face, broke her glasses, black and blue. And she didn't file any kind of a legal complaint, but simply alerted the manufacturer. And the manufacturer had gotten my name from counsel, I think, in Minneapolis and asked me to develop a warning that I thought would adequately alert someone to the importance of ensuring that it's locked in the position. So we did an experimental study in which I designed two different versions of the warning, in which we used what we term valence, positive or negative.

And we tested it on, I think, about -- I think, all told, a sample of about a hundred muralists and/or art students in and around Buffalo, New York, and, indeed, identified the one that best communicated to them. And what made it worthy of publication at that time was that most of the warnings literature talks about stating things in a positive vein. But sure enough, we found in this case, at a statistically

Page 62

significant level with that sample, that the negative valence had greater impact, never do, never do, never do, as opposed to always. So that was, I think, in fact, one of the first warnings that I had designed.

Q All right.

A And, again, as I indicated before, Mr. Ellis, I mean, I'll certainly volunteer other examples of warnings that I've developed --

Q Sure. Yeah.

A -- as they come to mind.

Q Yeah, I'd appreciate that.

A Okay.

Q All right. Again, on that page, under the "Opinions and Rationale," do we find some text that goes with the opinions that you're expected to deliver at trial in this case?

A I believe so, Counsel, yes.

Q All right. In the first paragraph, you acknowledge that having reviewed the expert engineering reports on both sides of this, that there is a "... disagreement regarding the propensity of the subject LP TechShield Radiant Barrier to increase the likelihood of a dwelling fire in the event of a direct or indirect lightning strike"; is that right?

A Yes, sir.

Page 63

Q So you've read Mr. Goodson's report, for instance, and you know that his opinion is that this material is not hazardous and doesn't create any greater propensity for a fire in the event of a lightning strike?

MS. MACLEOD: Objection to form.

A I think so, Counsel. And I'm not quibbling with your characterization. I'm not sure -- I think Mr. Goodson was of the opinion that he had not yet seen enough evidence that he could state one way or the other. I think he, for lack of a better -- I don't mean this in a pejorative sense -- kind of took the Fifth on that. I think it was more of a wait and see, but I may have misunderstood or misremember what he testified to. But he certainly was, as you say, of the opinion that there is no proven sufficient risk thus far.

Q (By Mr. Ellis) All right. And you read Mr. McGraw's report?

A I did.

Q Correct?

A Yes.

Q Did you read his deposition transcript?

A I did.

Q So you know that he was not able to come to

Page 64

the opinion that the radiant barrier is a hazardous product?

A I believe that was --

MS. MACLEOD: Objection to form.

A I believe that was his position, yes, again, that there just simply wasn't enough evidence for him.

Q (By Mr. Ellis) And Mr. Scardino, you read his report and his expert deposition testimony?

A I did.

Q And you know that he didn't come to the conclusion either that the material was hazardous?

A I -- that's correct, yes.

Q All right. You did read Mr. Simmons' report; correct?

A Yes.

Q And Mr. Simmons' deposition testimony; is that right?

A Yes, sir.

Q And you know that he's one that has determined that the material is hazardous; is that correct?

A Yes, Counsel. I don't know that he's the only one, but he's the only person whom I've seen quoted or whose testimony I've reviewed that is of that opinion.

Page 65

Q Okay. What other ones do you know of that have come to the conclusion that the RBS, radiant barrier material, is hazardous?
A I don't except, as I recall, Mr. Ellis, he may have made reference to -- I don't know by name, but other engineers within the McDowell Owens firm who apparently either shared his opinion or had that opinion independently. So I guess what I was referring to is, I don't know that he is the only one who has taken that position.
Q What about outside the McDowell Owens?
A I don't believe there -- at least nothing I've seen has offered opinion from anyone outside of that research engineering firm.
Q All right. What do you understand Mr. Simmons' opinions to be?
A I can't speak, obviously, as an engineer would. If I were to summarize them from my perspective, I think Mr. Simmons is of the opinion that this particular material can, indeed, be hazardous, can, indeed, be impacted by lightning to the point where it is capable of being energized, being a path to ground of the lightning strike, and can, in fact, ignite combustibles near it. I'm sure he would put it in different terminology, but that's

Page 66

my understanding of his position.
Q Okay.
A And that he has, to his satisfaction, evidence, having tested this material with an automotive battery or perhaps an additional form of energy, that the product can burst into flames. And I think, as he indicated, whether one uses a match or a blow torch, the material can be ignited.
Q What do you understand the opinions of the LP experts with respect to the properties of RBS to be?
A By LP experts, you mean --
Q Right. Mr. Goodson --
A -- third parties?
Q Mr. Goodson, yeah. Third parties like Mr. Goodson and Mr. Scardino.
A Yes, sir. I believe Mr. Goodson's position is that under certain circumstances, that, indeed, TechShield will fail. It can, indeed, be ignited. I think his opinion is, so can a number of materials that one might find in a dwelling. Mr. Scardino, I believe, also ascribes to the notion that lightning can result in the transfer of energy and fire on a number of materials, one of which is TechShield. And I think you asked about Mr. McGraw?

Page 67

Q Uh-huh.
A I think Mr. McGraw was of the opinion that this material can be a conductor, can provide a path to ground, if you will, and can, in fact, come into contact and influence other combustibles in its vicinity.
Q Do you know how long the LP TechShield product has been on the market and used in homes?
A I don't, Mr. Ellis, no. I've learned somewhere that oriented strand board or OSB has been prevalent for quite a long time in the construction industry. And I -- for some reason, I'm thinking it may be within the last decade that this material has arrived on the market. I believe, in large part -- and the reason I would put that time frame on it, within the last decade, if not more recently, it is -- somewhere I gleaned the notion that it was really, in part, a response to energy conservation and in making the homes more energy efficient, if you will, which I think has been relatively new, I'd say, within the last decade.
Q Would it be important for you, in connection with reaching your opinions, to know how long the product has actually been on the market and been in use in homes?

Page 68

A Yeah, probably of interest, Mr. Ellis. I -- again, I -- I don't think it would influence my opinion as I've stated it. I mean, I think it's been out there for some period of time. But, again -- and I may be wrong -- I want to say within the last several years, if you will, to perhaps a decade on the outside.
Q Let's speak about it on two different levels, the first level being the level of your drawing some sort of conclusions with respect to warnings in this case.
A All right, sir.
Q Would it be important for you to know if the product had actually been in use in homes for over two decades without anyone calling it or determining that the product was hazardous?
A It might, Counsel, if, indeed, there had been, I think, some hazard analysis conducted, some testing of the material in that interim period that would have, indeed, you know, rendered it safe, if you will, for lack of a better term. My experience has been, with some products, there is a requisite time in the marketplace in which they exist before, in fact, a hazard is potentially identified.
Q What's that requisite period of time?

Page 69

A It really varies, Counsel, from product to product. I don't think there is a specific time frame. I just know from experience that in other cases I've been involved in and were looking at the history of warnings and warnings development, that there are certainly products that have been in the marketplace for some time in which their hazardous nature has not been clearly identified.

Q What about a situation like this, where you've got a product that's been used in homes for over 20 years, and there have been hundreds of thousands and millions of lightning strikes during that period of time. Does that bear on this issue of whether or not the products have been on the market a requisite period of time?

MS. MACLEOD: Objection to form.

A I don't think entirely, Mr. Ellis, and the reason for that -- and I am familiar with some fire incident reports and -- that have been conducted and reported. Very often, the specific cause, you know, has not been identified. So I guess what I'm saying is, it might influence my opinion to a degree to know that, gee, it's been out here for some period of time. On the other hand, just as, I think, Mr. Goodson testified, I think Mr. McGraw testified, it could well

Page 70

have been involved in fires which they, in fact, investigated, and it really never dawned on them to, you know, investigate that particular product.

Q (By Mr. Ellis) What about on the level of Mr. Simmons' opinions? Does the fact that for 20 years this product has been on the market, been used in homes, and the fact that one group of engineers determines that there's a risk to this material after 20 years of being on the market, does that -- is that of any interest to you in reaching your opinions?

MS. MACLEOD: Objection to form.

A Well, I'd be the first to say, Mr. Ellis, whether it's this case or my opinion or anyone else's, there certainly is value, I think, in the multiple investigators investigating a particular product, certainly, yes, and perhaps others outside of McDowell Owens will begin to do so. On the other hand, I think the identification of a hazard has to begin somewhere. And it occurs to me that if, indeed, there is validity to the tests that Mr. Simmons and his colleagues have run, the only folks, to the best of my knowledge, who have tested this material seem to be of the engineering opinion that, indeed, the hazard or the risk is there.

Q (By Mr. Ellis) Well, let's talk about the

Page 71

testing, then, both as to the quality, the significance, and validity of Mr. Simmons' testing. You've already indicated that you're not an engineer.

A That's correct. Exactly, Counsel.

Q You're not an expert in lightning.

A True.

Q You're not an electrical engineer. You've never testified as to whether or not a lightning-induced fire in a home is caused by any particular kind of material, whether it's CSST or RBS; right?

MS. MACLEOD: Objection to form.

A From an engineering vantage point, yes, sir. That is correct.

Q (By Mr. Ellis) You've -- with respect to CSST, your experience has really been with respect to adequacy of warnings?

A Yes, sir.

Q Right?

A Yes.

Q So you're not really in a position, are you, to give an opinion as to the validity of Mr. Simmons' test?

A I am not, Counsel, no. As we both indicated, I know quite clearly, you know, I am not an

Page 72

engineer. What I will say is, whether it's past testimony or developing my own warnings instructions, facilitating hazard analysis sessions with clients, I leave it to the engineers, you know, to run their tests and leave it to other engineers to judge the adequacy of those tests. In this particular case, I was struck by the fact that McDowell Owens, while you say -- while you indicate may be the only firm that has done so, they also are the only firm that have done any kind of that type of testing on the product, as I best understand it as I sit here now.

Again, the validity of their testing is really outside of my area of expertise. But what I am here to say is, if, indeed, their testing is validated in the sense that this risk is there, this hazard is present, then I believe it behooves the manufacturer to develop a technical bulletin or a safety bulletin to alert folks to the fact that there can be this increased risk, if you will.

Q So if their tests are valid --

A Yes, sir.

Q -- in connection with making a determination that this material is hazardous, then the manufacturer would have a duty to determine whether or not a warning was appropriate?

Page 73

A Yes, sir, although I think also that, like any manufacturer, I think that before one places a product in the stream of commerce, one does, in fact, a hazard analysis to identify, are there particular hazards that are likely to be confronted during intended use or -- I know it's a legal term of art as well -- foreseeable misuse? I think every manufacturer is obligated to that task. But, again, I am not and cannot speak as an engineer in terms of the validity of that test. But it strikes me in this case that McDowell Owens are the only folks who've made any effort to determine whether, in fact, this particular product has a propensity to be compromised by direct or indirect lightning strikes.

Q Uh-huh. Had you ever worked with the McDowell Owens firm before?

A I have not. I recognize the name, Mr. Ellis. In fact, I think I shared with Ms. MacLeod this morning -- we grabbed a quick breakfast -- that they were not a new name to me. So I've seen them -- and actually, it would be as part of litigation support. Their national or international reputation or the quality of staff, I know nothing about.

Q Okay. So you can't draw or give us any opinion as to the quality of the work of McDowell

Page 74

Owens as an engineering firm?

A No, sir. It would be well beyond my area of expertise.

Q That's -- that's outside your expertise?

A Yes, sir.

Q What about as to Mr. Simmons individually? Had you ever worked with Mr. Simmons before?

A No. It was a new name to me.

Q Okay. And so you're not able to give an opinion as to the quality or validity of his work based upon your knowledge and experience with him?

MS. MACLEOD: Objection to form.

A No, sir. I noticed that in one or more states, he carries a certification as a professional engineer, as I recall. Beyond that, I have no knowledge of his personal background or competency.

Q (By Mr. Ellis) Were you aware of the fact that Mr. Simmons had never obtained an engineering degree from any university?

A I recall that from his deposition, yes.

Q All right. Does that impact your view of the validity of the testing of McDowell Owens?

MS. MACLEOD: Objection to form.

A No, sir, it doesn't. I mean, I -- I don't know. I know they are a firm -- the only thing I know

Page 75

about McDowell Owens is that they are a firm that does, as I understand it, quite a bit of testing on a multiplicity of products for various clients and obviously provide litigation support from time to time. Beyond that, I don't know anything about them. But back to your point about being degreed or not, as -- again, I'm not here to judge, but he does have the professional engineer certification, which I -- certainly, obviously, requires some level of proven competence, I assume. But there have been, I think, also a number of other folks who don't have degrees who are quite capable of performing.

Q (By Mr. Ellis) Had you done any investigation yourself into Mr. Simmons' competence in this area?

A No, sir. I could not judge it, I expect.

Q All right. And had you done any work to investigate independently of what you saw in Mr. Simmons' report and in his deposition testimony --

A No.

Q -- whether or not the testing which he did was valid?

A Again, Counsel, I would not be in a position to judge that.

Q Okay. But did you do any independent work?

Page 76

For instance, did you go to any engineering firm and ask them, look at Mr. Simmons' reports here and his expert testimony and tell me whether or not you believe what Mr. Simmons has done is valid?

A No. I have not.

Q All right. Would it have been important in connection with Mr. Simmons' test to try to get as close to the impact of an actual lightning strike?

MS. MACLEOD: Objection to form.

A My understanding, Counsel, and certainly, again, with no engineering expertise -- but it -- my take in the vernacular of the testimony of all of the engineering experts was that lightning cannot be replicated under experimental conditions. Now, having said that as -- I recall Mr. Goodson offering in his deposition that there are firms which, in fact, can conduct, albeit quite expensively, as he put it, the -- essentially that can replicate lightning, was my interpretation of what Mr. Goodson offered. So I guess I'm left, as an non-engineer, with the observation that if it can't be replicated, can you, nonetheless, conduct investigation in terms of the effect of electrical current on the material in some fashion? And I believe that's, to the best of my understanding, what Mr. Goodson and folks at McDowell

Page 77

Owens have done.
Q (By Mr. Ellis) You mean not Mr. Goodson, but Mr. --
A I'm sorry. I beg your pardon. Mr. Simmons. Thank you.
Q All right. Do you know that Mr. Simmons has taken the position that he wasn't actually even trying to replicate the impact of a lightning strike in his test?
MS. MACLEOD: Objection to form.
A I think, again, based upon what at least I understand to be engineering consensus, that that is not possible, but I believe his position was also, but it is not important. What he believes his tests have shown is that electrical energy brought to bear on the TechShield Radiant Barrier can, in fact, cause it to be ignited.
Q (By Mr. Ellis) And with respect to that, the ignitability of the material in Mr. Simmons' test, are you aware of the factors that go into the amount of current that's actually put into the material?
A No, sir, I am not.
Q Okay. So you're not familiar with the formulae that relate to it, the amount of the current, duration, and that sort of thing?

Page 78

A I am not.
Q Okay. Do you know whether Mr. Simmons' test even remotely approximated the duration of a lightning strike?
MS. MACLEOD: Objection to form.
A I do not. I recall that it was the opinion of Mr. -- at least Mr. Goodson that it did not. Beyond that, I don't recall.
Q (By Mr. Ellis) Well, did that have any impact on you, in terms of reliance upon Mr. Simmons' test, that what he was doing in no way approximated the duration of a lightning strike?
MS. MACLEOD: Objection to form.
A No, Counsel. And, again, certainly from an engineering standpoint or vantage point, I really couldn't comment on that. It's totally outside of my area. I will say, though, that having said that -- and you mentioned Mr. Goodson's position -- as I recall, and I remember Mr. Goodson's name from earlier CSST cases -- but, indeed, had tested that material without replicating lightning or finding it necessary to do so. So to the extent to which that's common practice in the electrical engineering profession, I don't know.
Q (By Mr. Ellis) I'm talking specifically now

Page 79

about the duration.
A Yes, sir.
Q The time in which the current or heat is supplied to the material; okay?
A Yes.
Q Now, with respect to that, do you know whether or not what Mr. Simmons did was several orders of magnitude greater, in terms of duration, than what a lightning strike would be?
MS. MACLEOD: Objection to form.
A I know that's the opinion of Mr. Goodson. But I don't have any independent opinion.
Q (By Mr. Ellis) You know that from reading Mr. Simmons' deposition transcript too, that he admitted that the duration of time that he applied a current, a heating source, to the material was several orders of magnitude longer than a lightning strike would be?
MS. MACLEOD: Objection to form.
A Yes, sir. I -- and I also recall -- and I'll do my best to come up with a source or how -- and I may be wrong, Mr. Ellis, but it seems to me that he -- Mr. Simmons then conducted an additional test with a shorter duration. And I may be wrong. And the outcome of that and the result of that, I don't know.

Page 80

But my impression is, somehow, that he ran additional tests that were videotaped and for something closer to the duration of a hypothetical lightning strike and found essentially the same factor; that is to say, ignition and flammability.
Q (By Mr. Ellis) That's actually the test I was referring to --
A Oh, I see.
Q -- where he applied a car battery and, you know, attempted to give it a much shorter duration in terms of time application to the material. And do you know whether or not, with respect to that test, that the duration of it was nevertheless several orders of magnitude longer than a lightning strike would be?
MS. MACLEOD: Objection to form.
A I do not know that firsthand, Counsel. Again, going back to Mr. Goodson's deposition, I think he makes some reference to it being a significant magnitude.
Q (By Mr. Ellis) Okay. Would that bother you any in terms of your reliance upon Mr. Simmons' test as being a valid indicator as to whether the -- whether or not this material is hazardous?
A Not being an engineer, Counsel, no. I mean, it doesn't. I mean, I can't judge the veracity, if

Page 81

you will, of the tests that were conducted. All I do recall, again, from Mr. Goodson's deposition testimony, is that while it's thicker; that is to say, the skin on CSST, but essentially he had tested that material in conditions other than those of attempting to replicate lightning and was satisfied with his results. So I guess, as a lay person in terms of engineering, I simply don't know. And I'm really not in a position to judge. All I can do from a warning standpoint is say that the only test that was done, assuming that it was reliable and valid, was done by McDowell Owens, and, indeed, it showed that the material could be compromised.

Q Okay. So to get to the point where you're in a position to give an opinion in this case, you have to rely on or make an assumption that the McDowell Owens testing was valid?

A Yes, sir. Yes. Again, I cannot judge its validity. But, yes, I am assuming that it is valid and, indeed, demonstrates what Mr. Simmons and his colleagues found.

Q Right. And if their testing is not valid, it's wrong, then your ability to make that assumption goes away; right?

A It does, sir. I mean, there's no question

Page 82

in my mind that if the triers of fact or whomever find that this test is somehow invalid, that this material is not hazardous or does not present an unreasonable risk, I would be the last person to suggest we ought to warn about it. I think Dr. Rhoads and I are probably on the same page in that respect. I think Dr. Rhoads, if I may, is making the assumption that folks like Mr. Scardino and Mr. Goodson are correct, and yet they have done no testing of this material. So he is assuming that no warning is necessary. And if, indeed, he is correct and, indeed, the test is invalid, then, no, I would not suggest a warning be placed on it.

Q Uh-huh. All right. So just to clarify this and to wrap it up, if Mr. Simmons is wrong on the propensity of RBS in homes to attract lightning or contribute to home fires, then you'd be the last person to suggest a warning ought to be placed on the RBS material?

MS. MACLEOD: Objection to form.

A That's correct. I don't know if I'd be the dead last, but I certainly would not recommend it, yes.

Q (By Mr. Ellis) All right. Your report refers to something that you call the safety

Page 83

engineering hierarchy?

A Yes, sir.

Q What do you mean by that?

A Well, from my experience -- and, again, having facilitated on more than occasion hazard analyses for companies who've asked me to help them design their warnings, my understanding of the safety hierarchy or safety engineering hierarchy is that once the hazard analyses have been conducted, and if, indeed, a hazard has been identified that is likely to accrue from intended use or foreseeable misuse, then if it can be designed out, that is the first step; that is to say, take the ingredient out of the recipe in the case of a -- you know, a food product or remove the potential for electrocution or whatever it might be, if it can be designed out. That's the first step.

If designing it out is not possible because it destroys the utility of the product or is simply cost or otherwise prohibitive, then the next step becomes to guard, to keep a user away from confronting the hazard. If one can't guard it, then the third element of the hierarchy is the development of a warning that clearly depicts the hazard, the harmful consequence, and provides an instruction on avoiding the hazard.

Page 84

Q All right.

A You'll find in that hierarchy on occasion, Mr. Ellis, another element that will deal with administrative controls and/or personal protective equipment, for example, in an industrial setting. But those three elements are usually referred to as the safety hierarchy.

Q Okay. With respect to the hazard analysis itself that you referred to --

A Yes, sir.

Q -- does a hazard analysis have to be performed on every product?

A I don't think that there is a legal duty, if you will. But my experience, particularly over the last several decades, is that prudent manufacturers, who obviously want to sell their product, who certainly don't want to engender harm to the users of their product, take it upon themselves to convene a group of internal and sometimes external help to literally brainstorm, how is this going to be used? Who is it going to be used by? What is the context within which it -- the use is going to take place? And let's brainstorm.

And from my experience, Mr. Ellis -- and if I get long-winded, cut me off -- when I've convened a

Page 85

hazard analysis and facilitated the groups, typically it's a combination of engineers who design the product, people on the floor who manufacture the product, salesman and marketing folks who are out in the marketplace and getting feedback on its use. And you literally brainstorm. What's this -- what's the intended use? What's the profile of the user that we anticipate, consumer and/or commercial? And once those hazards have been identified, then move down the hierarchy. Can we design it out? Can we guard against it? If not, how do we go about alerting folks?

Q When this group is convened --

A Yes, sir.

Q -- to do its brainstorming and determine whether or not a hazard is present in the product, are they required, in your view, to look at every conceivable hazard that may be involved with a product?

A Obviously it would be product-specific, Mr. Ellis, but it's probably beyond the purview of most groups to look at every single, you know, potential hazard of the product or every, if you will, hairbrain misuse of the product, you know, perhaps. But I think they're obligated to do their level best

Page 86

at that. What are the conditions under which this is going to be used? And, again, I'm certainly not speaking of an engineer, but I would be surprised if a hazard analysis regarding this product would not attempt to identify any potential compromises the product, given the fact that it's going to be in a roof at the top of whatever the structure might be, and that the topic of lightning would not come up as part of that discussion.

Q Uh-huh. Let's take what's in a roof, then, as a hypothetical situation -- or on a roof. Take a steel chimney that sticks out of a roof.

A Yes, sir.

Q And because of code requirements, it has to stick above the roof to a certain extent. Are you aware that because a metal chimney is sticking up above a roof, that it -- it presents a particular hazard with respect to a lightning strike?

A I think, Counsel, if one were to do hazard analysis of chimney construction, I think probably one of the things that would be discussed is the fact that, given its physical position, it may, in fact, be an inadvertent target of a lightning strike. I expect that would be part of the dialogue, yes.

Q So let's just assume that the steel chimney,

Page 87

then, metal chimney, is discussed by its manufacturing group, and they regard the fact that it may get struck by lightning as a possibility. In that sort of situation, would you then go down this list of the other requirements of the hazard analysis, first to alter the product's design so that the hazard is not present or design it out? Would you first do that?

MS. MACLEOD: Objection to form.

A Again, given, I think, the common use or knowledge about chimneys, I think it would probably be pretty clear to that group that it is going to be in an elevated position, that -- and my guess is that there would be no way to guard against it, albeit the installation of a lightning protection system, for example.

Q (By Mr. Ellis) Okay. So the first step, then, we can't design that out; correct?

A Right.

Q Okay. So we go to the second element, which is to provide a guarding system to preclude a user's engaging the hazard. Is that where this lightning protection system comes in?

A In -- well, depending upon -- when I go back to lightning protection -- and, again, I can't help but go back to some of my experience thus far with

Page 88

CSST -- I'm not suggesting and nor do I think it's practical that everybody who manufactures a chimney or installs CSST or whatever is obligated to, you know, inform the entire world. I believe, though, as I've said in other cases regarding CSST, particularly in those areas of lightning density based upon reports from Vaisala or whomever, that I think it would behoove the manufacturer, yes, to alert the owner of the structure to consider the installation of lightning protection.

Q Okay. So it would be your opinion, then, that with respect to the manufacturer of a metal chimney that sets above a roof, there ought to be a warning or an instruction to them that they ought to consider installation of a lightning protection system that would run lightning to ground?

A I believe, Counsel, that that may be appropriate, yes. In fact, I've not looked at any chimney collateral in the way of installation instructions. But there may well be references to lightning and precautions or at least making people aware of the need for care regarding lightning. I've not seen any of those instructions, but that may be the case.

Q Do you know whether the manufacturers of

Page 89

metal chimneys warn homeowners or contractors to install lightning protection systems?
A I do not.
Q As to the third step, then, let's just assume they're not installing lightning protection systems with their metal chimneys. Do you know whether, in fact, the manufacturers of metal chimneys warn with respect to the hazard of a lightning strike?
A I do not.
Q Other -- apart from chimneys, I mean, we're talking about roofs now, and there's plenty of other building materials on roofs that can be conductive of lightning; right?
A I assume so, Counsel, yes.
Q In fact, you know from looking at the depositions that roofing nails can be conductive of lightning; correct?
A I recall seeing that, yes.
Q Okay. Do you know whether or not the manufacturers of roofing nails warn consumers about the possibility of a lightning strike and what impact it may have?
A I do not.
Q Would it be required, in your view, for lightning -- for --

Page 90

A I would need --
Q I'm sorry. Would it be required, in your view, for manufacturers of roofing nails to include warnings in their literature about the impact of lightning strikes?
A I do not, Counsel, no. I don't know. I mean, to the extent to which -- again, even with roofing nails, there may be admonitions about ensuring what nails are pounded into and so forth. I mean, they may have some information. I don't know. I've really not considered nails.
Q Okay. But my question to you is, in your view, is it required that manufacturers of roofing nails include a warning about what can happen in the event of a lightning strike?
A I don't believe so, Counsel, no. Again, I think that would be --
Q Why not?
A Well, I think it would be dependent upon, you know, what the nail was pounded into and so forth. Again, and, you know -- again, I'm not one that has a position of let's slap warnings on everything that's out there. I expect, mentioning the life of the product, I expect roofing nails have been used -- we talked about two decades with radiant barriers. I

Page 91

suspect nails have been used for centuries, if you will. So I would not be one that, let's suddenly now start, you know, putting warnings on nails.
Q Okay.
A My position in this, Mr. Ellis, just to be clear, is that while I realize that you said this product has been there for two decades, my position is, if, in fact, the testing of the folks at McDowell Owens has identified this product as having unique properties in terms of its ability to conduct combustant to flame and so forth, that, to my mind, requires a warning be devised.
Q Uh-huh. If, in fact, the tests are valid and --
A Yes.
Q -- Mr. Simmons' opinion is correct?
A Yes.
Q All right.
MS. MACLEOD: Can we take a quick break? We've been going almost two hours.
MR. ELLIS: Oh, I'm sorry. Sometimes I lose track of time.
THE VIDEOGRAPHER: Off the record. The time is 10:38.
(Recess taken from 10:38 to 10:47.)

Page 92

THE VIDEOGRAPHER: Back on the record. The time is 10:47.
Q (By Mr. Ellis) Dr. Richetto, before we took the break, we were talking about warnings and building product materials, particularly in connection with roofs. And we talked about metal chimneys, roofing nails. What about wood rafters? You know, the wood rafters can catch fire; right, from a lightning strike?
A I think, ultimately, Counsel, yes. I think they were described as more of a resistor than a conductor. My understanding is that, yes, wood rafters can, depending upon the circumstances, catch fire.
Q With or without the presence of RBS material in the home, a wood rafter, if it's struck by lightning, can catch fire; right?
A That's my understanding, yes.
Q All right. Would you suggest that the manufacturer of wood rafting has to put a warning on it?
A No, sir. And, again, Mr. Ellis, I don't want you to do a disservice of misunderstanding or fail to make myself clear. I am not a believer in slapping warnings, you know, willy-nilly, on products.

Page 93

I mean, for example, we talked about chimneys and nails. As I sit here, I would not recommend a warning on those. Now, the extent to which manufacturers of those products, indeed, thought through the product and realized that, yes, even in the event of lightning, it's not going to explode; it's not going to, you know, become flammable, so there is nothing hazardous beyond what would be expected, and that is to be energized, at least, you know, momentarily by a lightning strike.

The thing that I find different here is that we have, as I understand, this radiant barrier sheathing, a product that combines a conductive material with paper. And at least, again, based upon the veracity of Mr. Simmons' testing, is shown to erupt into flame and/or, you know, be energized and affect nearby combustibles. On that basis -- and, again, accepting that at face value, which is all I can do, I think it would behoove the folks at TechShield to provide a warning similar to those that I've described that I think would be appropriate for CSST, and that is a technical bulletin, safety bulletin, Web site, whatever, indicating that in areas of high lightning density, homeowners and/or building occupants consider a lightning protection system in

Page 94

conjunction with this product.

Q And, again, just to be clear, that depends upon the validity of --

A Absolutely.

Q -- what Mr. Simmons has tested?

A Absolutely.

Q All right. And in terms of the combination of conductive material with a material that can catch fire, like oriented strand board, is that what you meant? The combination of OSB plus a layer of conductive aluminum material?

A My understanding is that then also the layer of paper is a factor taken into account, at least in the opinion of Mr. Simmons, if not others.

Q Okay. Just to be clear, if it is determined that Mr. Simmons' testing really is not valid and doesn't show that there's a risk of harm from the RBS material, you would not require a warning?

MS. MACLEOD: Objection to the form.

A That's correct, sir.

Q (By Mr. Ellis) If you look at the bottom of the page that we're on, which begins at the top of the safety engineering hierarchy --

A Yes, sir.

Q -- you say in that last paragraph, "... it

Page 95

appears that, indeed, the hazard cited earlier exists when the subject radiant barrier has been installed in a dwelling impacted by lightning." Do you see that?

A I do, sir.

Q You don't mean to say that it's your opinion in this case that the hazard actually exists, do you?

A What I'm saying, Counsel, to make that paragraph clear, again, goes back to the veracity of Mr. Simmons' testing. If, indeed, while it doesn't replicate a lightning strike, it evidences the fact that even under less of an energy condition, a flame can erupt and can ignite other combustibles, that if that is a -- any kind of a corollary to a lightning strike, then on the surface, I accept that.

Q Okay. But, again, what you're doing is, you're looking at one part of the equation that relates to ignitability of the material. You're looking at whether or not a particular amount of current creates a flame over a very extended period of time; right?

MS. MACLEOD: Objection to form.

Q (By Mr. Ellis) Because that's what Mr. Simmons' tests show? And the conclusion that you just hypothesized for me is, if somebody uses a flame on RBS or a blow torch on it, then certainly a

Page 96

lightning strike would cause the material to erupt into flame; is that right?

MS. MACLEOD: Objection to form.

A Essentially, as a lay person, that is my understanding, yes.

Q (By Mr. Ellis) Okay.

A I think Mr. Simmons, in using that analogy or metaphor of a match to a blow torch, he seemed to have the engineering opinion that what he has demonstrated, while it may be more match-like, nonetheless has a negative impact on this material. So if you can imagine something of far greater magnitude, to me, that makes sense. Now, I can't, again, speak to the veracity of his testing. But if I understand his position, it's, look, we've used far less energy and had this result. So he is confident that greater energy would, indeed, have at least as harmful an impact.

Q But he used far less energy at a much extended period of time; right?

MS. MACLEOD: Objection to form.

A Again, in Mr. Goodson's opinion, far longer than a lightning-strike duration.

Q (By Mr. Ellis) Right. And, again, you don't know, because you don't have the engineering

Page 97

expertise, what the duration of a lightning strike is in comparison to the amount of time that Mr. Simmons applied in this test?
A That's correct. I do not.
Q And if it turned out that, you know, the propensity of the material to ignite in flames is directly related to the duration that a current is applied to it --
A As opposed to the amount of energy?
Q -- as opposed to the amount of energy --
A Yes, sir.
Q -- then you couldn't have an opinion, could you, as to whether or not Mr. Simmons' test was valid?
A I could not.
Q So when it says here in your opinion that it appears that, indeed, a hazard cited earlier exists, again, that's not an opinion by Dr. Richetto that the hazard, in fact, exists. It is simply that I have to make the assumption, based upon what Mr. Simmons tells me, that a hazard exists?
MS. MACLEOD: Objection to form.
A That's correct. The results of his testing, yes.
Q (By Mr. Ellis) In fact, at the top of the next page, you preface the opinion there about the

Page 98

obligation of Louisiana Pacific to provide warnings based upon that assumption; right?
A That's correct. Yes, sir.
Q You use the words "given this assumption" --
A Yes.
Q -- I opine that?
A Exactly.
Q And, again, you haven't done any independent testing of your own on this material to determine whether or not it's, in fact, hazardous?
A That's correct. I have not.
Q Having opined that LP should have provided proper warnings, tell me what that warning specifically looks like.
A I can give you the elements, Counsel, and I think I reflect them there on the bottom of the page we're on now, page 5. Based upon the national standard that I am most conversant with, Z-535.4, ANSI Z-535.4, I would employ a signal word, very likely "warning." I would identify the hazard that in areas with high lightning density, this material may be impacted by direct or indirect lightning strikes. The harmful consequence probably speaks for itself. I nonetheless would probably make some reference to fire.

Page 99

And then the instruction for avoiding the hazard would be, much as I've opined in CSST cases, something along the lines of alerting intermediaries that strong consideration should be given to a Franklin system, a lightning protection system. I obviously would test that warning. I would probably do some things, you know, depending upon whether it was going to be on a Web site or in collateral that went with the product or a technical bulletin, what have you, but -- so I can't sit here, as they say, and design it on the back of an envelope. But those would be the elements that I would incorporate in some fashion.
Q Okay. Let's go through those elements now.
A Sure.
Q So with respect to 1 through 4 at the bottom of this page of your report, as to Item 1, in selecting the appropriate signal word, you would use the word "warning"?
A Probably, Counsel, yes. I -- when I've designed warnings in the past, I am of the opinion that -- and I think if you look at the standard -- I can't quote it to you verbatim, but danger is somewhat rarely used, if you will, in contrast to the others. It means that a danger is immediately imminent.

Page 100

You'll see danger, for example, on poisons or something of that type. I've seen danger on occasion, and you've probably seen it, with the icon of a lightning strike. I would probably test one or two of those on an audience, a target audience of some sort, before I determined which was the best signal word to use. But as I sit here, I would probably opt for warning.
Q And as to No. 2, "clearly identifying the hazards," what would you say in the context of the warning?
A Again, Counsel, and this is preliminary, you know, if you will. But I certainly would identify the fact that this material, you know, can be ignited, can be -- I'm not sure the language I would use yet. But I would identify the fact that this material, if impacted by a direct or indirect lightning strike, can, in fact, become combustible.
Q And as to No. 3, "depicting the harmful consequence of not avoiding the hazard" --
A And again --
Q -- specifically what would you do?
A Yeah. That's one of the three. I would certainly reference, you know, resulting in fire. Probably, you know, language that would incorporate

Page 101

the word "fire." Again, these are -- you find in an addendum to ANSI Z-535.4 as elements of an adequate warning. I think, in some instances -- in fact, there's been experiments conducted where you can leave out one or more of the elements and still not negatively impact the ultimate message that's received. But I would -- nonetheless, I would probably reference fire, although I think, to most folks, that would be apparent, that a result may be, in fact, a fire or injury or death.

Q Can you tell me what specifically you would say with respect to fire?

A Not specifically, Counsel. I'd probably make two or three different versions, which is my style, and have those tested to determine which seemed to have the greatest impact, which would likely alter behavior, which would more likely communicate, you know, to the target audience.

Q Would you -- would one of the examples that you would use be something like radiant barrier sheathing causes fires?

A No.

Q Why not?

A Because I -- in and of itself, it's an inert product. My understanding of this product is that

Page 102

when affected by lightning, that -- but it's not -- it's inert. It's something that has to be energized from an external source. So, no, I don't believe I would say it necessarily causes the fire. The cause originates with the lightning. It's the effect that it has on this product, which, indeed, then, can affect other combustibles in the area, is my understanding of the hazard.

Q But that effect is no different than anything else that could be struck by lightning in a house; right? Anything can catch fire?

MS. MACLEOD: Objection to form.

A Well, we talked about chimneys, for example, or nails or other, you know, metallic objects, appliances, which from my understanding typically do not, you know, combust, if you will, or result in fire. So this is different than, I think, certainly appliances and other parts that one would find in a home.

Q (By Mr. Ellis) But an appliance can catch fire; right?

A I guess, under certain circumstances, Counsel, yes. I mean, ultimately --

Q It's struck by lightning, it can fail and cause fire in a home; right?

Page 103

MS. MACLEOD: Objection to form.

A Again, I don't think it's the cause, Counsel. I think that in this case, and I know at least about the fact pattern, that apparently the alleged path to ground came, allegedly, through the RBS into the dryer vent system and ultimately into the dryer. So I think the fact that -- again, I may have missed the premise of your question, but the fact that the dryer could catch fire as being --

Q (By Mr. Ellis) Well, I think you were just using the dryer as an example. But we could use just about any appliance, couldn't we, inside a house that may be on a path to ground? The appliance can fail when it's hit by lightning and catch fire, which then could cause the home to burn down; right?

MS. MACLEOD: Objection to form.

A Well, I don't think precisely, Counsel, at least from my experience unless under some unusual circumstances; we have an appliance sitting out in the yard, and it gets hit by lightning. My understanding of the typical way in which appliances become -- result in fire to themselves, if you will, is through a path to ground, you know; so in other words, other material that has been energized or impacted, leading to the dryer. It isn't as though the dryer were hit

Page 104

by lightning, but rather were on the receiving end, if you will, of the path to ground.

Q (By Mr. Ellis) And that's fine. Let's take that as a given. It's on the path to ground, and it catches fire. It fails. Whether it's a dryer, a lamp, any other kind of appliance that you can think of through which the current passes, that appliance can catch fire; correct?

A Ultimately, yes --

MS. MACLEOD: Objection to the form.

A -- albeit something behaving as a conduit that reaches it, yes.

Q (By Mr. Ellis) All right. And in those kinds of situations where we're talking about an appliance that can catch fire because it's on a path to ground and through which current passes, would you require that the manufacturer of whatever the appliance is put a warning out -- warning on it that this appliance can catch fire when lightning strikes a house?

MS. MACLEOD: Objection to the form.

A No, sir. I would not. And, again, I see those as really two different, you know, kind of elements. I mean, here we have a product that, if not exclusively, to my understanding, predominantly is

Page 105

placed at the very top of whatever building it's placed in, serving, really, as a conduit for the energy that it's impacted by. I mean, I see that as very different than an appliance, as I say, on the receiving end of a path to ground.
Q (By Mr. Ellis) Well, they're both on a path to ground; right?
A I understand that, yes.
Q And they both can catch fire?
MS. MACLEOD: Objection to form.
A That's true as well. Yes.
Q (By Mr. Ellis) No. 4, "providing instructions for avoiding the hazards and harmful consequences." So what would you do --
A I would --
Q -- with respect to that?
A Much as I've testified in CSST cases, I think it would behoove the manufacturer to strongly recommend, or language to that effect, the installation of lightning protection.
Q So your remedy, then, for this would be, if you're going to install RBS in your home, you should also have a lightning protection system?
MS. MACLEOD: Objection to form.
A I -- again, given my assumption on the

Page 106

applicability of Mr. Simmons' testing, my answer, Counsel, would be yes. But as I indicated before, much as I've said in CSST cases, in areas of high lightning density.
Q (By Mr. Ellis) Okay. And I'm a little confused about the high lightning-density piece of this, sir. Are you saying that the warning that goes on the material should be made just to consumers of the product in high lightning-density areas, wherever they are?
A Counsel, that would be my recommendation. I think where Dr. Rhoads and I are very much in accord -- and familiar with, I'm sure, some of the same literature he is -- we don't want to create a cry wolf syndrome. We don't want to over-warn. So I don't see a lot of value in trying to tell someone they need a lightning protection system in areas of the country or the world, for that matter, who are not prone to much in the way of lightning strikes. I think that, mentioning CSST, I believe that one of the manufacturers, fairly recently, in fact, lists a number of states -- I can't recall how many now -- where they talk about consideration of lightning protection. And, indeed, they relegated it to those states with a high lightning density.

Page 107

Q Okay. When you say they relegated it to those states of high lightning density --
A Yes.
Q -- does that mean that they just deliver the warnings to consumers in those states or what?
A No. I believe what they've done, and I believe it appropriate, is that they have listed the states and indicated that -- essentially the message is, if you live in one of these areas that has been identified as having the propensity for high lightning density, we recommend the consideration of a lightning protection system. So in answer to your question, I would describe it, I guess, as a generic warning message, if you will, but focused specifically to a target audience which is most susceptible to the potential hazard.
Q Who exactly is the target audience? Are these homeowners? Are they home builders? Are they someone else?
A Well, ultimately, I think we want to provide folks like Christopher Taylor an opportunity to make an informed choice that if he or she or anyone is going to have this product or another product in their home that can be impacted by lightning, that they consider lightning protection. So that's the ultimate

Page 108

target, if you will. But the fact that it's difficult to reach individual homeowners, I expect, with this product, as well as CSST, my recommendation would be a kind of, lack of a better term, warning campaign wherein intermediaries are informed. In the case of CSST, local building authorities, contractors, ultimately subcontractors, distributors, sales representatives, the channels that are used to market and sell the product, if you will, I think, lend themselves to imparting a warning.
Q All right. Do you know whether there are any problems or concerns or risks associated with the recommendation that homeowners or building -- or home builders install lightning protection systems in homes?
A I'm sorry. I missed the first part of that.
Q Yeah. Well, it was -- may have been confusing. Do you know whether or not there are any concerns or risks associated with the installation of lightning protection systems in homes?
A Oh. I do not.
Q Now, for a requirement that a warning apply to this product, radiant barrier sheathing, would you need to have a determination that putting RBS in a home creates a greater risk of lightning-induced

Page 109

fires?
A Well, to my mind, that question is, would there have to be a legitimate hazard and risk, if that's the tenor of your question, and my answer would be yes.
Q All right. For instance, a greater risk to a home fire than, let's say, the risk of an appliance that's along the path to ground catching fire?
A I believe so, Counsel, yes.
Q Do you know whether or not there has been any study performed on whether or not the existence of radiant barrier sheathing in homes creates a greater risk of lightning-induced fires in homes?
A I don't know if any such studies have been done or reported upon, Counsel. Again, I go back to Mr. Goodson's deposition that there, indeed, are, for lack of a better term, lightning laboratories around the country, in which a product of this type can be tested. The extent to which TechShield has done that or not, I don't know. So I guess that's just as responsive as I can be. I have not seen any other statistical evidence or otherwise that such investigations have taken place.
Q In fact, before you come to a conclusion that there is an increased risk of harm from a

Page 110

material like RBS, wouldn't there have to be some sort of statistically significant study performed?
MS. MACLEOD: Objection to form.
A That would certainly be ideal, Counsel, yes. On the other hand, particularly when one considers all of the harmful effects of a home fire, you know, for example, I believe that in some cases, early evidence, early testing is sufficient to put a manufacturer, if not on notice, to at least have them take a second look at or consider the product and its performance in the marketplace.
If I can give you an example. And it's probably not the best of analogies. But I had some experience several years ago with -- and the only case I've had -- with deep vein thrombosis, DVT, and working with counsel representing one of the airlines. And a gentleman had a blood clot in his legs, which had dislodged and -- at any rate, a fatality. Now, when one considers the millions of miles, the millions of passengers, there are but a handful of these kinds of cases. And yet the airline industry has taken upon themselves in the last few years to, in fact, in the back of their magazine, to provide some exercises that one can do while seated to prevent -- hopefully mitigate such an event taking place.

Page 111

So my point is, depending on the potential for harm, such as a home fire, such as, you know, perish the thought, there had been small children, you know, in the house or whomever, that I think there are some instances in which one doesn't wait for, you know, a sample of X thousand of cases to be put on alert that maybe we ought to take a look at informing the public of a potential hazard. I think that's what we have in this case. Certainly, I may be proven wrong, and it's not up to me to prove things, one way or the other. As they say, I don't have a dog in this fight. But I can't help but reflect on the early anecdotal evidence that appeared regarding CSST, which led ultimately to a class action suit and new warnings, instructions, and the like. I don't know that to be the fact, but I think what we may have here is the early stages of a CSST-like history.
Q (By Mr. Ellis) Uh-huh.
A If I were at TechShield, I would begin to alert some folks, and that's my point.
Q But we're talking about a lawsuit and the legal requirement to have a warning. And in that kind of situation, wouldn't you want to have some evidence before you put a warning on something that there is an increased risk of harm from this product --

Page 112

A Well, at least my --
Q -- and --
A I'm sorry. Go ahead.
Q Yeah. Go ahead.
A I was going to say, my interpretation of the work that was done by Mr. Simmons and McDowell Owens, I mean, is precisely that, that under at least their testing conditions, this was a product that, in fact, could erupt into flames and, in fact, have an impact on other materials around it. That's my understanding of what he has demonstrated.
Q But Mr. Simmons hasn't said, does he -- or has he, that there's any data to suggest that there is an increased risk of lightning-induced fires in homes with radiant barrier sheathing?
MS. MACLEOD: Objection to form.
A I honestly, Mr. Ellis, don't recall his testimony in that regard. I don't know that he was asked specifically if the increased risk was there. I don't recall that part of his testimony. My distinct impression is that he's of the belief that it does create an additional risk.
Q (By Mr. Ellis) Hasn't Mr. Simmons said himself publicly, in black and white, in writing, that he doesn't have any data to support the proposition

Page 113

that there's an increased risk of harm of lightning-induced fires in homes that have RBS in them?
MS. MACLEOD: Objection to form.
A I think what he said, Counsel, is that we don't have a large amount of data yet. I think what he also said, though, is that he invariably finds the same results as he tests the product. I guess I can't go beyond that. I think he was -- he certainly said, no, I do not have overwhelming data at this stage of the game.
Q (By Mr. Ellis) In fact, not just that he didn't have overwhelming data. He didn't have any valid data to support the proposition; right?
MS. MACLEOD: Objection to form.
A I'm not sure what he relied on for that statement that he made, Counsel, but all I do recall -- and I think you and I are in accord -- that he didn't have a long list of such incidents.
Q (By Mr. Ellis) You read Mr. Simmons' deposition transcript where I asked him questions about whether or not he had any data to support the proposition that there was an increased risk of lightning-induced fires in homes with RBS? You did read that; right?

Page 114

A I read his deposition, yes, certainly.
Q Okay. And when I asked him the question about whether or not he had any data to support that proposition at all -- because he himself, McDowell Owens, had only been called to investigate fires by insurance companies where RBS existed in homes; right? You know that?
A As -- yes. As I recall, yes.
Q Okay. Now, when I asked him that question as to whether or not there was any data to support the proposition that there was an increased risk of lightning-induced fires in homes with RBS, he said, well, we know from talking with fire chiefs that there is a particular profile of homes where there are lightning-induced fires. Do you remember that testimony?
A I do.
MS. MACLEOD: Objection to form.
A In fact, he named, I believe, one of the fire marshal at some point in the deposition in Texas, as I recall.
Q (By Mr. Ellis) He did.
A Yes.
Q In a town in Texas.
A Right.

Page 115

Q And then when I asked him the question about what specifically the fire chief told him about data supporting the proposition that in RBS homes there was a greater chance of fire, he admitted, didn't he, that the fire chief never even mentioned radiant barrier sheathing?
MS. MACLEOD: Objection to form.
A I think I recall his saying that, yes.
Q (By Mr. Ellis) Yeah. And in the conclusion to the article which he wrote, do you remember in the context of his deposition that he said, he had no data to support the proposition that there was an increased risk of fires in homes with RBS?
MS. MACLEOD: Objection to form.
A As I recall, yes. And I think -- and, again, I'm not -- a question better asked to Mr. Simmons. My interpretation of that or my impression of that, Counsel, was, by data he meant large volumes of cited incidents and investigations in which RBS had been there. I think he talked more about -- again, I think the term "anecdotal" was used early on in the CSST history. That was my impression, that he'd had experience with fires that they had investigated where, in fact, RBS had been involved.
Q (By Mr. Ellis) But he doesn't have

Page 116

comparative data, does he? You haven't learned from Mr. Simmons that he has any data set which shows lightning-induced fires in homes with or without RBS; right?
A That is true, yes.
MS. MACLEOD: Objection to form.
A I didn't see anything of that type.
Q (By Mr. Ellis) And wouldn't you want that kind of data before you imposed on a manufacturer a requirement to warn?
A Counsel, not necessarily. Again, what I try to take into account -- I'm trying to think of examples from my own experience where I have recommended a warning to err on the side of caution, if you will. I think when one takes into account the potential effects of a home fire and the damage to life and limb, as well as property, you know, we're talking about a specific area here. And, again, there are not, I understand it, large amounts of data. And nonetheless, I can only go back to Mr. Simmons' testing. Why McDowell Owens, apparently, is the only group that's investigated this or not, I don't know. Whether other companies are looking at it, I don't know.
What I am suggesting or what strikes me as

Page 117

important -- and I believe, again, I think it's a fair corollary, as I sit here, to CSST -- is that sometimes a product is brought into a marketplace for energy savings or convenience or ease of labor or whatever and find out, after a period of time in that marketplace, that it has hazardous potential. That may, indeed, be the case here. And I believe, based upon, again, Mr. Simmons' testing, it had to be shown to be valid. But I believe it would behoove TechShield or any other manufacturer of this product, so similarly structured, to give people an informed choice to put in a lightning protection system.

Q You said, and your words were, it may be the case here. You don't know that it is, do you?

A I do not know. I think it potentially -- again, I just -- I can't help but just go back and compare it to CSST; that early on, it was occasional word from the marketplace and then more words from the marketplace, and then finally culminating to the point where there were sufficient numbers, that manufacturers began to take some steps.

Q There are probably any number of products where anecdotally you can say that type of thing about; right? But you could also come to the opposite conclusion that down the road, you find that there is

Page 118

no increased risk of harm from the product; right?

A I think that's --

MS. MACLEOD: Objection to form.

A I think that certainly can be the case, yes.

Q (By Mr. Ellis) When you looked at Mr. Simmons' testimony, do you recall him saying that a fire could have resulted in the Taylor house even without the existence of radiant barrier sheathing in the home?

A Yes.

Q And in your view, is Mr. Simmons saying that there's an increased risk of lightning-induced fires in every home in which RBS exists or just a particular home?

A Boy, I can't think for him, Mr. Ellis.

MS. MACLEOD: Objection to form.

A My impression of the tenor of his testimony is that there is an increased risk based upon the way the product behaved under his testing.

Q (By Mr. Ellis) And if there's, again -- I hate to keep coming back to it, but I think I need to wrap that up when you say things like that. If Mr. Simmons' conclusion that there's an increased risk of harm in homes that have RBS in them is wrong, you certainly wouldn't say that a warning is required?

Page 119

A That is true.

MS. MACLEOD: Objection to form.

Q (By Mr. Ellis) With respect to data that might or might not show if there's an increased risk of harm from having radiant barrier sheathing in a home and lightning strikes, did you ask of any insurance company, including the plaintiff in this case, State Farm, whether they had such data?

A No, sir, I did not.

Q Do you know whether or not they, in fact, have it?

A I do not.

Q Do you know whether companies like State Farm that insure homes against fires are charging higher premiums to homeowners that have RBS in their homes?

A No, sir.

Q Did you ask State Farm whether or not they were doing that?

A No. I've had -- I've had no contact with State Farm in any regard.

Q Would that be some indication to you as to whether or not State Farm itself believed, based upon its data, that there's a greater risk of harm in homes with RBS?

Page 120

MS. MACLEOD: Objection to form.

A I don't know, Counsel. I don't know how insurance companies make their decisions.

Q (By Mr. Ellis) So at this point, we really don't have any data, do we, to show there is an increased risk of harm of lightning-induced fires in homes that have RBS in them?

MS. MACLEOD: Objection to form.

A To the best of my knowledge, Counsel, no. Now, there may be other complaints that have been filed that I've not seen. There may, indeed, be other litigation efforts that I certainly would know nothing about. But in terms of large amounts of statistical data, as you discussed earlier, I have not seen the existence of that.

Q (By Mr. Ellis) All right.

THE WITNESS: Our first of the year. Wouldn't you know it.

MR. ELLIS: Wouldn't you know it.

MS. MACLEOD: I think I brought it everywhere I've gone.

MR. ELLIS: This deposition may be shorter than we thought it was -- for the record, we're only saying that because we're seeing the snow fall outside.

Page 121

Q (By Mr. Ellis) All right. If you were to have the benefit of a set of data that would evaluate the relative risk of harm from RBS in a home, you would want that data set to be random, would you not?
A I want to make sure we're using the term "random" in the same fashion.
Q Sure. You wouldn't want to just go to homes that had RBS in them?
A Correct. Correct.
Q You wouldn't want to just go to homes that had RBS in them that had fires; right --
A Correct.
Q -- and use those as your data set?
A Right.
Q You would want a much more complete set of random data as to whether or not there's an increased risk of harm from lightning-induced fires in homes that have RBS?
A Well, in terms of data sets, Counsel, yes. I mean, that would be, obviously, ideal if one could get those kinds of data. On the other hand, if there is a fact pattern that develops such that there are fire investigations that indicate that this product has had a causal role, if you will, in the outcome, to me, that would be a sufficient track record. I mean,

Page 122

for example, again, I go back to CSST, where a significant number of cases have indicated, through fire investigation, that, indeed, perforations in CSST that had the meltdown had a causal role in terms of releasing fuel. That's not a huge data set, but I think it's a very important data set in terms of warranting a warning to folks who have CSST in their homes.
Q With respect to this particular home, namely the Taylor home --
A Yes, sir.
Q -- are you aware that fire investigations were conducted?
A That's my understanding, yes.
Q All right. And there was a fire investigation that was conducted by the fire marshal; correct?
A As I recall, Counsel, yes. Bunn Fire Department, I want to say, but --
Q You saw the Bunn Fire Department report?
A Yes.
Q And there wasn't anything in it about this fire in the Taylor home having been contributed to by radiant barrier sheathing; right?
A As I recall, yes.

Page 123

Q And, in fact, the report that was done later by Mr. McGraw doesn't say that radiant barrier sheathing caused this fire, does it?
A No.
MS. MACLEOD: Objection to form.
A No, I believe he described his role in the process.
Q (By Mr. Ellis) He described his role in the process as not being involved with that, in any event. But he, in his report, does not say that RBS caused this fire; correct?
MS. MACLEOD: Objection to form.
A I -- I believe he could not take a position, one way or the other, on that, yes.
Q (By Mr. Ellis) Are you aware of any fire investigation that has determined that radiant barrier sheathing caused the fire?
A I don't believe I've seen anything in the record to suggest that.
Q Yeah. Okay. You told us you weren't an expert in lightning; right?
A Correct.
Q You're not an electrical engineer?
A No.
Q But you do know that lightning causes fires?

Page 124

A Yes.
Q That's a pretty common-sense opinion?
A I believe so, Counsel, yes.
Q All right. And you do know that lightning causes fires in homes where RBS is not present?
A I'm sure that's the case, yes.
Q And you know that lightning causes fires out in the woods where no RBS is present?
A On occasion. Yes, I understand that.
Q And you do know that lightning can ignite just about any kind of material, whether or not RBS is present?
MS. MACLEOD: Objection to form.
A I expect that's the case, yes.
Q (By Mr. Ellis) It can ignite wood; right?
A Yes.
Q Okay. Can you tell me whether or not a warning in this case would have changed the outcome in any respect?
A Not unequivocally, Counsel, no. Obviously, that's a question better asked to Mr. Taylor. I recall only two things on that basis. One, I believe that was Cary Reconstruction -- I can't recall -- I believe was the company. But I think he indicated after this incident that he did not want RBS in the

Page 125

rebuild, if you will, of his home. And the only other thing that I can recall is that I believe he testified that while the home was being built originally, he did some Internet research around radiant barriers. And you asked if it changed the outcome. Had there been some sort of a safety alert on -- assuming that he looked at the TechShield, for example, Web site in that research, it may have influenced his behavior. But I cannot state unequivocally what the outcome would have been. I think that's obviously better posed to Mr. Taylor.

Q You don't know?

A I do not know.

Q Right. I failed to ask you this back when we were talking about roofing materials. But you are aware of the fact that plenty of roofs are made out of metal; correct?

A I associate them mostly with commercial buildings, but yes.

Q Uh-huh. But there are metal roofs on homes as well; right?

A There are. I've seen some that look almost like wood shake shingles that are, I believe, made of metal, yes.

Q They're in contact, obviously, with

Page 126

combustible materials as well; right?

A Combustibles of some form, Counsel, I would think, yes.

Q Okay. Should there be a requirement, in your view, that metal roof manufacturers warn consumers or home builders that there is an increased risk of lightning-induced fires from their product?

MS. MACLEOD: Objection to form.

A I don't know what kind of research they've done, Counsel, or testing or analysis. Obviously, we're talking about, at least from my experience, particularly those that are made to look like shake shingle roofs, the metal is quite thick. What role that has in terms of dissipating or whatever, you know, the effects of lightning, I mean, I don't know. It strikes me that we may be comparing kind of apples and oranges here, in terms of the behavior of a metal roof under conditions of lightning versus a product that, at least based upon Mr. Simmons' studies, can result in flames.

Q (By Mr. Ellis) A metal roof can conduct electricity; correct?

A I expect so, yes.

Q Okay. You don't know whether it conducts electricity any better or worse than a shingle roof,

Page 127

or do you?

A I do not, no. All I do recall, and certainly I'm not a metallurgist or chemist, but I think pretty much all of the experts, engineering experts, have described aluminum as the second-greatest conductor after copper, only behind silver and gold, which are obviously cost-prohibitive.

Q Would you impose a duty to warn on a manufacturer of a metal roof if there's no data that shows there's an increased risk of harm of lightning-induced fires?

A No, sir.

MS. MACLEOD: Objection to form.

Q (By Mr. Ellis) You would or would not?

A Would not.

Q Is there expert testimony that you're expected to give in this case regarding human factors?

A My specialty within the human factors arena, Counsel, is strictly in the adequacy of warnings/instructions, yes.

Q Okay. Are you expecting to give any sort of opinion with respect to the way in which LP should communicate warnings, the medium through which it communicates warnings?

A I'd certainly feel comfortable in opining in

Page 128

terms of what I think might be at least some of the appropriate intermediaries and channels of communication, yes.

Q What about with respect to the channels, then? What would your opinion be?

A My opinion would be, I believe, Counsel, the same one I have proffered in the CSST cases. And that is exploit some of the varied channels and modes that are used to market and sell the product, which is to say, information to distributors and suppliers, information to local building authorities and jurisdictions, certainly commentary on the Web site. Those would be some of the channels that come to mind.

Q Is there anything inappropriate about using Web pages as a means of communicating either warnings or instructions?

A In this day and age, Counsel, there's certainly nothing wrong with it. Having said that, I don't think I would rely on one's Web site solely. I believe I would exploit the other modes and channels as well.

Q Are you expecting to give any sort of opinion with respect to awareness within the industry about the propensity of this material to contribute to lightning-induced fires?

Page 129

A I guess, Counsel, not beyond what I've testified to earlier today, which is to say, based upon anecdotal data and, again, the veracity of the kind of testing that Mr. Simmons has done, I believe that a level of awareness exists that, again, would behoove their considering recommending a lightning protection system in some sort of a warning message.
Q And we've talked about Mr. Simmons' testing. What's the anecdotal data --
A Again --
Q I'm sorry. What's the anecdotal data that you believe has created some awareness within the industry?
A I believe that at least Mr. Simmons makes reference to other cases or investigations, and I think he comments on having done it on behalf of insurance companies. He describes it as anecdotal data that is beginning to emerge. And the extent to which, again, there are other cases pending or complaints from the field or investigations or what have you beginning to show, I don't know. But thus far, at least based upon publications in fire-related magazines and articles and so forth that apparently McDowell & Owens is published in, I believe it has sufficiently shown up on the radar screen that if I

Page 130

were a manufacturer of RBS, I would take a look.
Q With respect to the McDowell Owens articles that you're referring to that are popping up, are any of those peer-reviewed?
A I don't -- I know Mr. Simmons was asked that question, Counsel, and, again, I can't think for Mr. Simmons. I expect they were not peer-reviewed in the fashion -- I don't know this, but my hunch is, they're probably not peer-reviewed in the fashion that you and I discussed earlier in an academic journal. Having said that, I can't imagine that someone would publish in a fire-related or investigative-related national publication articles that they didn't deem had some degree of credibility or worthiness, if you will.
I think Mr. Simmons interpreted your question of peer review meaning literally his peers within the company rather than saying, yeah, a number of other engineers have looked at and seen our testing and believed that to be the case. So I guess I can't get any closer to an answer for you without getting more long-winded. I don't know the review process that would go into one of the fire journals, for example, that at least one of the articles appeared in. But I -- I didn't sense, at the same time, there

Page 131

was the kind of rigor, if you will, that might go into an academic publication.
Q Certainly not in the sense that we talked about earlier that one of your articles would have been published?
A I expect not, Counsel. But having said that, in fairness to those publications, I don't know what their review process is like.
Q Do you know whether or not Mr. Taylor did anything with respect to the construction of his home that went beyond code requirements in terms of safety?
A I don't know.
Q For instance, you don't know whether or not he had a lightning protection system?
A I don't recall him making reference to that, no.
Q Okay. And you don't know whether or not he had an arc fault protection system in his home?
A I do not.
Q Or a surge protection system?
A No, sir.
Q Or a carbon monoxide detector?
A No.
MR. ELLIS: Okay. Let's take a break and let me see if -- whether or not we can wrap this up.

Page 132

THE WITNESS: All right, sir.
THE VIDEOGRAPHER: Off the record. The time is 11:46.
(Recess taken from 11:46 to 11:58.)
THE VIDEOGRAPHER: Back on the record. The time is 11:58.
Q (By Mr. Ellis) All right. Mr. -- Dr. Richetto, Ms. MacLeod provided us with some materials that were indicated to be your file. So what I'm going to ask to do is to ask the reporter to mark this as Exhibit -- 115? Okay.
(Exhibit 115 marked for identification.)
Q (By Mr. Ellis) Ask you just to take a look at that. With the exception of the materials that are listed on the letters, which are already exhibits to this case that you reviewed in preparation for your deposition and report, is Exhibit No. 115 the remainder of your file?
A Yes, sir, it is. I'm just looking -- the latest e-mail that I got from Ms. MacLeod I mentioned earlier was the file from Dr. Rhoads. And I made sure -- I can look for it. I don't know whether it's listed here or not. But beyond that, Counsel, no, I don't see anything that I have reviewed that is not -- not listed here.

Q All right.

MR. ELLIS: That's all the questions I have for you.

MS. MACLEOD: I'll reserve my questions for trial.

THE VIDEOGRAPHER: Off the record. The time is 11:59.

(DEPOSITION CONCLUDED AT 11:59 A.M.)

C E R T I F I C A T E

STATE OF OKLAHOMA)
) ss
COUNTY OF TULSA)

I, Joanna Smith, Certified Shorthand Reporter within and for the State of Oklahoma, do hereby certify that the above-named GARY MARSHALL RICHETTO was by me first duly sworn to testify the truth, the whole truth, and nothing but the truth, in the case aforesaid; that the above and foregoing deposition was by me taken in shorthand and thereafter transcribed; that the same was taken, pursuant to stipulations hereinbefore set out; and that I am not an attorney for nor otherwise interested in the said action.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 8th day January, 2013.

_____
Joanna Smith, CSR, RPR

JURAT

State Farm vs. Louisiana Pacific Corporation

I, GARY MARSHALL RICHETTO, do hereby state under oath that I have read the above and foregoing deposition in its entirety and that the same is a full, true and correct transcription of my testimony so given at said time and place.

_____
Signature of Witness

Subscribed and sworn to before me, the undersigned Notary Public in and for the State of Oklahoma by said GARY MARSHALL RICHETTO, on this _____ day of _____, 2013.

_____
NOTARY PUBLIC
MY COMMISSION EXPIRES: _____

ERRATA SHEET

State Farm vs. Louisiana Pacific Corporation
DEPOSITION OF GARY MARSHALL RICHETTO
REPORTED BY: Joanna Smith, CSR, RPR
DATE DEPOSITION TAKEN: December 28, 2012

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In The Matter Of:

State Farm, et al v.
Louisiana Pacific Corporation

Dennis J. Scardino
December 3, 2012

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Original File SCARDINO.txt
Min-U-Script® with Word Index

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION

STATE FARM AND CASUALTY COMPANY as subrogee of CHRISTOPHER TAYLOR, Plaintiffs,

vs.) CASE NO. 5:12-cv-289-BO

LOUISIANA PACIFIC CORPORATION, Defendant.

ORAL VIDEOTAPED DEPOSITION OF

DENNIS J. SCARDINO

December 3, 2012

ORAL VIDEOTAPED DEPOSITION OF DENNIS J. SCARDINO, produced as a witness at the instance of the Defendant and duly sworn, was taken in the above-styled and numbered cause on the 3rd day of December, 2012, from 9:04 a.m. to 5:23 p.m., before Laurie Carlisle, Certified Shorthand Reporter in and for the State of Texas, reported by computerized machine shorthand at the offices of Vinson & Elkins, LLP, 1001 Fannin Street, Suite 2500, Houston, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto.

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ALSO PRESENT:

Mr. Nick D'Angelo, Videographer

INDEX

EXHIBITS

THE VIDEOGRAPHER: Today is December 3rd, 2012. Going on the record at 9:04 a.m., beginning tape 1 in the deposition of Dennis Scardino.

DENNIS J. SCARDINO,
having been first duly sworn, testified as follows:

EXAMINATION

BY MS. MacLEOD:

Q. Good morning, Mr. Scardino. My name is Skye MacLeod, and I'm the attorney that's been retained to represent State Farm Fire and Casualty Insurance Company as subrogee of Christopher Taylor in this matter. And we're here to take your deposition today because you've been designated as an expert witness on behalf of Louisiana Pacific, correct?

A. That's my understanding, yes.

Q. I know you've done this several times before, but I want to go over a couple of ground rules with you. If you will allow me to finish my questions before you start answering and I'll extend you the same courtesy to do my best to try to let you finish your answer before I ask my next question. It just makes the record clear, and it's easier for the court reporter if we do that. Okay?

Page 5

A. Understood.
Q. If for any reason you don't understand the question that I've asked, please ask me to repeat it or rephrase it. I will gladly do so. If, however, you provide an answer, I'm going to assume that you understood the question that was asked. Okay?
A. Okay.
Q. And answer verbally like you're doing right now. Uh-huhs, huh-uhs, shakes of the head, even though we have a videographer here with us today, it makes it hard for the court reporter to get those things down. So whether it's yes, no or whatever your answer might be, if you can make it a verbal answer, please.
A. I will.
Q. If you need to take a break at any time, let me know and I will be glad to accommodate you. However, if there's a question pending, I'm going to ask that you provide an answer before we take a break. Okay?
A. Understood.
Q. Do you have any questions about the process here today?
A. I do not.
Q. Not too long ago you were provided with a

Page 6

notice of deposition and a subpoena duces tecum. Do you recall that?
A. I do. Received it in the mail.
Q. And you were asked to produce your entire file in this matter, correct?
A. Correct.
Q. And did you, in fact, produce your entire file?
A. Correct.
MR. ELLIS: We've got the file. May not be down here. It's upstairs. I think you were provided with a copy of it from Nathaniel.
Q. (By Ms. MacLeod) I did get some records. There were a couple of things that I didn't see in there that I wanted to ask you about.
A. Okay.
Q. I didn't see any invoices to either Louisiana Pacific or to the law firm of Ellis & Anthony. Have you done an invoice in this matter?
A. We have. The invoice is not part of the project file. They're in a separate invoice file which is not part of my file.
Q. Okay. If you would, please make copies of those invoices that you've submitted in this matter and provide those to Mr. Ellis so he can get those to

Page 7

me.
A. You want the invoices copied?
Q. Yes, please.
A. Okay.
Q. And I didn't see any kind of record of time spent or kept for activities undertaken in this particular case. Do you keep track of your time?
A. Invoices reflect the hours, so yes, it is reflected on the invoices.
Q. And do they reflect what activity you were undertaking at the time?
A. They would be -- typically what we do is we bill on a monthly cycle. So let's say, for example, we're now in December but November has just ended, so the November time has not been invoiced yet, so that would be considered work in progress. But at the end of November, when the WIPs come to me for review, I'll review them and an invoice will be generated for the November time.
Q. How do you keep track of your time so that you know what to submit and put on the invoice?
A. I write it down on a sheet of paper daily and then once it's entered into the time sheet, I throw away my pieces of paper.
Q. You don't keep those logs?

Page 8

A. No, ma'am. It's a time sheet program where we enter the data and it records the time and we put a description of the activity that we did and then that's what becomes the invoice.
Q. So whatever activity you've undertaken has been transcribed and put onto the invoice?
A. Correct.
Q. So if I look at the invoice, I'll be able to tell what you've done?
A. Right. It's a summary of what we did.
Q. And are you on retainer with Louisiana Pacific, or are you being paid hourly for your time spent?
A. First, I'm not being paid. I get a salary from my company. Now, my company charges for my time, so they do submit invoices. To my knowledge, there is no retainer arrangement with Louisiana Pacific. It's basically a per-hour billed basis.
Q. Also looking through your file, both in regard to documents attached to your report as well as documents provided with a copy of your file, I only saw 28 photographs. And you attended the joint site inspection on October 21, 2011, correct?
A. Yes, ma'am.
Q. Did you only take 28 pictures while you

Page 9

were there?
A. No, ma'am.
Q. Do you know where the remainder of your photographs are?
A. Yes, ma'am. They're in a digital format on the -- in the digital file, if you will, for this project. I assumed that they would have been copied and submitted.
Q. Will you go back and check? Because I only got 28.
A. I can get those sent over on a disk.
Q. Yeah. That would be perfect. And send them to Mr. Ellis so that he can get those to me.
A. Okay.
Q. You mentioned a digital file. Was there anything -- did you make a copy of that digital file, or did someone help you do that?
A. I did not personally make the digital file. Basically I took my hard copy in to the office manager -- her name is Sabrina Lewis -- and said, Here, I need this copied and sent to legal counsel, and then they're going to submit it to you.
Q. Will you make sure that the digital file, that ESI and -- or that you keep on the Taylor, that all of that makes it as well onto the disk so that

Page 10

I know that I have everything that you're keeping in regard to this case?
A. I will. I thought that was done, but okay. I'll make sure.
Q. The only reason I have any question about it is just because of the number of photographs, and I was surprised, in this digital age, that you went out to a site for as long as you were there and took 28 pictures. So okay.
Will you please state your full name and home address for the record?
A. My full name is Dennis John Scardino. I normally don't give out my home address. My work address at Engineering Systems, Incorporated, or ESI, is 16770 Imperial Valley Drive, Suite No. 150, Houston, Texas 77060. Telephone number there is (281)448-6060 and the fax number is (281)448-6062.
Q. I'm going to ask that you give me your home address in the event that I need to serve a subpoena on you and for some reason if you're no longer with ESI and I need to get you, if you would please provide that.
A. My home address is 27092 Crown Chase Drive, Humble, Texas 77339.
Q. Thank you. Did you bring any documents

Page 11

with you to the deposition?
A. No, ma'am.
Q. And how much time did you spend in preparing for today's deposition?
A. Since the beginning of this case, I guess.
Q. Did you do anything specific in regard to preparing to come in and talk to me today?
A. Well, subsequent to submittal of the report, then I would have reviewed additional documents that came to me. I attended by phone Mr. Simmons' deposition. And I reviewed the file materials.
Q. Your file materials?
A. Yes, ma'am.
Q. If you will, Mr. Scardino, will you please identify the opinions that you intend to offer in this case?
A. Okay. The first opinion would be that the precise origin of this fire could not be determined within a reasonable degree of fire analysis certainty due to the destruction, modification, alteration of the fire scene subsequent to the fire, prior to the investigative efforts being conducted. However, the origin of the fire is in the attic ceiling space above the northern portion of the living room/dining

Page 12

area and the southern portion of the master bedroom.
The second would be that the cause of this fire was a natural event, a lightning strike.
Thirdly, that lightning can and does hit residential structures and that fires can result or they cannot result.
Q. Any other opinions that you intend to offer at the trial of this matter?
A. Those are the primary opinions. I guess the remainder of the opinions are subject to the questions you ask me in relation to those major opinions.
Q. Okay. Do you intend to offer any opinions concerning the composition and characteristics of the LP TechShield product?
A. I have an understanding of what it is made from, but I'm not quite sure I understand your question with regards to the remainder of that question.
Q. I'm actually reading from defendant's disclosure of expert testimony and under you it says, "Mr. Scardino will also testify as an expert concerning the composition and characteristics of the LP TechShield product." Will you be offering any opinions regarding the composition and

Page 13

characteristics of the LP TechShield product?
A. Again, it depends upon the question that you ask me as to whether or not it elicits an opinion. I can tell you what my understanding of what that product is made of.
Q. Okay. Are you a materials expert?
A. I have a certain level of expertise with materials which would assist the trier of fact in making a determination. My materials expertise is with regards to that material's behavior and its -- leading to its ignition. I'm not going to talk about the strengths of the material and other properties that are not germane to the fire origin and cause.
Q. If you will, in regard to the composition and characteristics of the LP TechShield product, describe for me the material's behavior as it's germane to the cause and origin of the fire in this particular case.
A. Repeat the question one more time, please.
Q. In regard to the composition and characteristics of the LP TechShield product, describe for me the material's behavior that consists of properties that are germane to the cause and origin of the fire?
A. Of this particular fire?

Page 14

Q. Yes, sir.
A. Basically it's primarily comprised of wood particles that are laminated together in a glue matrix. So basically its ignition temperature would be similar to that of most wood products, somewhere between the 400 to 600 degrees Fahrenheit range. That in order to ignite wood, you have to have an adequate ignition source, which means that it has to be of ample temperature and adequate duration in order to cause its ignition.
Q. Other than the wood, will you be -- are you able to talk to the composition and characteristics of any of the other portions of the LP TechShield product?
A. The LP TechShield product has, on its lower surface as installed, a radiant barrier which is comprised of a paper layer and an aluminum layer glued together and it's then adhered to the bottom of the oriented strand board panel and it's perforated to allow for moisture to move through the membrane.
Q. Do you know what the ignition temperature of the paper utilized in the LP TechShield product is?
A. One of the generally accepted ignition temperatures of paper is 451 degrees Fahrenheit,

Page 15

thereabouts. Now, again, since this is glued to a wood substrate, I don't know the exact ignition temperature.
Q. Do you have any understanding of how gluing it to a substrate would affect the ignition temperature?
A. I do.
Q. Tell me, please.
A. Basically by creating a layered type of panel, direct contact allows for the transfer of heat through conduction. So basically as you put heat into one of the elements, that heat is being dissipated into the other elements of the assembly.
Q. Does that mean to you that it will require a higher or a lower ignition temperature with that configuration?
A. Typically it would indicate that since you're conducting heat away, the ignition temperature would be higher.
Q. Do you have any idea how much higher?
A. I do not.
Q. Have you done any research or investigation to determine the -- or do you know what the ignition temperature of aluminum that's used in the TechShield product?

Page 16

A. The ignition temperature of aluminum?
Q. Yes, sir.
A. Aluminum has a melting temperature generally considered around 1200 degrees Fahrenheit. Its ignition temperature, I'd have to go to a resource to find out what its ignition temperature actually is. I don't remember that off the top of my head.
Q. So you don't intend to provide any testimony at the trial of this matter in regard to the ignition temperature of aluminum?
A. I don't know. I will research that particular information so that when you ask me that at trial, I can give you that information. I don't know it right now.
Q. Okay. Well, I'm not asking you to go out and do any research. I'm just trying to figure out what it is that you know now and what played a role in the creation of the report that you made on September 28, 2012.
In order to come up with the opinions that you provided in your report from September 28, 2012, you did not need to know the ignition temperature of aluminum. Is that correct?
A. Knowing the ignition temperature of

Page 17

aluminum would not have affected my opinions, no.
Q. In regard to the glue itself that is used to adhere the aluminum and paper to the OSB, do you know what the ignition temperature is for the glue that's used?
A. I do not.
Q. And as with the aluminum, that wasn't something that you needed to know in order to render the opinions that you provided in your September 28, 2012 report, correct?
A. That is correct.
Q. Let's go ahead and mark as Deposition Exhibit 50 a copy of your report dated September 28, 2012.
(Exhibit 50 marked)
Q. (By Ms. MacLeod) Does this appear to be your report, without the appendices attached to it?
A. Yes. This is only the text portion of my report.
Q. The opinions and conclusions that you've come to in this case that you've identified -- you've identified three for me here today. Are those the same as those set out on page 9 and 10 of your report under the heading "Conclusions"?
A. I believe they are. They encompass the

Page 18

information that's provided there.
(Exhibit 51 marked)
Q. (By Ms. MacLeod) I'm going to mark as Deposition Exhibit 51 a copy of Appendix A. And this is a list of materials reviewed by you during the preposition -- preparation, rather, of your report?
A. Yes.
Q. Correct?
A. Yes.
Q. And how did you make a determination of what materials you included in this reviewed materials list?
A. How did I make a determination? Those are the -- excuse me. Those are the materials I consulted with regards to rendering my opinions.
Q. You list under No. 1 several different versions and editions of NFPA 291. Did you actually go through and look at each of those certifications?
A. Yes, ma'am, I did, and I've got copies of each of those versions.
Q. Did you bring all of those with you today?
A. All of the NFPA documents? No, ma'am. Those are all available online for purchase. So no, I didn't bring them with me today.
Q. Did your counsel ask you to bring any of

Page 19

the treatises and reviewed materials that weren't provided in the file today with you?
A. Did they ask me to bring it?
Q. Yes.
A. No. I mean, they didn't ask me to and they're listed here. So you would be able to get access to them.
Q. If I had access and could -- but I have to buy them to do that, right?
A. I mean, they're copyrighted materials.
Q. Right.
A. So I'm not quite sure if I can just make a copy of them arbitrarily.
Q. And I'm not asking you to. The reason I asked -- just so that you're not confused, I'm not trying to give you a hard time. It was part of our agreement that any treatises and literature that was not produced would be brought with the deponent to the deposition. So I'm just asking: You don't have them here, right?
A. I do not.
Q. How much time did you spend in preparing this report and reviewing these five or six editions of NFPA 921?
A. I don't know the exact amount of time

Page 20

I spent on preparation for the report.
Q. Do you think it was more than an hour that you spent?
A. On the report or the review of those materials?
Q. The review of the NFPA 921.
A. Good gracious. I'm very familiar with all of those versions and have used them for years. Was it more than an hour? I don't know. Could have been.
Q. And I guess just so I understand, why would it be necessary to go back through and look at each of those editions?
A. Things change in the editions. The verbiage changes. Also, with regards to lightning, I went back through all of those editions all the way back to 1992, and all of them indicate lightning as a recognized cause for the fire.
Q. So that was the purpose of going through those is to look at the sections on what it says about lightning?
A. That was part of it, yes.
Q. Do you know what the NFPA 921 says in regards to possibilities versus probabilities?
A. Yes, ma'am. There's a section that

Page 21

discusses the level of confidence that an investigator has in his or her opinion. So basically with regards to a possibility, a possibility is not considered sufficient evidence by which to render an opinion. You cannot say with any specitivity (sic) that that cause or that origin is more probable or less probable. So you're left with basically an undetermined conclusion.

But once you go into the realm of probability, then you are looking at whether or not that ignition source, compared to the other potential ignition sources, is the more probable of ignition sources associated with the cause of that fire.

Q. You have in your report a good deal of information about lightning. Can you help me by looking through your reviewed materials list and tell me which of the reviewed materials you used to obtain the information about lightning that's included in your report?

A. Well, if you would go to the report, under the section termed "Lightning" which appears on page 5, those are the references. The numerical ones refer to the appendices. The alphabetical refer to the actual attachments associated with the report. That's -- those appendices are shown on page 4 of the

Page 22

report.

Q. Prior to preparing a report on September 28, 2012, other than, I guess, reviewed materials No. 1, had you read these others, 5, 6, 15, 16, 17, 18, 19 and I believe Appendices N and O prior to the time that you sat down to write the report, or was the first time you reviewed those in preparation for writing this report?

A. Is that -- okay.

Q. Does that make sense?

A. If I understood your question -- and there was a lot of numbers thrown out, so I didn't catch all of them.

Q. I just read the numbers that are listed on page 5 of your report.

A. Okay.

Q. But I was taking No. 1 out because I assumed you looked at No. 1, the NFPA 291, more frequently than just in preparation of this report?

A. Correct. Also, I'll point out on the reviewed materials, No. 18 and No. 11 are duplicates. So with regards to No. 1, yes. If I'm answering your question did I review them prior to prepping for this report, 1, yes. 5, no, that was something that I researched specifically for this particular report.

Page 23

I had seen information similar to it previously.

But No. 6, again, that would be a yes, that was specifically for this report.

15, no, ma'am. I've reviewed that one in the past. It's got a copyright date of 1981.

Explosions and Fires, No. 16, Determining the Cause and Origin by Kennedy, yeah, that's the green book. I've reviewed it on numerous occasions prior to the preparation for this report.

17, Kirk's Fire Investigation, Second Edition, yes, absolutely. I reviewed it well before preparing this report. Kirk's Fire Investigation, Fifth Edition, I have reviewed it in the past but I did rereview it to prepare the property.

19, Fire Protection Handbook, 15th Edition, yes, ma'am, I reviewed it on numerous occasions. It's a very large book. I have not read the entirety of that book, but pertinent sections have come up through the years of conducting fire investigations for the last 30 some odd years.

Q. Would those pertinent sections include sections on lightning?

A. Correct. It addresses lightning and lightning protection systems because it's a fire protection handbook as opposed to a fire

Page 24

investigation book. The fire protection is looking at the prevention of fires.

No. N, N is the National Fire Protection Administration, "Lightning Fires and Lightning Strikes." That one is specific to the preparation of this report. It's a more recent edition. I have looked at those in the past, but I got a more recent edition to look through.

The same with O. Excuse me.

Q. There is mention on here, No. 9, Fire Findings Special Reports.

A. Yes, ma'am.

Q. And produced in the file materials from you was a two-page article called Fire Findings, Summer 2009, Volume 17, No. 3. Are you familiar -- does that ring a bell with you?

A. I remember seeing the "Reflective Radiant Barrier" report in Fire Findings.

Q. I'm going to hand it to you so you can look at it. I apologize, but it's the only copy I have.

And if you also will look through -- go ahead, while Mr. Ellis is looking at that, look for Exhibit 44.

A. Oh, in here. Sorry.

Q. That's okay.

Page 25

A. Exhibit 44. It's 49 at the back. 48.
Yes.
Q. Exhibit No. 44, I didn't see this document in your file. Have you seen this document before today?
A. I have.
Q. Okay. Did you locate this document and provide it to counsel, or was this document provided to you by counsel?
A. I don't know. I mean, what -- the original two pages that you handed to me appeared to be a summary taken from the Fire Findings website. So that basically identified the article I wanted to track down. I don't recall whether or not I asked for that article or whether or not it was provided. It could have happened either way. I don't know.
Q. And then if you'll look at the date on the two-page article, it looks like it was printed out by you on October 24, 2011, and that was three days after you went out and did the joint site inspection at the Taylors', correct?
A. The 21st, three days, yes, that's correct on the number.
Q. Do you have any recollection as to why you were making searches regarding radiant barriers three

Page 26

days after the time that you were out at the joint site inspection?
A. More than likely I was making inquiries with regard to lightning in general as well as whatever information was out there with regards to radiant barriers.
Q. Okay. And when you --
A. Actually -- no, I think that's right.
Q. Had you ever conducted any type of search like that before, or was this the first time you were getting on the Internet and looking for -- a search for lightning and radiant barrier products?
A. To be honest with you, I don't know. I've looked -- through the course of my career, looking at various types of fires, one of the typical things that I would do to gather more data would be to research various things. And whether this was the first time I looked at radiant barriers or the third time or -- I don't remember.
Q. Okay. Do you recall having any conversation with anyone asking you to do some research to look for articles that had been published by McDowell Owens?
A. No, ma'am, I don't ever -- I don't recall receiving a call requesting that particular subject,

Page 27

no.
Q. Do you remember having any conversations with anyone at Louisiana Pacific about any research or testing that was being undertaken by McDowell Owens?
A. No, ma'am.
Q. Never?
A. Again, rephrase the question because the way I understood it, my answer would stay the same. But go ahead and ask it --
Q. You never had any conversation with anyone at Louisiana Pacific about the testing and research being done regarding radiant barriers at McDowell Owens?
A. At -- any conversations. Yeah, that was -- at Louisiana Pacific is the next question. I don't recall any off the top of my head. I have met with representatives from Louisiana Pacific at the sites of these things. Could that topic have come up? Maybe. I don't have a specific recollection of that.
Q. Was your introduction to lightning-induced fires as they relate to radiant barrier products first introduced to you with the Taylor fire?
A. Okay. Say that one more time because we're talking lightning-induced fires. I've been

Page 28

evaluating lightning causing fires throughout my career.
Q. Right. And I -- I have no doubt that there's a large list there. What I'm really focusing on is when you first became aware of radiant barrier products and claims that there were lightning-induced fires as they relate to radiant barrier products.
A. Well, if I understand your question, the allegation is that -- has been made with regards to your question. That allegation has been made, but I have not seen any evidence thereof that you have lightning-induced fires caused by the radiant barrier.
Q. And that's why I -- that's why I phrased it with claims that that is happening. And if you want to use the word "alleged," I just want to know from you when is the first time you became aware that there's someone out there that thought this was an issue, that there was energy from a lightning strike causing a fire at a radiant barrier product?
A. I don't know for a fact whether or not I reviewed an article like this prior to my involvement, but it could have occurred when I was retained by LP.
Q. When were you first retained by LP?

Page 29

A. In relation to this particular project?
Q. Just in general -- I'm trying to find out -- what I really want to know is how long you've known about this, how long you've been working with LP on these issues, when is the first time you got brought in as an expert witness?
A. On this case --
Q. No, sir.
A. -- September the 30th.
Q. Not --
A. With regards to being involved prior to that with LP, I don't know.
Q. Is the Taylor --
A. That information may be available. Is the Taylor --
Q. Was the Taylor case the first time that LP -- Louisiana Pacific contacted you and asked you to be an expert witness to come in and do a cause and origin investigation where there was a claim that its product was the cause of the fire?
MR. ELLIS: Object to form. Go ahead.
A. I don't think so.
Q. (By Ms. MacLeod) You don't think the Taylor claim was the first one?
A. If recollection serves, I don't think so.

Page 30

Q. What do you think the first one was?
A. Good gracious. I have no idea. I can probably find out, but I have no idea.
Q. Do you know when -- do you have any recollection of when Louisiana Pacific first contacted you to go out and do a C&O investigation regarding a claim or an alleged claim that their radiant barrier product had caught fire?
A. Again, I don't know specifically when we were first contacted, so I have --
Q. Was it five or six years before the Taylor fire?
A. Five or six? That -- that seems -- no, it doesn't seem that it was five or six years, no.
Q. I'm just trying to get a time frame here.
A. I don't know.
Q. I mean, was it five or six months before the Taylor fire?
A. I don't know. This one was done in 2011. I don't know. 2009, 2010. I don't know.
Q. Do you -- or does ESI keep track of the work that it does with a particular client?
A. I believe that -- I don't know if they track it, but I believe their system can identify that, yes.

Page 31

Q. So if you wanted to go back and determine how many times ESI has worked with Louisiana Pacific in regard to claims of fire caused by the radiant barrier -- energy to the radiant barrier product TechShield, that's something that you could look for?
MR. ELLIS: Object to form. Go ahead.
A. I could have my office manager search the database to see if we can develop a list of the number of cases that were involving Louisiana Pacific.
Q. Do you work for any other manufacturer of a radiant barrier product?
A. No.
Q. So you don't do any work with Georgia Pacific?
A. I have not been asked to, no.
Q. Have you been asked to do any work with -- by Norbord to do any work with its radiant barrier product?
A. I have not.
Q. Do you have active cases right now in which you've been retained by Louisiana Pacific to be the cause and origin expert on behalf of Louisiana Pacific in fires that are similar to the Taylors?
A. Define "active."

Page 32

Q. That you're currently working on --
A. Well --
Q. -- that you've been asked to be the expert on.
A. Again, I wasn't specifically asked to be the expert. The expert only occurs once you're into litigation. They asked me to be a consultant. With regards to active, the way I define "active" is I'm actually physically working on them. There are ones that have already been filed.
Again, your prior question with regards to determining the number, I don't know that. But that's information I could probably find for us.
Q. I guess I'm sitting here feeling like I have no sense of how many different times you've been asked to serve in a consulting role with LP. And we're talking potentially 2009, 2010 to the present. Do you think you've had -- been asked to consult by Louisiana Pacific more than ten times on ten different cases?
A. I don't know. I really don't.
Q. But that's something that you can find out?
A. I believe we can, yes.
Q. I'm going to ask you to make that effort. And if you will, please provide that information to

Page 33

your counsel so he can provide it to me.
MR. ELLIS: Just so it's clear for the record, we'll take it under advisement, but I don't know how we'll react to the request.
(Exhibit 52 marked)
Q. (By Ms. MacLeod) I'm going to hand you what we're marking as Exhibit 52. This is Appendix B and is your CV. And it was attached to your report, correct?
A. Yes.
Q. Is this the most recent copy of your CV?
A. I looked at it when I reviewed the report. There are things that are absent from it.
Q. Did you bring an updated copy of your CV?
A. No, ma'am, I have not updated my CV.
Q. You haven't updated it?
A. No, ma'am. I have the information. There were two classes and some additional training.
Q. If you will, you have several different letters after your name at the top of this page?
A. Yes, ma'am.
Q. Will you walk me through what those are, please?
A. PE designation is professional engineering. I hold licensing in professional engineering in

Page 34

Texas, Louisiana and Mississippi. My background is in mechanical engineering.
Q. Do you hold a professional engineer's license in the State of North Carolina?
A. I do not.
Q. When did you first become licensed as a PE?
A. I don't remember. Graduated from Mississippi State University in 1986. Approximately 16 years after graduating is when I did my PE.
Q. And where were you first licensed?
A. Louisiana.
Q. And about how many years later did you get licensed in Mississippi and Texas?
A. Mississippi would have been 2011, and Texas would have been 2012.
Q. And then the next, CFI?
A. CFI is a Certified Fire Investigator through the International Association of Arson Investigators.
Q. And when did you become certified with IAAI?
A. Many years ago. I don't remember exactly when.
Q. Before 2000?
A. Yes, ma'am. We're talking back in -- I

Page 35

want to say in the '90s.
The CFEI designation, Certified Fire and Explosion Investigator, that is a designation through the National Association of Fire Investigators. I've had that one probably since -- for 30 years, 29 years, something along that line.
Q. And then the CFII?
A. The Certified Fire Investigator Instructor, again, that's through the National Association of Fire Investigators. I carried it for the same amount of time as the CFEI.
And the CVFI is the Certified Vehicle Fire Investigator. Again, that's through the National Association of Fire Investigators. I don't remember when I got that one. That was more recent than the CFEI or the CFII.
Q. In the last five years?
A. I believe I got that designation since I started with ESI and I started with ESI in 2002 -- no, excuse me, 2005. So within the last seven.
Q. I also see under certifications it says Certified Fire Investigator with NPQS?
A. Correct. That's a national accreditation board. I don't remember exactly what the acronym stands for; but again, that certification is

Page 36

something you obtain only after getting the IAAI CFI.
Q. If you'll look under the first heading, "Areas of Specialization"?
A. Yes, ma'am.
Q. Are these designated that way because these are the areas that you feel you hold a specific expertise in?
A. These are areas in which I have provided consulting in the past, of which I've actually -- may have given testimony in the past or provided consulting with regards to.
Q. You do not list electrical systems analysis as an area of specialization, correct?
A. Electrical system analysis is part of the fire investigative process. It's also part of the fire analysis process -- excuse me, failure analysis process. So I do evaluate electrical systems associated with structures involved in fires.
Q. And what does that analysis entail?
A. Basically evaluating the source of electricity that comes into the home, the method by which it's routed to the home and the circuitry and aspects of it within the home from overcurrent protection to the actual terminal device, which would be a plug, a switch or a light fixture. We also look

Page 37

at appliances that would be associated with -- that actually utilize electrical power. So again, all of that would be part of a typical analysis.
Q. And as part of that analysis, are you making determinations as to whether or not the electrical system was the cause of the fire in your investigations?
A. Correct.
Q. You are?
A. Yes.
Q. Did you make a determination in the Taylor case as to whether the electrical systems -- the home's electrical system was a cause of the fire at the Taylor home?
A. It was involved in the cause of the fire. But was it the cause of the fire? No.
Q. In your areas of specialization, you do not list lightning as an area of specialization, correct?
A. Correct. It is not listed as an area of specialization on this resume. My specialization with regards to lightning is how it is related to the cause of fires.
Q. In what regard? If you can just give me a little more detail about what you're talking about there.

Page 38

A. Basically determining whether or not a lightning strike struck the structure or a nearby object, which then the voltage and amperage from that lightning strike then affected the house in some manner or the structure or its electrical systems in some manner. It could be on the -- anything that would be germane to lightning be associated with the cause of the fire.
Q. You're not an electrical engineer, correct?
A. No, ma'am. My background is in mechanical engineering. As part of being a mechanical engineer, we do have certain aspects of electrical engineering incorporated into that program. I've also done independent study with regards to electrical system. I've had training in the National Electric Code NFPA 70. So yes, I do have an understanding of electrical systems.
Q. But really -- I'm sorry. My question was: You're not an electrical engineer?
A. To simply answer that question, no, I am not an electrical engineer.
Q. Let's go down to certifications. We've gone through a lot of those. Is there any state in which you hold a license to conduct origin and cause investigations?

Page 39

A. Any state in which I hold a license, no. I did previously in Louisiana, I was a licensed private investigator in Louisiana. But I don't hold a private investigator license.
Q. And that would be true for you don't hold a private investigator's license in North Carolina, correct?
A. I do not.
Q. And are you familiar with the laws of North Carolina and whether they authorize someone to conduct an origin and cause investigation in North Carolina without holding a private investigator's license?
A. And I'm not conducting just an investigation. I'm conducting an analysis associated with the origin and cause of a fire. And so I am not aware of what North Carolina specific statutes are with regards to investigations, but I'm conducting an analysis, not an investigation.
Q. But the answer to my question is: So you don't know what the law is in regard to whether North Carolina requires someone who's conducting an origin and cause investigation to hold a private investigator's license?
A. With regards to investigations, I am not

Page 40

aware of what North Carolina's statutes are, no.
Q. But it's your testimony today that you don't think that applies to you because you're not conducting an investigation; you're conducting analysis?
A. Correct. The --
MR. ELLIS: Objection to form.
A. Excuse me. The analysis is different from the investigation.
Q. (By Ms. MacLeod) How so?
A. Basically because an origin and cause investigation typically delves into areas outside of the fire analysis. The fire analysis looks at the origin, the cause, circumstances of events and does the -- brings in the failure analysis, whereas a fire investigation does not. And they get more into background checks, financial checks and things of that nature, which I don't get into.
Q. All right. If you will turn the page and look under the heading "Professional Affiliations."
A. Yes.
Q. You have four affiliations listed there. Are you currently a member of each of those four affiliations?
A. I believe so. I recall the -- basically

Page 41

the renewal invoices came in the door and I submitted them for payment. So yes, I do believe I am still a member of those.
Q. For the ASME, other than payment of an annual fee, is there anything else that you have to do to be a member of that association?
A. To my knowledge, you submit an application for membership. If they accept you, then you continue your membership by paying a fee.
Q. Do you hold any leadership roles with that?
A. I do not.
THE VIDEOGRAPHER: Sorry, I have to go off the record to change the tape.
MS. MacLEOD: Okay.
THE VIDEOGRAPHER: Going off the record at 10:03, ending tape 1.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 10:10 a.m., beginning tape 2.
Q. (By Ms. MacLeod) Mr. Scardino, we were talking about professional affiliations. The second one is IAAI. Other than paying an annual fee, are there any membership requirements to be a part of that association?
A. Yes, ma'am. You have to submit an

Page 42

application. You have to be accepted by the membership. You also have to be a member of the local chapter as well. What's not on here is I'm also a member of the Texas Chapter of the International Association of Arson Investigators. Other than making application, being accepted and paying your dues, then no.
Q. What about for the local Texas chapter? Same kind of deal?
A. The same.
Q. Do you hold any leadership roles in either the local chapter or the IAAI association?
A. I did previously in the Florida chapter of the IAAI, but at present I do not.
Q. When were you a member of the Florida chapter?
A. I started doing fire investigations in Florida full time in 1988 while I was employed with Interscience, Incorporated. I believe I became involved with the Florida chapter in '88, '89. '89, I was probably the treasurer, served in that capacity for a few years, then became the regional director, I think is what they called it. And I think at one point I went from second vice to first vice, but due to my relocation, I didn't accept the presidency.

Page 43

Q. All right. With NAFI, you're currently a member with NAFI?
A. Yes, ma'am.
Q. And other than payment of an annual fee, are there any membership requirements that you have to meet such as submitting an application and paying a fee?
A. Not with regards to the NAFI. There is with regards to the CFEI designation that you have to resubmit continuing education every -- I think it's every five years. The same with the CFI designation for the IAAI.
Q. So to retain those licenses, you have to do continuing education or certifications?
A. They're not licenses, they are certifications.
Q. I apologize.
A. Correct.
Q. In regard to NAFI, do you -- have you ever held a leadership role?
A. No.
Q. With the National Fire Protection Association, can you explain that one to me? Are you currently a member of that?
A. NFPA, yes, I am.

Page 44

Q. And what requirements are needed to be a member of NFPA?
A. Again, you submit an application and pay a fee, and then you can become a member of the NFPA.
Q. Do you have any leadership roles?
A. I do not.
Q. Sorry?
A. I do not.
Q. In regard to court qualifications, it appears that you have been qualified as a fire origin and cause expert. How many times?
A. I don't know. That's -- when you're talking about expert witness, in deposition or at trial? Are you differentiating or is both applicable?
Q. When you've put this under here under "Court Qualifications," what is --
A. I've given courtroom testimony on fire origin and cause previously. The number of times, I don't know. It spans over my 30-year plus year career. I did not qualify for court -- a case didn't go to court for seven years. So 30 minus 7. 23. So for approximately the past 23 years, I've been giving expert testimony at deposition and at trial.
Q. How many times have you given expert

Page 45

testimony at trial as a fire origin and cause expert?
A. I don't remember.
Q. More than ten?
A. Again, I don't remember. I have a list of my most recent testimonies, but you know, again, you're asking me to look back over 23 plus years, and I don't remember all of the times that I was court qualified.
Q. I was just trying to get a sense of what you've accomplished and the things that you've done.
A. The best I can answer is numerous occasions.
Q. And I was just -- what do you mean by "numerous," though? I mean, I don't know if "numerous" is different.
A. I've been in -- I mean, I've been tendered as an expert witness and accepted in Texas, Louisiana, Mississippi, Alabama, Florida. So --
Q. Were those state court cases or Federal?
A. Both.
Q. Well, that gets you at least five there.
Okay. In regard to being designated as a mechanical engineer, how many times have you been qualified in either state or Federal court as a mechanical engineer?

Page 46

A. The best answer I can give you is fewer than I have been as a fire origin and cause.
Q. Is that both -- have you been qualified both in state and Federal court?
A. Again, good question. I don't know.
Q. Have you ever been qualified as an electrical expert at a trial?
A. As electricity and electrical matters come up with regards to the origin and cause of fires, I would say yes. Or is your question more specific?
Q. Yeah. I really -- I mean, have you been designated and qualified as an electrical expert at a trial?
MR. ELLIS: Objection to form. Go ahead.
A. At a trial? Not to my knowledge.
Q. (By Ms. MacLeod) Other than what you've told me today, do you consider yourself an expert -- an electrical expert? Sorry, that was -- let's strike that.
Other than what you've already told me today about understanding electrical systems and analyzing electrical systems in regard to cause and origin, do you consider yourself an electrical expert?

Page 47

MR. ELLIS: Objection, form. Go ahead.
A. I mean, your question is other than what I've already told you, and then the "other" of what I've already told you I believe does qualify me as having expertise in electrical.
Q. Okay.
A. But to answer that question, because it's so specific, no.
Q. Have you ever been qualified as an expert in the field of lightning at a trial?
A. In the field of lightning. Again, the matter of lightning has come up during examination at trial, discussing whether or not the lightning was capable of causing a fire. Was I designated as a lightning expert at trial? No. But with regards to lightning associated with the origin and cause of fires, I believe I have the necessary expertise, yes.
Q. Have you ever been qualified as an expert in the field of statistics?
A. Qualified as an expert in the field of statistics? I understand statistics. Took classes in them. To my knowledge I have never been tendered as an expert in statistics, nor have I testified as a statistician, I think is the right way to say that.

Page 48

Q. Do you consider yourself -- if someone came to you and said, I'd like to retain you in the field of statistics or as a statistician, would you accept that and say, Yes, I have the expertise to be able to help you?
A. Again, it depends upon what the dataset is. It's perfectly within the purview of someone with an engineering background to look at datasets and analyze the dataset, determine a standard deviation of the means and things associated with that data.
Q. So does that mean yes, you think that you could testify as a statistical expert?
A. With regards to specific datasets, I might have the capability to do that, yes.
Q. What kind of training have you -- and education have you had in the field of statistics?
A. That is a specific course taught in the mechanical engineering curriculum that I took with regards to evaluating data associated with engineering endeavors. So yes, I have taken courses with regards to evaluating data, statistics.
Q. How many courses?
A. My recollection, it was one semester.
Q. And that was --
A. A while ago, yeah.

Page 49

Q. -- 16 plus years ago?
A. No, ma'am. It would have been 1986 minus probably a couple of years.
Q. Okay. So this was while you were at Mississippi State University?
A. Yes, ma'am.
Q. Have you done any continuing education coursework in regard to statistical analysis of data?
A. Continuing education? No, ma'am.
Q. So is there anything else that helps support your position that you have some expertise in this field other than the one course you took at Mississippi State?
A. And my continuing to use that knowledge throughout the years. But you're looking for another course or seminar? I don't have one.
Q. If you will look at the specialized education.
A. Yes, ma'am.
Q. I've looked through this. I totally could have missed something. But when I was, the only course that jumped out at me as being specific to lightning was a lightning course taken back in 2003 called Lightning 101, and it was, I assume, presented by Vaisala, Inc. Do you see that?

Page 50

A. If that's how you say it, yes, I see it on page 3.
Q. I don't know. How do you say it?
A. I say Vaisala, but I could be wrong as well. It used to be easier. I think it was called STRIKEfax.
Q. I think their report is called STRIKEnet maybe.
A. Now. But it used to be STRIKEfax, so that's how I always referred to them in years past.
Q. Do you recall why you took this course?
A. Took it back in 2003. No. Continuing education is the answer that comes to mind.
Q. Were you asked by Louisiana Pacific to go and attend that course back in 2003?
A. No, ma'am.
Q. Do you know how long that class -- or courses lasted?
A. Oh, it would be just a guess. I don't remember it going a whole day.
Q. Do you have any recollection of the material covered that day?
A. I do.
Q. Can you tell me a little bit about what kinds of things were covered during that course?

Page 51

A. Well, they covered basically how lightning is formed, sort of giving you a run-down of what's included in my report and then basically, "Use us."
Q. Basically what?
A. "Use us," use Vaisala.
Q. I'm sorry, I'm not --
A. Basically at the end of the program, they did their marketing pitch.
Q. Oh, "use us." I got you. Sorry.
Other than this Lightning 101 course that you took back in 2003, have you taken any other coursework that's specific to lightning?
A. Yes, ma'am.
Q. Okay.
A. Again, it goes back -- going to page 4 or 5, the very first one with regards to fire and extended coverage, that was in fire prevention, but it did address lightning. All of the fires courses with regards to fire origin and cause typically address lightning at some point in time. Of all of these, I don't have a specific recollection to say exactly which ones they were, but we have -- I've gone through the years and lightning has been addressed on numerous occasions.
Q. Did you take any classes when you were at

Page 52

Mississippi State that involved the study of lightning?
A. Not at Mississippi State but at the University of Oklahoma, yes.
Q. I didn't see the University of Oklahoma on here. Tell me about that.
A. I spent a year at the University of Oklahoma in Norman studying meteorology.
Q. When did you do that?
A. '81 to '82.
Q. So that was before you went to Mississippi State University?
A. Correct. I changed majors. And schools, apparently.
Q. I see that. Okay. While you were at the University of Oklahoma and you spent a year, how many courses did you take during that year?
A. I don't remember. The first semester was, I think, 15 hours. The second semester, about the same.
Q. Okay. Did you -- was there a course that was actually solely dedicated to the study of lightning?
A. Not solely dedicated to the study of lightning, but the courses were dedicated to the

Page 53

study of weather phenomenon, both macroscale and mesoscale storms, of which lightning is a component.
Q. So you have specific recollection of learning about the basics of lightning while you were at the University of Oklahoma?
MR. ELLIS: Objection. Go ahead.
A. Yes, ma'am. I remember the introduction to lightning at the University of Oklahoma.
Q. (By Ms. MacLeod) That's where I was going because I said basics. And what I was really -- what I wanted to know is: To what level of study did you get into the study of lightning?
A. Again, I believe it's my first years or first two semesters at the university, so I would imagine they're 101 level courses. I would say that it's not as in-depth of taking higher level courses on a specific topic as most higher level courses at the university become. So it gives you an understanding of lightning.
Q. Is it your opinion that taking a course or two gives you the level of knowledge that rises to being an expert in a field?
MR. ELLIS: Objection. Go ahead.
A. In a specific field? It's a very ambiguous question, I guess, because you say "in a field."

Page 54

With regards to my education and career path, which involves the origin and cause of fires, I've endeavored to study those aspects which would either affect the origin or the cause of a fire from ventilation to lightning to electrical systems. So it's the full body of my cumulative years which makes me -- gives me the expertise to talk about lightning in its relationship to the cause of fires.
Q. What about the ability to talk to lightning outside its relation to the cause and origin of fires?
A. What about it? I'm not sure I understand your question.
Q. Are you an expert other than -- are you an expert in the field of lightning outside of your expertise in determining the effect of lightning in regards to a cause and origin of a fire?
A. My expertise is involving the -- determining the origin and cause of fires. If lightning is involved in that origin and cause, then my expertise encompasses it. If it's outside of that arena, talking about what's happening in the cloud, while I have an understanding of it, that is not within my area of expertise.
Q. Let's turn to your positions held.

Page 55

A. Yes, ma'am.
Q. It looks like from your CV you were a staff technician from 1981 to 1985 with Sigma Associates, correct?
A. Yes, ma'am.
Q. And what were your job duties?
A. Basically as a staff technician, I built illustrative models for court. I conducted research, codes and standards. I assisted in field investigations, of which included fire and explosions. That's where I first got my exposure with regards to fire origin and causation investigation or analysis.
Q. And you worked there while you were attending the university?
A. During the summers, yes.
Q. So this was a summer position?
A. Yes.
Q. Then it looks like you moved on to Factory Mutual Engineering, and you were a loss prevention consultant level 2 from 1986 to 1988, correct?
A. Correct. After I graduated from Mississippi State, I went to work for Factory Mutual Engineering, which is now known as FM Global. To give you an idea of what FM Global is, I was in their

Page 56

fire and extended coverage division.
Basically I went throughout the southeast United States evaluating industrial facilities and commercial facilities with regards to the perils associated with fire. So it was -- Factory Mutual is a subsidiary of three insurance companies. So basically I would assess the risk for the insurance companies before they bound coverage -- or after they bound coverage.
Q. What insurance companies?
A. Oh, goodness. I believe it was Protection Mutual, Arkwright. I don't know whether it's Arkwright of Boston or just Arkwright. I want to say Liberty is the other one. I don't remember the exact names.
Q. And why did you leave Factory Mutual Engineering?
A. Job satisfaction, I guess, is the best way to describe it. I chose a different career path. I wanted to get out of prevention and get into the loss analysis.
Q. And you moved to Interscience, Inc. and became a senior failure analysis/branch manager, correct?
A. Yes, ma'am. From '88 to '97, basically

Page 57

nine and a half years, I worked for them. They were based out of Tampa, Florida. Interscience, Incorporated, I basically got my training under Scotty Grybek, Gene Bullington, worked in the Tampa area for a short period of time and basically was going to South Florida, Miami, Fort Lauderdale, Palm Beach so often that I petitioned them to say, Look, just move me down there.

So from then I basically was the manager at the branch office in Fort Lauderdale, Florida working the Tri-county area -- that would be Dade County, Palm Beach County and Broward County -- for the next eight some odd years doing fire and origin and cause investigations or analysis for insurance companies primarily.

Q. And why did you leave Interscience, Inc.?

A. Simple. Better money.

Q. And then you went to Engineering and Fire Investigations, Inc. or EFI, correct?

A. At the time they were known as INS Investigations Bureau. That's when I originally got on with them. Then there was a merger that took place between CH&A Corporation and INS Investigations Bureau, which then became Engineering and Fire Investigations. Basically I was at -- in their

Page 58

Fort -- I mean New Orleans office as the manager for several years, and then I transferred over to the Houston office in 2002. But, again, primarily the cases that I handled would have been for insurance companies at that level.

Q. And you were doing cause and origin fire investigation?

A. Fire origin and cause, explosion origin and cause. That was the bulk or the -- I would say the mainstay of the work that I did. But having gotten my engineering license while being the manager over there in New Orleans, my role started taking on engineering matters as well.

Q. Did you ever do any testing of products?

A. In relation to a specific fire in relation to how it related to the origin and cause of the fire, yes. But are you saying testing products in general? No. I don't think that I -- I was never part of a test laboratory that basically said, Okay, send us your product, we'll test it and tell you whether or not it performs like UL or Factory Mutual do. I don't do that.

Q. All right. And in December of 2005, you left EFI. Why did you leave EFI?

A. Again, better money.

Page 59

Q. And you moved over to Engineering Systems, Inc., and that's the current position that you hold now?

A. Correct. I started with them on December the 5th of 2005, so two days from now will be my seventh anniversary with them.

Q. And what did you start out doing for them?

A. Basically what I've been doing since I started with Interscience, Incorporated back in '88, the same thing full time, I was evaluating fires and explosions, forensic failure analysis with regards to product failures, design related issues, process and machinery related issues associated with the petrochemical industry. So I've been doing the same thing I've been doing since -- full time since '88.

Q. So with these design related issues, are those products that are being submitted to you to review for their design, or is it you're evaluating their design through the course of your investigation?

A. Correct.

Q. The latter?

A. The latter.

Q. Let's look at page 5 of this just briefly. You've taught several courses. Have you ever taught

Page 60

a course where lightning was the specific topic of discussion?

A. Well, lightning has come up in some of the fire courses I've instructed. Have I instructed a course specifically in lightning? No.

Q. Have you ever instructed a course regarding electrical fundamentals or electrical materials?

A. While a fundamental understanding of electrical topics would be a topic of discussion during the fire origin and cause, I don't believe I've presented a course specifically called "Electrical Fundamentals."

Q. Or even if it wasn't called that, I mean that's -- the entire course was devoted to electrical issues?

A. The entire course being devoted specifically to electrical issues, I have no recollection of teaching that type of class.

(Exhibit 53 marked)

Q. (By Ms. MacLeod) I'll hand you what we're marking as Exhibit 53. It is your Appendix C. It is your testimony list. And based on this, from 2008 through the present, it appears to me that you have testified in two trials. Is that correct?

A. That appears to be the case, yes.

Page 61

Q. Okay. Let's look at the first one on the first page. The case is The Offshore Drilling Company and its Interested Underwriters versus Gulf Copper & Manufacturing. Who retained you in that case?
A. Offshore Drilling Company.
Q. Did -- what was the -- just in very general terms, what was the case about?
A. In general terms, the defendant in that case was doing cutting and welding operations aboard a jack-up platform and -- while it was at the repair facility and set mattresses on fire with the slag.
Q. This case didn't have anything to do with radiant barrier systems or products?
A. Not to my knowledge.
Q. And you were retained as an expert in what field?
A. Fire origin and cause.
Q. Let's move on to the second, the David Pawlik versus Atlas Energy. On whose behalf were you retained?
A. David Pawlik.
Q. And you did not testify at trial in this matter, but you did give a deposition, correct?
A. That is correct.

Page 62

Q. And in what field were you consulted for your expertise?
A. Well, fire origin and cause on that particular case.
Q. And did this case have to do with radiant barrier system or radiant barrier product?
A. No, this had to do with fugitive natural gas in the explosion of a house.
Q. The next one down is Republic Fire & Casualty Insurance Company versus Sunbeam Products. Who retained you in that case?
A. I believe it was Republic.
Q. And again, you gave a deposition but did not testify at trial in this case, correct?
A. Correct. It was shortly after my deposition that the case settled.
Q. And in what field of expertise were you offered as an expert witness?
A. Fire origin and cause and appliance evaluation.
Q. Did this case involve anything to do with radiant barrier systems or a radiant barrier product?
A. I believe it involved a toaster or a toaster oven, so no.
Q. Second page, 2 of 5, Willie Hargrove versus

Page 63

Boxer Property Management. On whose behalf were you retained?
A. Willie Hargrove.
Q. And in this --
A. No, excuse me. That's wrong. It would not have been for Willie Hargrove. It would have been for one of the other plaintiffs, but I don't remember who.
Q. And in this particular case you gave a deposition but you did not testify at trial, correct?
A. Correct.
Q. And for what purposes or in what field were you offered as an expert witness?
A. Fire origin and cause and code.
Q. Code?
A. Code.
Q. And in regard to code, tell me a little bit about that.
A. Basically in this particular fire event, it was a deliberately set fire and there was a question as to whether or not there was an adequacy of fire protections at the mid-rise office building and --
Q. This case --
A. Go ahead.
Q. This case had nothing to do with radiant

Page 64

barrier systems or a radiant barrier product?
A. No, ma'am, it did not.
Q. Let's move on to the next one, Sharron Faye West versus Kirbyville. Do you recall on whose behalf you were retained?
A. On Ms. West's behalf.
Q. And did you give a deposition in this matter?
A. I don't think so.
Q. But you did have the opportunity to testify at trial, correct?
A. Correct.
Q. And this was a state court matter?
A. Yes.
Q. And were you qualified as an expert and in what field?
A. I was, and it would be with regards to the building codes, and in particular this one involved a ramp.
Q. Next one down, John Ensey versus Ozzie's Pipeline. Who were you -- on whose behalf were you retained?
A. Mr. Ensey.
Q. And in this particular case you gave a deposition but did not testify at trial, correct?

Page 65

A. Correct.
Q. And in what field were you consulted as an expert?
A. Personal injury accident involving the pipeline padder.
Q. Do you know what field you would put that in? It's not cause and origin, right?
A. Well, I mean, I am evaluating the origin of where the event originated. I am evaluating the cause of it. I am evaluating the mechanical systems of the piece of equipment. I have to have an understanding of their function, and I have to have an understanding of how they related to the incident itself. How to classify that one? More mechanical than --
Q. Okay. This case didn't have anything to do with radiant barrier systems or radiant barrier products?
A. It did not.
Q. And I forgot to ask you that on the Sharron West. Is that true as to that case, too, that that had nothing to do with radiant barrier systems or a radiant barrier product?
A. It did not.
Q. All right. On to the next page, 3 of 5,

Page 66

John Delcambre versus Apache Corporation. On whose behalf were you retained?
A. Mr. Delcambre.
Q. And you provided a deposition but no testimony, correct?
A. Correct.
Q. And in what capacity were you identified as an expert witness?
A. Fire origin and cause and mechanical engineering.
Q. Did this case involve radiant barrier systems or a radiant barrier product?
A. It did not. It involved the explosion of an engine.
Q. Next one, James Mouser versus Coastal Chemical. On whose behalf were you retained?
A. Mr. Mouser's.
Q. And in this particular case you gave a deposition but no testimony at trial, correct?
A. Correct.
Q. And in what capacities were you retained as an expert witness?
A. Headlight, tail lamp evaluation. Basically failure analysis.
Q. And no radiant barrier system or radiant

Page 67

barrier product involved in this particular case?
A. No.
Q. PIC Group versus LandCoast Insulation. On whose behalf were you retained?
A. PIC's.
Q. And you gave a deposition but no trial testimony, correct?
A. That is correct.
Q. And in what field were you designated as an expert witness?
A. Evidence preservation and collection.
Q. Did this case involve any radiant barrier system or radiant barrier product?
A. It did not. It involved a scaffold collapse in a boiler.
Q. Muskogee Diagnostic Imaging Service versus Siemens Medical Solutions. On whose behalf were you retained?
A. Siemens.
Q. And in this case you gave a deposition but no trial testimony, correct?
A. That is correct.
Q. And in what field were you consulted?
A. Fire origin and cause and basically appliance failure analysis with regards to the cause.

Page 68

Q. Did this case involve any radiant barrier system or radiant barrier product?
A. No, ma'am. It involved an MRI machine.
Q. Next one, Automotive Rentals versus Keith Huber. On whose behalf were you retained?
A. Keith Huber.
Q. And in this one you did testify at trial, correct?
A. That is correct.
Q. Did you give a deposition in this case?
A. No.
Q. Were you qualified as an expert witness and in what field?
A. I was. Fire origin and cause and mechanical engineering.
Q. Did this case involve any radiant barrier system or radiant barrier product?
A. It did not. It involved a vacuum truck.
Q. Bertha Rivas versus Protherm Service Group?
A. Okay.
Q. On whose behalf were you retained?
A. The plaintiff's.
Q. No trial testimony, but you did give a deposition, correct?
A. I did.

Page 69

Q. And in what field were you offered as an expert witness?
A. Accident reconstruction, failure analysis.
Q. Did this case involve any radiant barrier system or radiant barrier product?
A. It did not. It involved the failure of a ladder.
Q. Last one. Louisiana Farm Bureau Mutual Insurance Company versus Farouk Systems. F-A-R-O-U-K. On whose behalf were you retained?
A. Farouk.
Q. And in this one you gave a deposition but did not testify at trial, correct?
A. Correct.
Q. And in what field were you offered as an expert witness?
A. Fire origin and cause and appliance failure analysis.
Q. Did this case involve any radiant barrier system or radiant barrier product?
A. It did not.
Q. What did it involve?
A. Whether or not a hair iron was capable of causing a fire.
(Exhibit 54 marked)

Page 70

Q. (By Ms. MacLeod) I'm going to hand you what we've marked as appendix -- or as Exhibit 54, which is your Appendix D to your report. And this is the 2012 fee schedule, correct?
A. Correct.
Q. And your charge per hour is $225?
A. That's what the company charges for my services, yes.
Q. Correct. I'm sorry. And we've already talked about your -- getting the invoices and time billed, correct? And you're going to be providing that information to Mr. Ellis?
A. I will.
Q. Do you know whether Louisiana Pacific contends that the radiant barrier installed on the Taylor home was not TechShield manufactured by Louisiana Pacific?
MR. ELLIS: Objection. Go ahead.
A. I don't know what Louisiana Pacific contends. What I can tell you by my observation is that there was identifying information on the bottom of the panel which is captured in the photographs which you should be able to read.
Q. (By Ms. MacLeod) So it's your opinion that the product -- the radiant barrier product that was

Page 71

installed in the Taylor home was, in fact, TechShield manufactured by Louisiana Pacific?
A. My understanding of that would be what is depicted on the label and the decals. Who manufactures it, I don't know. Whether it was manufactured for them, I don't know.
Q. Is it your opinion that the radiant barrier product that was installed in the Taylor home was TechShield?
A. That was the name that I read on the bottom of other panels on the roof, yes.
Q. And as you sit here today, you don't know whether TechShield was manufactured by Louisiana Pacific or not?
A. I don't know that. That would be a better question for Louisiana Pacific.
Q. In regard to your specific work with ESI, do you know what percentage of your work by month is done for Louisiana Pacific?
A. I have no way of knowing that. I don't keep that kind of data.
Q. And really I'm just asking how you generally spend your time and how much of it, you know, in a given period is done for -- is spent on work for Louisiana Pacific?

Page 72

A. Again, I don't keep that kind of data.
Q. And you have no way of estimating?
A. Basically what I try to do is I try to get 150 hours billable per month. I don't know for which client I'm working on any given month I'm doing the work for, but if you ask me today who I worked for last month, I couldn't tell you all the various things.
Q. Okay. Fair enough. And I think you told me this before, but you don't work for any other manufacturer of radiant barrier products? You haven't done any work for them?
A. I have not done any work for any other manufacturers of radiant barrier products. Is that what your question was?
Q. Yes.
A. Then, yes, I have not.
Q. Do you know what percentage of your work is litigation related work?
A. No, ma'am, I don't. I don't keep statistics on that. When I get involved -- I call them projects. I know you refer to them as cases, so when you say cases, I think projects. A lot of times I get involved when there is no litigation involved. They may or may not develop into litigation at some

Page 73

future time. Sometimes I do get involved after litigation has started.
Q. Are you aware as to how many of the projects regarding TechShield that you've been involved with are in litigation?
A. I don't know. I know this one is.
Q. Do you have any ability to recall any of the other projects for Louisiana Pacific that you've worked on?
A. Say that one more time.
Q. Do you have any ability to recall any of the other projects that you've worked on for Louisiana Pacific?
MR. ELLIS: Object to form. Go ahead.
A. I mean, I recall the various projects that I've worked on. Now, to get a clearer understanding of a particular one, then I would have to look back at that file.
Q. (By Ms. MacLeod) If I told you that it was my understanding that you'd worked on seven investigations on behalf of Louisiana Pacific in which McDowell Owens was also involved, would that number seem reasonable to you?
MR. ELLIS: Object to form. Go ahead.
A. Again, I don't know the exact number. If

Page 74

McDowell Owens has been counting them, then I sign in at each of those locations that I've been to. If the number is seven, then the number is seven. I don't know.
Q. When did you first learn about the Taylor fire?
A. On September the 30th of 2011.
Q. And do you recall how you found out about the Taylor fire?
A. I do.
Q. Tell me about that.
A. I was called by Mr. Murphy.
Q. What did Mr. Murphy tell you about the fire?
A. "There's a fire in North Carolina. Can you come over and help us figure out what happened?"
Q. Did he give you any details about the fire?
A. Suspected lightning, I think, is my recollection.
Q. Any other conversation that you recall with Mr. Murphy in regard to being retained to go out and do an investigation at the Taylor home?
A. The date it happened, location it happened, that kind of basic information, so, you know, I can go ahead and set up the project and make sure I meet

Page 75

him on a certain date and time and that kind of thing. Anything more specific than that, not that I recall.
Q. Let's go ahead and mark Exhibit 55.
(Exhibit 55 marked)
Q. I'll represent to you that these were documents that were produced to me on last Thursday afternoon in a part of your file. Do you recognize these?
A. Exhibit 55, page 1, yes, I recognize it. It's a sketch I prepared.
Q. When did you make that drawing?
A. It's dated 10-21-2011.
Q. Did you do that while you were out at the Taylor home doing the joint inspection?
A. I believe so, yes.
Q. If you'll turn to page 2 of Exhibit 55?
A. Correct.
Q. Is this your handwriting?
A. If you want to call it that, yes.
Q. What is this -- what have you done with -- it looks like on page 2 you've made a list of various items. Tell me about that.
A. Yes. This is the manufacturing information from various products that were further documented

Page 76

while I was at the site. So I've reviewed photographs and retained this information.
Q. Once you obtained this information, did you do any further research after you left the joint site inspection?
A. I did, and that information is included in the report.
Q. During your investigation into the cause and origin of the Taylor fire, were you able to rule out the Quadra-Fire by Hearth & Home as a probable cause of the fire?
A. The hearth itself or the actual stove, yeah. Although there was burned wood products within the stove, the fire did not appear to have originated in the vicinity of the stove or the stove's chimney. However, the chimney associated with the wood stove was contributory to the event.
Q. And how so?
A. It was the object that was first struck by the lightning, and it provided the conductive path of the lightning into the home.
Q. Were you able to rule the chimney out as a probable cause of the fire?
A. It contributed to the overall cause. The chimney itself -- and I'm looking at it from the

Page 77

standpoint of heat from within the chimney igniting combustibles in the vicinity of the chimney. That did not occur.
Q. So it was not -- the origin of the fire was nowhere near the chimney?
A. The origin where the lightning struck was in the vicinity of the chimney, but the origin of the fire was not in direct proximity to the chimney.
Q. Okay. In regard to the smoke detector, were you able to rule that out as a probable cause of the fire?
A. While the smoke detector's electrical circuit was affected, the smoke detector itself was located within the living spaces and it was not related to the cause of the fire.
Q. Then it looks like there's a KitchenAid appliance. Were you able to rule out the KitchenAid appliance that you've identified on page 2 of Exhibit 55?
A. That would be the dryer. And your question is was I able to --
Q. Rule out --
A. -- to rule it out?
Q. -- the dryer as a cause of the fire?
A. The dryer vent stack, the dryer transition

Page 78

hose, the dryer itself and its associated electrical system were involved but not -- they did not cause the fire.
Q. And you said they were involved. How were they involved?
A. They were part of the conductive path.
Q. And when you say "the conductive path," what do you mean?
A. For the lightning strike through the home.
Q. Can you describe for me -- I guess you said that the lightning directly struck the chimney cap on the exterior of the Taylor home?
A. Correct. That's evidenced by the localized melting that was exhibited. It was exhibited by resolidified metal that was still present, but there's actually evidence where the steel was melted at a very localized point on the chimney. So yes, the chimney was struck by lightning.
Q. And if you will, just take me through the -- this conductive path that you're talking about.
A. The conductive path -- now, the totality of the conductive path is no longer available because of the destruction and disturbance of the fire scene. But portions of it are still available for analysis.

Page 79

The eastern portion of it would be -- the chimney is on the eastern portion of the north slope of the roof. It starts there and progresses generally west, south -- I mean west-northwest towards the terminating cap for the dryer exhaust vent that is up on the roof.
Q. And so lightning struck the chimney, traveled down the chimney vents and where did it go from there?
A. It progressed through the roofing system to the dryer vent stack, then down the vent stack into the dryer and to the dryer exhaust -- I mean, excuse me, the dryer's electrical system.
Q. Okay. And then from there --
A. Through the electrical system of the house to ground.
Q. And you said roofing system?
A. Yes, ma'am.
Q. And what are you referring to when you talk about "roofing system"?
A. The roofing system would be the decking, the roofing membrane, the nails associated therewith, the support structure, which would be the wooden framing members and the nails associated therewith.
Q. And when you say decking, what is that

Page 80

referring to? Is that the TechShield?
A. Yeah, the oriented strand board with the aluminum membrane underneath the TechShield.
THE VIDEOGRAPHER: Going off the record at 11:07 a.m., ending tape 2.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 11:13 a.m., beginning tape 3.
Q. (By Ms. MacLeod) Mr. Scardino, we were looking at Exhibit 55, which are notes that were produced to me with your file. If you will turn to page 3.
A. Okay.
Q. And this appears to be handwritten notes. Is that your handwriting?
A. It is. How bad it is? Yes, that's mine.
Q. It's not so bad. I can read it.
Okay. So it has mentioned an information for Randy Likens, who is a -- has been designated as a fire marshal, correct?
A. For the Franklin County Fire Department.
Q. And did you make any contact -- or did you ever contact Randy Likens?
A. I did.
Q. Do you recall how you made contact?

Page 81

A. By phone.
Q. And when did you talk to Randy Likens?
A. I don't remember the specific date. After I was at the scene is my recollection.
Q. Do you recall making any attempt to get a copy of the fire report and the 911 call prior to going out to the scene?
A. I don't remember. I know I got them, but I don't remember when.
Q. Apparently -- I'm not going to show you right now. I will just tell you that in -- attached to your report...
(Exhibit 56 marked)
Q. (By Ms. MacLeod) Let's go ahead and mark this as Exhibit 56. It is Appendix J to your September 28, 2012 report.
A. Okay.
Q. So this includes a facsimile from Randy Likens to you dated 10-20-2011, correct?
A. It does.
Q. And it also contains an e-mail. Does this help refresh your recollection?
A. It looks like on October the 19th, I sent an e-mail to him as a followup, which suggests that I contacted him prior to that. So yes, so October

Page 82

the 19th, there's an e-mail looking for the report.
Q. Okay. And do you recall whether you -- you recall talking to him on the telephone. Did you talk to him more than once on the telephone?
A. I don't recall.
Q. But now that you've seen this facsimile, does that make you believe you talked to him on the telephone before you went out to the scene and before you sent this e-mail?
A. Yes.
Q. Okay. And do you recall anything at all, even of a general nature, about the discussions that you had with Randy Likens about the Taylor incident?
A. No. I was having trouble identifying exactly which run it was for them, which incident, fire incident it was. So I was having to ask him questions about -- you know, giving him what little information I had to say, Okay, this is the location. I'm looking for the information. That's the majority of what I recall from my conversations with him. Also, I spoke to him with regards to other fire events that happened on the same date.
Q. So first you had a conversation helping him so that he could help you provide the fire department report by providing him with whatever information you

Page 83

had available, correct?
A. I don't know if I was helping him or hindering him at that point. I gave --
Q. Y'all were working together to try to determine --
A. We were trying to figure out which fire I was talking about.
Q. Okay. And is it during that discussion that you realized that he was having a hard time determining which fire it was because there was more than one fire that night?
A. That was one of the things I was also endeavoring to try to figure out is whether or not there were more fires. And if there were, could he provide me the information on those as well.
Q. Okay. Did he provide you the information on the other fires?
A. No.
Q. Why not?
A. I don't know. You'll have to ask him.
Q. Didn't know whether he told you "I can't do that" or it just didn't happen.
A. I never received them, so I can't answer that.
Q. Did you ever make any followup with Randy

Page 84

Likens or anyone at the Franklin County Fire Department to obtain the information on the other fires?
A. I don't recall.
Q. But as you sit here today, you haven't seen the information on the other fires?
A. Correct.
Q. And if you had had any other e-mail correspondence with Randy Likens, that would have been something that was in your file?
A. More than likely, yes.
Q. Do you recall whether you had any other e-mail correspondence with Randy Likens?
A. I don't.
Q. Is your normal practice and procedure when you do have e-mail correspondence regarding a project, that that goes into the project file?
A. Typically what I do is I print it out and if I, like, need to contact somebody, I'll write notes on it, it would go in the file. So yes, it would typically go in the file.
Q. Would that be part -- you had mentioned earlier electronic files in regard to the Taylor case. Is that -- would you -- do you delete your e-mails?

Page 85

A. I do delete e-mails.
Q. Why do you do that?
A. Because I hate looking at an inbox that has a thousand e-mails in it. I just --
Q. So you don't take them over and store them in another --
A. Typically I try to save them in the electronic file.
Q. And this would be your normal practice?
A. Yes.
Q. So in the process of going back and getting me the electronic file, you'll include any e-mails if they exist? Honestly that includes any e-mails with either George Murphy, with Neal Ellis, Nathaniel Parker, anybody at LP about this case. Those are things that have been requested.
A. Okay.
Q. Okay?
A. E-mails associated with this particular project?
Q. Yes.
A. Okay.
Q. I probably already asked you this and I apologize, but I just want to make sure I have. Other than Randy Likens, did you talk to anybody else

Page 86

at the Franklin County Fire Department about the Taylor fire?
A. I mean, I might have, like a secretary or something. I don't remember specifically Randy Likens was the name. Probably got his name -- first I wrote it as Randy Watkins. That's how I heard it on the phone and that's the difference between Texan and North Carolina.
Q. But you can't remember anybody other than Randy Likens?
A. No, ma'am.
Q. Did you ever talk to anyone at the Bunn County Fire Department about the Taylor fire?
A. Not to my recollection.
Q. Did you ever talk to anyone in the Louisburg Fire Department about the Taylor fire?
A. No, ma'am. What I'd asked Randy was if he could get me those as well, if he had access to that. And he said that he would. But --
Q. Doesn't appear that he did?
A. No, ma'am.
Q. Did you ever talk to anyone at the Youngsville Fire Department?
A. No, ma'am.
Q. Did you ever talk to anyone at the Franklin

Page 87

County EMS?
A. Well, I mean, if Randy is associated with the EMS, I don't know.
Q. Did you ever make a specific call to the Franklin County EMS department?
A. Not to my knowledge.
Q. When you were having your telephone conversation with Randy Likens about the other fires, asking him to provide you with the information from those fires, did he tell you how many other fires there were on August 29, 2011?
A. I don't recall.
Q. Was it necessary for you to know how many other fires in that area that happened on August 29, 2011 -- strike that.
Was it necessary for you to know the number of other fires that occurred in the area for you to be able to render your opinions that are set forth in your September 28, 2012 report?
A. The information would have been germane to my analysis because if there were multiple fires, then knowing what the cause of those multiple fires, that would have also opened up additional avenues of inquiry that may have needed to have been resolved prior to issuing the report. So is it germane? Yes.

Page 88

Was I able to prepare the report without it? Yes.
Q. If it was germane to your report, why did you not follow up and obtain that information?
A. I attempted to. I was unsuccessful.
Q. But it didn't prevent you from being able to render the opinions that you rendered in your September 28, 2012 report?
A. That's what I just said, yes.
Q. Okay. Was your understanding from talking to Randy Likens that those other fires were lightning related fires?
A. I didn't have a feeling one way or the other. There was a newspaper article that had indicated multiples. Part of my inquiry of Mr. Likens was to see is there any validity to that newspaper article.
Q. Is that newspaper article a part of your file?
A. Um --
Q. Will you put that on your list? I'll tell you that I printed everything off and looked through all of the file materials provided. It wasn't a part of that. So if you will look for that, I'd appreciate it.
A. Okay.

Page 89

Q. If you had been able to discover that there were, in fact, other fires and that those fires were lightning related fires, would that information alone have changed any opinion that you made in your September 28, 2012 report?
A. No, ma'am. Lightning causes fires.
Q. If you had discovered during your investigation that there were other fires, that they were lightning related fires and that there was no radiant barrier in those homes, would that have changed any opinion that you made in your September 28, 2012 report?
A. No, ma'am. Lightning causes fires.
Q. If you had learned during your investigation that there were other fires, that they were lightning related and that they had radiant barrier product in them, would that have changed any opinion that you gave in your September 28, 2012 report?
A. No, ma'am. Lightning causes fires.
Q. Then help me understand -- because I'm sure there's just something that I'm missing -- why it is that you told me just a few minutes ago that knowing that information would have been germane to the opinions that you issued in your September 28, 2012

Page 90

report?
A. Depending on how many they were, it would reaffirm my contention that lightning causes fires. Not just this fire but any other fire that occurred during that lightning storm on that particular date in North Carolina, there would be additional evidence that lightning causes fires in residential structures.
Q. Would it be important to you to know that for this same area where the Taylor fire and these other potential fires were, that there were houses struck by lightning where there was no fire?
A. That's correct, there are instances where lightning strikes a house and there is no fire.
Q. How -- knowing that information, how would that have affected any opinion that you have rendered in your September 28, 2012 report?
A. It would not. Lightning causes fires, and lightning can strike a structure and no fire results. It would not change my opinions.
Q. Let's turn back to Exhibit 55. And that's your handwritten notes, correct?
A. Correct.
Q. Let's turn to page 4.
A. Yes.

Page 91

Q. Do you recall when you made these particular notes on page 4?
A. Yes.
Q. Can you tell me?
A. The date of the joint site exam.
Q. And do you know where you got this information?
A. Mr. McGraw.
Q. Is this the information that he provided during that initial meeting before everyone sort of got started with their investigation?
A. Yes.
Q. If he had provided you a copy of the fire department report, would you have made a note of it here?
A. Probably not. I would just have the report.
Q. Do you remember whether he provided you with a copy of the fire department report?
A. I don't remember.
Q. Do you know -- looking back at Exhibit 56, the facsimile to you is dated 10-20-2011. Do you know whether you actually received that before you went to the joint site inspection on October 21st, the next day?

Page 92

A. I'll be honest with you. My recollection is I traveled in on the 20th, did the examination on the 21st and flew out on the 21st. There's a good chance I didn't.
Q. Having that wouldn't -- would having that have made any difference in how you investigated the Taylor file?
A. No.
Q. If you'll look at page 5, can you tell me about -- is this a conversation you had with George Murphy?
A. It is.
Q. Can you tell what day you had that conversation by looking at this?
A. No, ma'am. That's probably based upon his initial contact and giving -- checking for availability on certain dates.
Q. Looks like y'all were trying to decide whether you might do the joint site inspection on 10-13 or 10-21?
A. Correct.
Q. If you'll look at page 6.
A. Yes.
Q. These look like handwritten notes dated 10-20-2011, the day before the joint site inspection,

Page 93

correct?
A. Yes.
Q. And do you -- this is your handwriting?
A. It is. And this is a review of the fire incident report. So to answer your prior question, yes, I did have the fire report before I went.
Q. Okay. I've looked through these and I didn't make that connection, so -- all right. And when you were going through that, you were highlighting and writing down the information that you considered important for your investigation?
A. No, ma'am. I was just writing down the important information. I didn't know at that point in time whether it was important to the investigation or not. I was just writing down the information as part of my process.
Q. Okay. You have a name down here of Matthew Strawbridge.
A. Help me out with that. Where is that one?
Q. It's close to the bottom.
A. Okay, see it. Yes, I see Matthew Strawbridge, officer in charge.
Q. Did at any point you have an opportunity to speak with Matthew Strawbridge about the Taylor fire?
A. I don't recall speaking to Mr. Strawbridge.

Page 94

Q. Do you know what his rank at the time of the fire was?
A. I do not.
Q. Do you know what role he played in the Taylor fire?
A. It says officer in charge. What that entails, I don't know.
Q. Do you know whether he actually went out to the fire scene?
A. I don't.
Q. Do you know whether he's part of the fire department investigator's task force?
A. I do not.
Q. Did you do under -- excuse me. Did you undertake any investigation to determine what training, if any, that Matthew Strawbridge had in regard to determining a cause of fire?
A. I did not.
Q. Let's turn to page 7 of Exhibit 55.
A. Okay. Yes.
Q. These are handwritten notes dated October 21, 2011, the date of the joint site inspection, correct?
A. Yes.
Q. Tell me about this page of notes, if you

Page 95

know.
A. That is my understanding of Mr. Taylor's observations when he arrived home.
Q. Did you actually have a conversation with Christopher Taylor that day?
A. He was there. My recollection is he did provide some information. If it was not through them, then it would have been through Mr. McGraw that this information was provided.
Q. Okay. And so as you sit here today, you don't know whether you received and wrote down this information from a conversation you had with Christopher Taylor or whether it was a conversation you had with Rob McGraw?
A. I think it was a combination where all of us were present and we spoke with Mr. McGraw and Mr. Taylor was present was my recollection.
Q. Page 8, is this just a continuation of notes that were taken on page 7?
A. Page 6. Yes.
Q. Oh. So it's out of order?
A. Yes, ma'am. The cell phone number came off of the 911 records. So that would have been associated with the fire incident report review.
Q. Okay. So page 8 is actually the second

Page 96

page of notes to page 6?
A. Yes.
Q. If you will, please look at page 9.
A. Yes.
Q. Do you recall when you took these notes?
A. No, I don't. It was before my preparation of the report is the earliest I can get you.
Q. And is this -- are these notes from a conversation that you had with David Delwu?
A. Delwu is how I understand it. It could be spelled wrong but --
Q. No, it's spelled correctly. I just haven't -- I didn't know how to say it.
A. Correct. The characteristic test up at the top, I listed and I asked him about those and he basically said it's a Class A, Class 1 fire rating.
Q. Why were you asking him about -- does that say burn tunnel test and burn characteristics test?
A. I asked him what testing had been done on the product.
Q. Why did you want to know what testing had been done?
A. To get a better understanding of the product.
Q. Did Mr. Delwu provide you with test results

Page 97

for the product?
A. I believe -- I don't know whether he provided it directly. I got a copy of a -- I think it's called Selkirk is the name of a group that did some testing on the radiant barrier, and I got a copy of that report. I think I included it in --
Q. Intertek, is that --
A. Intertek, I'm sorry. Selkirk is the chimney. My apologies.
Q. Okay. So the -- who provided you the Intertek report?
A. My recollection, it came through Mr. Delwu. Who provided it exactly, I don't remember.
Q. Did he provide you any testing to ASTM E84 standards?
A. I don't think so.
Q. Other than the Intertek results, do you recall getting any other test results --
A. I did.
Q. -- in this case?
A. I did.
Q. You did?
A. Yes.
Q. Tell me about the other test results that you received.

Page 98

A. Good Lord, I don't remember the name on them. But there's another report with regards to testing that was done on the panel.
Q. Was it in regard to the quality of the aluminum?
A. No, I think it had to do with its fire rating characteristics. That was provided to me by -- I get his name wrong every time. Nathaniel.
Q. Nathaniel Parker?
A. Yes, ma'am.
Q. It was only one report, or do you know if there were two reports, one for ASTM E84 and one for ASTM E2599?
A. It came to me as one thing. I don't know if both reports are in it or not. I don't remember that.
Q. Did you review those reports?
A. I did review them.
Q. If there were two. You reviewed what Nathaniel Parker sent?
A. What was sent to me. I don't know -- again, my recollection is I don't remember exactly which standards they were tested to.
Q. Do you recall whether you reviewed that information that was sent to you by Nathaniel Parker

Page 99

before or after you wrote your report?
A. After.
Q. Did the review of that material sent to you by Nathaniel Parker cause you to change any opinion that you rendered in your September 28, 2012 report?
A. No.
Q. Was there anything in that information that was germane to any finding that you made in your September 28, 2012 report?
A. I don't remember.
Q. Were they relevant at all to any of the work that you were asked to do?
A. I don't remember.
Q. You don't remember the content of them?
A. Not specifically enough to answer that question.
Q. So it wasn't something that you felt like you needed to include in your September 28, 2012 report?
A. I didn't have it, so I couldn't have included it in the report.
Q. Yeah. And I guess really my question was: If you had had it, would you have included it in your September 28, 2012 report?
A. More than likely I could have. I don't

Page 100

know.
Q. You don't know. Okay. So other than the information that Nathaniel Parker sent to you and the Intertek report that you believe was provided to you by David Delwu, are you aware of any other test results for TechShield that you were provided?
A. Those are the ones I recall.
Q. Tell me what it means here. You've written, "Fireproof quality of a layer of pure aluminum." What discussions did you have with Mr. Delwu about that?
A. Basically he said fireproof quality of a layer of pure aluminum was its ability to reflect the heat.
Q. It didn't actually have anything to do with the ability to not catch on fire, right?
A. I'm not quite sure I follow your question. Are you saying its ability to not catch on fire from what?
Q. Well, I mean, why were y'all talking about the fireproof quality of the layer of pure aluminum?
A. Basically he was explaining to me when they run this test, the aluminum acts to reflect the heat, which prevents the panel from heating up to its ignition temperature and producing the vapors that

Page 101

actually catch on fire and burn. So its reflective property actually inhibits the exposure -- or the ignition of it from exposure to a fire.
Q. And what the -- is that what it says in the Intertek report?
A. I don't remember.
Q. Do you remember whether he told you that they had actually done testing to determine the fireproof quality of the layer of pure aluminum?
A. Not to my knowledge.
Q. Not to your knowledge that he told you, or not to your knowledge that they haven't done that testing?
A. Either way.
Q. Do you recall what you asked him that made him tell you about the fireproof quality of the layer of pure aluminum on TechShield?
MR. ELLIS: Objection, form. Go ahead.
A. I do not.
Q. (By Ms. MacLeod) You've got notes here about Class A/Class 1, and then I actually am having a hard time reading those next words. Do you know what they say?
A. Okay. "All radiant barrier type products

Page 102

will burn. The metalized product is not fireproof."
Q. What does it say -- actually, I was trying to figure out what it says out to the right of Class A/Class 1.
A. "Fire rating."
Q. "Fire rating." Is that something you wrote down because Mr. David Delwu made that comment to you on the phone?
A. I don't remember. It could be, yes.
Q. Do you recall what y'all were talking about that led to you making that note?
A. Not directly. My understanding was these testing appear at the top, but I don't recall the specific aspects of the conversation.
Q. Okay. Knowing what you know now as you sit here today, having reviewed the information from Nathaniel Parker, having reviewed the Intertek, having these conversations, doing the investigation that you've done, what meaning does it have to you that all radiant barrier type products will burn, the metalized product is not fireproof?
A. Basically these tests discuss a rate of burning. So in and of and by themselves, they say that the product that's being tested burns. They're just judging the rate at which it burns, how fast it

Page 103

propagates the fire.
Q. Okay. And is the -- the next note that the fireproof quality of the layer of pure aluminum, is that sort of a continuation of that thought, that the aluminum that is adhered to the OSB actually inhibits the fire temperature?
A. Because it has a reflective property, it delays the heating of that surface. The preheating of that surface is what requires the -- to off-gas the vapors that will actually burn and propagate fire.
Q. Do you understand anything about this testing? I mean, how are they heating this product?
A. With a gas burner is my understanding. It's a very specific test, and the parameters of that test are explained in ASTM standards.
Q. Do you know when they test that product whether they are using gas burners that -- is the aluminum product facing the gas burners, or is the OSB facing the gas burners?
A. My understanding is it's as installed.
Q. Which would be?
A. Radiant barrier down towards the heat source.
Q. So that's aluminum towards the gas burners?

Page 104

A. That would be my understanding, yes.
Q. You haven't participated in any of those tests?
A. The ASTM testing?
Q. Yes.
A. No, I have not.
Q. Where are you getting your understanding of how those tests are conducted?
A. From the explanation of the ASTM standards.
Q. So just from a review of the standards?
A. Yes.
Q. Not from conversations that you had with anyone at Louisiana Pacific about the testing that took place?
A. Not to my knowledge.
Q. What's the difference between a burn tunnel test and a burn characteristic test?
A. I would have to consult the specific standard.
Q. That's not something you intend to offer any opinion at the time of this trial on?
A. I was not planning to, no.
Q. If you'll look, the last little note says, "Energy code, climates and" -- what does that mean?
A. There are energy codes in various states

Page 105

and various climate zones throughout the United States, and the use of a radiant barrier style material is sometimes dictated by those energy codes.
Q. Was Mr. Delwu asking you to go and look up the energy code climate zone -- or energy codes for climate zones in North Carolina?
A. No, ma'am.
Q. Did you actually do that?
A. I believe I included it with the report, did I not?
Q. I believe you did.
Let's mark this as Exhibit 57.
(Exhibit 57 marked)
Q. (By Ms. MacLeod) What is this document?
A. It's called a Compliance Guide for Homes in North Carolina, based upon the 2012 North Carolina Energy Conservation Code.
Q. And did you locate this document?
A. My recollection is yes.
Q. Okay. And do you think it was prompted by this conversation that you had with David Delwu?
A. No, ma'am.
Q. Had you already done that?
A. I'd come across the presence of compliance guides when I was basically researching general

Page 106

information on radiant barriers.
Q. And you actually printed out this document that is called Compliance Guide for Homes in North Carolina, Code: 2012 North Carolina Energy Conservation Code.
Help me understand what this document tells you and what its relationship to this particular case is.
A. My understanding of this document is you would select the county in which you reside. In this particular case it was Franklin. Franklin appears in the column on the right-hand side in the green climate Zone 4. Then you would go to the bottom of the page in the table and you'd look at Zone 4 and it basically tells you if you have these types of windows, if you have this type of insulation and this type of foundation, the required insulative properties that you need to have on the ceilings, the walls, the floors, skylights and so on.
Q. Does radiant barrier -- or do radiant barrier products fall into one of the three categories of windows, insulation, foundation?
A. Radiant barrier could be utilized to assist with meeting that requirement, but you can meet this requirement without it.

Page 107

Q. Do you know if this requirement was in place back in 2008 or 2009?
A. I do not have the version of the North Carolina Energy Conservation Code from that era, so I don't know.
Q. Do you intend to offer any opinions in regard to the NCECC at the trial of this matter?
A. There is a code that's applicable. This is not the particular one that was applicable at the time of construction, but specifically with regards to this Energy Conservation Code, I don't know that I have any particular opinions that are going to be addressing it specifically.
Q. Do you know what code was applicable?
A. I do not.
Q. So I take it you don't have any knowledge of whether that code that was applicable was violated?
A. According to some pictures that I reviewed, in those photographs it specifically indicates on the plans which code was applicable, but I don't remember which code that was. I want to say -- no, I don't remember.
Q. Have you been asked to or do you intend to provide any opinions at trial that the applicable

Page 108

code was in any way violated during the construction of the Taylor home?
A. I'm not, to my knowledge, planning to indicate any code deficiency is responsible for the origin and cause of this fire.
Q. Of the radiant barrier fires that you've been consulted with to perform a cause and -- an origin and cause determination, how many of them were you able to determine the point on the house that was struck by lightning?
MR. ELLIS: Object to form.
A. I mean, I guess the premise of your question is that radiant barrier fires. Are you asking whether or not the fires which I've been asked to evaluate from an origin and cause standpoint on structures that had radiant barriers on them, if I was able to determine the location where the fire -- the lightning first struck the building?
Q. (By Ms. MacLeod) That is my question.
A. Was -- did you ask for a specific number?
Q. No, I'm not really asking for a number. I guess I'm asking for a percentage.
A. Again, I don't have that statistic. During the evaluation process at the various sites, have we been able to identify the point where the lightning

Page 109

hit? On some occasions, yes; on some occasions, no. Depends upon the severity of destruction caused by the fire.
Q. Like, for instance, with some of the cases or projects that you're working on now, at least one of those the house burned down, correct?
A. Again, house burns down, burns up. To what extent are you talking about, the consumption of the structure from the fire event? It's -- it's difficult for me to answer that question. Does the house burn down, does the house burn up? Help me out a little bit.
Q. Okay.
A. It all depends upon --
Q. Obviously your fire dynamic principles were not taken into account when I asked that question. I just meant that the entire structure was consumed by fire, making it difficult -- making it impossible to locate the area where lightning struck the structure?
A. To answer your question, rarely is the entirety of a structure consumed during a fire event. The location where the lightning struck the structure could have been consumed during the fire and, hence, is no longer available for identification, yes.

Page 110

Q. Well, and I guess -- I guess I'm a little bit surprised that I'm having such a hard time talking to you about projects where you're actually investigating the origin and cause and there's been a fire and there's been an allegation that TechShield is involved. That's really -- I'm trying to get a sense of those particular projects that you've been working on. I mean, is it -- is it hard for you to remember them specifically because you have so many?
A. No, ma'am.
MR. ELLIS: Object -- just a second. Objection to form, particularly statements by counsel. You can answer the question.
A. Could you repeat the question?
Q. Sure.
A. Or just have it read back?
Q. No, no, no. I don't mind.
I mean, you know, I probably -- that was probably too informal a question because what I'm trying to determine is some information about other projects that you've been asked to work on that involve fire and a claim that the TechShield was involved in the fire. And what I was trying to ask you is: In the projects that you can recall, do you recall being able to determine the point where the

Page 111

lightning struck the home in those projects?
A. In some, yes. In some, no.
Q. Can you give me any idea of when you can't determine where lightning struck the structure, what the reasons you can't make that determination are, in the particular projects that you are working on or have worked on?
A. The severity of damage and/or alteration of the scene.
Q. Can you recall a specific project where there was fire and alleged that the TechShield contributed to the fire of a time when you could not determine where the lightning struck the structure because there was an alteration of the scene?
MR. ELLIS: Objection. Go ahead.
A. Can I tell you a specific one?
Q. Uh-huh.
A. Not off the top of my head, no.
Q. Can you tell me a specific project that you worked on, consulted on on behalf of Louisiana Pacific in which there was fire and an allegation that the radiant barrier or TechShield caused the fire in which you were unable to determine where lightning struck the structure because the -- because of the level of destruction -- I don't know whether

Page 112

the word is "consummation" -- of the structure due to fire?
A. Do I have specific recollection of one? Yeah, I remember one off the top of my head, yeah. It was in Texas. But which city? Austin, I think. I don't remember exactly.
Q. Other than -- I know you said you couldn't remember or couldn't recall any where alteration of the scene prevented you from making a determination of where lightning hit a structure and you can think of one where the level of destruction due to fire prevented you from being able to make a determination where lightning hit the structure. Can you think of any other time where you were unable to make a determination as to where lightning hit the structure?
MR. ELLIS: Objection. Go ahead.
A. Again, I don't have a recollection at this point in time, no.
Q. So you've done your best to recall what you can remember and to tell me what you can remember at this point?
A. Yes, ma'am. I haven't -- nothing is coming to mind, no.
Q. Okay.

Page 113

THE VIDEOGRAPHER: Going off the record at 12:11 p.m., ending tape 3.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 12:47 p.m., beginning tape 4.
Q. (By Ms. MacLeod) Mr. Scardino, let's turn our attention to the investigation that you undertook at the Taylor home on October 21, 2011.
A. The site visit?
Q. The site visit, yes. If you will, walk me through that, how you did it, what you inspected.
A. In general terms, arrived at the site. We spoke with -- I believe it was Mr. McGraw. There were other people there. To name them all, I don't know. Basically once I got the rudimentary information about the chain of events or the circumstance of events, I went about evaluating the structure, looking for where its electrical service entered, its gas service entered, how it was configured.
The gas service was a buried LP tank. Photo documented it. Photo documented the pad-mounted transformer. Started with my exterior views of the property as well as the house. Basically documenting what I saw, where it was

Page 114

located at the time that I saw it.
Then moved into the structure. I started on the lower level is my recollection, documented all of the lower level, the two electrical distribution panels. Also documented the exterior distribution panel. We -- I then ascended to the second level and again completed my documentation up there.
I think after I finished that -- the first stage of the scene visit, we went outside and we did more further intrusive exam of the water heater -- what else was out there -- receptacle and there's something else, but I can't remember what it is right now. Then we went up on the roof, looked at the chimney, looked at the dryer vent. I think -- the sequence may be off a little bit, but eventually I made it into the attic and documented the attic and stuff above the -- I guess the bathroom and stuff on the north side. Documented the crawlspaces and stuff on the southern portion of the second level.
So I basically tried to see all the various aspects of the structure, document the burn damage patterns that I saw, document the dumpster out front that was full of debris that had already been removed from the structure, documented the fact that

Page 115

there were new oriented strand board panels laid over the top of the fire damaged portion of the structure, and so that immediately told me that they were put up after the fire. There was a blue tarp on the roof. Just noting my general observations, gathering data.
(Exhibit 58 marked)
Q. (By Ms. MacLeod) I'm going to hand you what's been marked as Exhibit 58.
A. Yes, ma'am.
Q. If you will look through those. Have you seen those photographs prior to today?
A. No, ma'am. Or at least this first one. Second one, third one, fourth one and fifth one, I have never seen those before.
Q. In looking at them now, do you recognize that these are photographs of the Taylor home?
A. They appear to be, yes.
Q. I'll represent to you that these are photographs taken by the Taylors after the fire at their home and before any remediation took place.
A. Sometime after the fire, correct.
Q. Correct, after the fire, before the remediation and before the OSB sheathing was installed.
A. I understand your representation, yes.

Page 116

Q. You can look at these photographs and you can see that there is significantly more of the gypsum board appearing in these photographs, correct?
A. Yes, ma'am. The drywall is present.
Q. And the fan that was hanging down on the ceiling?
A. The one that was in the Dempsey dumpster when I got there, yes, ma'am.
Q. You see it is there and it does not appear to be melted or burned, does it?
A. The fan itself? No, ma'am.
Q. I thought I had a question.
A. I don't recall one. I'm sorry. I didn't think there was a question pending.
Q. I know we just had an opportunity to look at these today, that you haven't seen these photographs prior to today, but is there anything in these photographs that attracts your attention and/or gives you any insight into the fire at the Taylor home?
A. No more than what I already have.
Q. So they don't tell you anything that you didn't already know?
MR. ELLIS: Object to form.
A. Well, it definitely allows a depiction of

Page 117

the northern portion of the living room/dining area and its associated ceiling and remains of the roof subsequent to the fire, but it doesn't allow for any further analysis in that regard.
Q. Okay. If at any time you go back and look at these and it does change your analysis, if you will please let your counsel know so that he can let me know.
(Exhibit 59 marked)
Q. (By Ms. MacLeod) I'm handing you what we've marked as Exhibit 59. And do you recognize these photographs?
A. I do.
Q. And there are three photographs here, and on each there appear to be lines and letters added to the photograph?
A. Yes.
Q. Do you know who made those markings?
A. I did.
Q. Who did?
A. I did.
Q. You did? Okay. And on page 1 of Exhibit 59 --
A. These are not numbered, so --
Q. Page 1 is the one that has the sticker on

Page 118

it?
A. Okay.
Q. And it is -- it has a black hashmark box on the front of it?
A. Correct. There's dashed lines that create a box, correct.
Q. Did you make that marking?
A. I did.
Q. Okay. And does that denote the area of origin that you have identified in your report dated September 28, 2012 in which you describe on page 3 under "Observations" the area where the fire originated?
A. It does not.
Q. It does not. What does that box represent?
A. Basically that is looking at the photograph from the McGraw report. That was the area that he has hash-marked in his report. So what I was trying to accomplish was seeing that same area on the prefire photograph of that same location.
Q. Do you disagree with Rob McGraw's determination as to the area of origin that he has identified for this fire?
A. With the premise that this area, this rectangular shaped area depicted here, terminates at

Page 119

the north wall of the living room/dining area, I would because it actually would extend beyond that north wall into the attic space beyond. But if Mr. McGraw's area of fire origin extends beyond that, say a foot or 18 inches, then my area would be in agreement with his.
Q. If you look again at that first page which has the sticker on it and the black box, there are markings on the right that are identified as B?
A. Yes.
Q. Do you know why you put those marks on there?
A. In order to -- you have to look at all three pictures simultaneously in order to get a full view of the entirety of the north slope of the roof above the living room. The match lines that I put on there are to help you with that composite image where the B rafter is identified in each of the photographs 1 and 2. And then A is identified photographs 2 and 3.
Q. I mean, that was really -- I was confused because if you look at the middle photograph that you have on the table, the one that has an A and a B on it, it has B being identified to the left on the photograph of the black hashmark that would be on

Page 120

photograph 1, but on photograph 1 the B is on the right. Do you see that?
A. In the center photograph the B is on the left and on the left-most photograph the B is on the right, that's correct, because there are different points of vantage when photographs were taken. So what I'm identifying is the same rafter in each of those photographs. And it's easy to see because if you look at the placement of the light fixture in -- there's two light fixtures in the left-most photograph or the photograph you've identified as Photo 1, and then there's three light fixtures in the center photograph and then there's two light fixtures. If you look at the relationship of where the light fixtures are to the match lines, that's how the rafters match up.
Q. Okay. Well --
A. It would have been nicer to have one picture of the entire at one time -- but we -- I don't have that advantage.
Q. I know. I guess I'm still thinking that on that first one that has the black hashmark, that that should be A because you see the -- next to the black hashmarks you've got the double -- or maybe three pieces of wood there and the fan light -- maybe

Page 121

you're right.
Okay. So if you would, take this blue pen and place the area of origin -- because you say that you thought it extended down below that northern knee wall that separates the master bedroom and the living/dining room area. If you would --
A. That's a little confusing because we're looking at a two-dimensional image. Remember the roof slopes downwards, so it's behind the wall and you're saying down. So it's a little different terminology.
Q. I guess I should have said north because that --
A. Yes, ma'am.
Q. -- that would have been a more descriptive word. I apologize. If you will, draw for me your area of origin that you identify as the area where the fire originated. If you will mark it with a blue pen on the first photograph.
A. And again, it's difficult to represent it on this two-dimensional image.
Q. I understand.
A. But it's behind the wall, so how do I show this as hidden without confusing you that I'm drawing over the top of the studs? And again, that's within

Page 122

18 to -- 12 to 18 inches north of the wall, and it joins up to the other rectangle.
Q. So the rest of the rectangle is accurate. You've just added that portion to the bottom or to the -- the lower side of the slope that's facing towards the north of the house?
A. The northern-most portion of that area is north of that partition wall.
Q. Okay.
A. Okay.
Q. And while you cannot specifically identify the specific point of origin for this fire, you are able to identify an area of origin of fire for the Taylor fire?
A. Correct, just like Mr. McGraw was able to.
Q. We talked a little bit earlier about certain appliances and mechanical systems that were in the home that you were able to rule out as the cause of the fire. Were you able to rule out as the cause of the fire all of the mechanical systems in the house?
A. To my recollection, yes.
Q. Were you able to rule out all the electrical appliances in the house as the cause of the fire?

Page 123

A. All of the electrical appliances were not present at the time of my evaluation. Because of their locations within the living space and since the fire originated in the attic or ceiling space, then I was able to discount them. But with regards to the dryer, while it was not causal, as I've previously testified, it was part of the path of the lightning strike.
Q. Once you determined that the chimney at the Taylor home had been directly struck by lightning, what process did you undertake in determining a path to ground for the energy from the lightning strike?
A. What process?
Q. Uh-huh. Tell me what you did.
A. Visual observation. I looked for it.
Q. And in particular in the Taylor home, tell me specifically what you did.
A. I looked for evidence of where the lightning would have moved through building materials, and what I was looking for was damage.
Q. Did you find any?
A. I did.
Q. What did you find?
A. For example, on the back of the dryer that we discussed previously, at the connection from the

Page 124

appliance duct -- the flexible metal duct behind the appliance that goes to its vent, this -- flexible transition I think is what it's called -- there was evidence of scorching. Black deposits around the -- a portion of the perimeter of where that flexible hose would have connected to the back of the dryer.
Also, with regards to behind the dryer, there is a metal insert inside of the wall that the transition hose connects to, and on the vertical surface of that insert, again there was evidence of scorching. On the flex duct itself there was evidence of scorching on the exterior of the flex duct.
So then you follow that upward vertically through the wall, terminates up in the attic and then it goes from there out through the roof. Well, as you come out through the attic at the termination near the roof, you find damage to the underlayment of the roof sheathing. And then from there we were able to move back across the remaining portions of the roof and look for other evidence of damage to the underlayment of that roof sheathing.
Now, from the dryer, we looked inside of the dryer, found evidence of a very localized scorch mark on the cover over where the electrical

Page 125

power supply cord plugged in, which then led us to go down and look at the receptacle behind the dryer, which then led us to the distribution panel outside and so on.

So basically we were looking for evidence of some type of damage to suggest this was the path that the lightning took through the home.

Q. Now, when you took the damage that you saw -- the electrical damage that you saw at the dryer and you moved up to the attic --

A. Yes, ma'am.

Q. -- I have actually marked --

A. You called it electrical damage? What I was looking at was damage in general. It was scorch marks.

Q. Scorch marks, okay. You wouldn't call that from electrical activity from the energy from the lightning strike?

A. Not at that point in time.

Q. At that point in your investigation, you wouldn't --

A. That's correct.

Q. -- have jumped to that conclusion?

A. No, ma'am.

Q. If you will look at Appendix E --

Page 126

A. Yes, ma'am.

Q. -- which we've marked as Exhibit 60.

(Exhibit 60 marked)

Q. Knowing what you know now, having completed the investigation, do you now know that the scorch marks that you found on the dryer are a result of the electrical activity from energy from a lightning strike?

A. Yes, ma'am. The energy from the lightning strike energized the electrical current flowing through those objects created those scorch marks.

Q. If you will, identify for me the photographs attached to Appendix E that represent the damage that we've discussed to the dryer and its accompanying parts.

A. It would be Exhibits E41, E42, E43, E44, E45, E46 and E47.

Q. If you will for me, on photographs E41 and E42 -- you can use that blue pen if you would like -- circle for me the localized heat affected portions of the radiant barrier that are depicted in those photographs, in 41 and 42.

A. (Witness complies.)

Q. And you're circling them all, right, every one that you see?

Page 127

A. Isn't that what you asked me?

Q. It is. Thank you.

A. This pen is not --

Q. It's not showing up?

A. For the task, it's not really accomplishing I guess what you're hoping for.

Q. Well, I'm hoping to be able to see what you've done, so let's ensure that we have accomplished that.

A. I don't know if that one's going to show up on this one either.

THE VIDEOGRAPHER: We have a Sharpie for that.

THE WITNESS: Sharpie would probably work better. Thank you, sir.

THE VIDEOGRAPHER: You're welcome.

Q. (By Ms. MacLeod) There are other areas that have not been circled that seem to be at locations where nails are. Is it your testimony today that those are not localized heat affected portions of the radiant barrier?

A. Can you point to the -- what you're -- so we're talking about the same thing, you're on photo 41?

Q. Yes, sir. There are other areas that you

Page 128

haven't circled that appear to have a nail and some damage to the radiant barrier sheathing at those locations?

A. Okay. And your question is what?

Q. Do you know -- what is the -- if they don't show localized affected portions of the radiant barrier --

A. Heat affected?

Q. -- heat affected, what are they showing?

A. Mechanical damage caused by the nail that penetrated through the oriented strand board and when it punched through, it fractured the OSB, which --

Q. So at this point you've told me about -- do you have any photographs of the path to ground from the dryer to the outside of the house on its way out of the house?

A. I shot the interior of the distribution panel. The wiring from the receptacle for the dryer was inside of the walls and inside of the ceilings, and so I went from end to end. I didn't try to shoot the entire length.

Q. Okay. So there aren't any photographs attached that represent the path of the current as it came down and through the dryer and out to ground? And it's okay. I'm just -- if there are, I want to

Page 129

know which ones they are so that we can get them identified for the record.
A. I did not endeavor to tear apart the house to trace the routing of that electrical line, so I don't have pictures showing from the receptacle to the distribution panel.
Q. Okay. Do you have any pictures of the distribution panel --
A. In the report? I don't know. I do have pictures of the distribution panel.
Q. Is it fair to say that the photographs of the distribution panel are not included in here because while they were part of the path to ground, they were not related in any way to the cause of the fire at the Taylor home?
A. They are related because they are part of that path to ground. I didn't include them, but I do have pictures of those.
Q. So while they were a part of the path to ground, they were not a cause of the fire?
A. They contributed, but they were not the cause.
Q. Once you located the -- was the dryer vent grounded?
A. Was it grounded?

Page 130

Q. Yes, sir.
A. The vent in and of itself? No.
Q. Does the NEC require it to be grounded?
A. I didn't research the NEC regarding that particular aspect.
Q. Was the dryer itself grounded?
A. It had a four-prong cord. The receptacle was grounded. So through its cord set, it would have been grounded, yes.
Q. Do you know what the NEC says in regard to grounding of dryers?
A. I don't know what the NEC says immediately, no.
Q. So we can come from the electrical receptacle, come back to the dryer, go up to the dryer vent. Walk me back from there to the chimney where it was struck by lightning and the lightning entered the premises.
A. Well, let's start at the chimney and go in from that direction.
Q. However you want to do it is fine by me.
And it would be helpful to me as we go through this if you start with and identify the photographs for the chimney that show that the lightning directly struck that location of the Taylor

Page 131

home.
A. E26, E27, E28 and E29. E28 and E29 answer the last part of that question showing the top edge of the chimney where you see a solidified metal globule where localized melting took place.
Q. If you will on -- did you say that was E28 that you were looking at?
A. Yes, ma'am.
Q. Okay.
A. E28 and 29.
Q. Okay. If you'll take the Sharpie and identify the areas that you were just describing?
A. (Witness complies.)
Q. Do you know the temperature at which stainless steel melts?
A. I don't know the temperature for stainless steel, but most steels melt in the order of 2500 degrees Fahrenheit or higher.
Q. Okay. Now, we've discovered and talked about where the lightning directly struck the Taylor home at the chimney. Tell me where it went next.
A. It progressed from the chimney toward the dryer vent.
Q. Okay. So do you know -- we know that the chimney was -- began on the exterior of the home,

Page 132

correct?
A. Correct.
Q. And then the piping had to run through the roofing system to the interior of the home, correct?
A. Okay. Just so you know, the chimney terminates exterior to the building, probably originates at the stove. But I understand for your question we're starting outside the building towards the inside of the building.
Q. Okay. And to get -- to make that transition from the outside to the inside, the chimney piping has to penetrate the roofing system, correct?
A. It does.
Q. And that would include penetrating the TechShield, correct?
A. That's correct.
Q. Did you have any opportunity to observe how the chimney penetrated the TechShield?
A. Yes.
Q. At that location was -- or describe for me what was at that location.
A. Basically there's a cutout around the chimney so the wood does not come in direct contact with the metal of the chimney. And in order to cover

Page 133

that larger cutout, they have like a boot at the roof. And so basically the chimney is connected to the boot, the boot is nailed down to the roof, so that would be how it's connected to the -- or gets into the house. The boot provides the rain barrier with the -- for the hole.
Q. The boot, is that the same thing as saying flashing, or is that different?
A. No, that's -- that's its purpose is a flashing.
Q. And how would that flashing be connected to the chimney vent piping?
A. It's in direct contact with it. Usually there may be like a little rubber gasket around it to seal that inner circumference, but normally it's in direct contact with the chimney pipe.
Q. And that boot or flashing is a piece of metal?
A. That's my recollection, yes.
Q. And then it is nailed to -- it was nailed in to the TechShield?
A. Correct.
Q. Do you know whether the nails extended in and through the aluminum sheathing on the interior?
A. They did.

Page 134

Q. Based on what you know as your electrical experience, with the metal from the piping touching the metal from the flashing and being connected with metal nails to the metal aluminum, were those -- was that considered an electrically connected area?
A. There would be -- there would be conductivity between those materials that you named.
Q. When the lightning came in and down the chimney pipe vent, because it was electrically connected to that TechShield, is it your opinion that the energy from the lightning then began a pathway and energized that TechShield and began a pathway across the room towards the dryer vent?
A. The aluminum associated with the TechShield will conduct electricity.
Q. My question is -- I'm really trying to get at trying to lay out the path to ground. So the energy from the lightning strike that directly struck the chimney, traveled down the chimney vent through the flashing, through the nails and into the aluminum on the TechShield, correct?
A. Correct.
Q. And then that energy that's transferred to the TechShield took a path across the TechShield sheets towards the dryer vent, correct?

Page 135

A. It took many paths across that sheet.
Q. In fact, it would have energized that whole roof of sheathing, correct?
A. It would energize the portions of the roof that were electrically connected.
Q. Did you have the opportunity to photograph and make note of how that path towards the dryer vent -- which direction it went?
A. There is damage to the underside of the TechShield which exhibited localized heating that followed a path basically diagonally. It would be from north -- from the southeast towards the northwest diagonally on the north slope of the roof between the chimney and the dryer vent.
Q. Do you have photographs that document that localized heat damage that you just described?
A. I do.
Q. Will you identify for me what photographs that you've attached to Appendix E that show that?
A. I stand corrected. The photo index depicts representative portions. It does not depict the entirety of the path.
Q. That was going to be my next question.
A. The representative photographs would be E37, E38, E39, E40. And of course, we've already

Page 136

talked about E41 and E42.
Q. Okay. Those were the areas near the piping for the dryer vent?
A. Correct. Or ductwork for the dryer vent. As opposed to piping, ductwork.
Q. Piping, ductwork. Okay. If you will, turn to photograph 37.
A. Yes.
Q. And identify by circling with the Sharpie the areas that you believe show localized heat damage. Do you see anywhere in that photograph any areas where there's discoloration on the aluminum?
A. I see several areas of discoloration, but what are you referring to?
Q. Well, really I was just asking you if you saw them. I see several areas but on -- both to the right and to the left of the further-most wood rafter on the left side of the picture. That's really where the TechShield is exposed around the pink venting that's there. Do you know what caused that discoloration?
MR. ELLIS: Object to form.
A. The brown?
Q. Uh-huh.
A. Which discoloration are you referring to?

Page 137

Because I mean, I --
Q. Do you see more than one discoloration?
A. I would call it a discoloration, yes.
Q. Okay. Well, show me where you see discoloration.
A. There's this brown stuff right here.
Q. Uh-huh.
A. And there is this long strip right here that is -- looks linear.
Q. In regard to the first one that you identified that is brown on the left side of the photograph closest to the wood rafter, if you will circle that with a blue pen?
A. (Witness complies.)
Q. Do you know what caused that discoloration?
A. No, ma'am, I don't.
Q. And then if you will, circle in purple the other area of discoloration that you identified. Actually, if you'll go over that in green because you can't really see the purple very well.
A. (Witness complies.)
Q. Do you know what caused the discoloration in the green circle that you've -- in the area of the green circle?
A. I do not.

Page 138

Q. When you had an opportunity and were there taking photographs and inspecting the TechShield like that seen in photograph E37, did you see any areas that appeared to be -- or to look like they had soot in them?
A. I saw areas which evidenced scorching, but I did not see evidence of sooting.
Q. What does that mean, "sooting"?
A. Well, sooting is associated with the byproducts of combustion. Basically it's the combustion gases that then deposit on cold surfaces that has carbon and other materials that would be present. The scorching would be different.
Q. How is it different?
A. Scorching would be what's akin to an iron on a shirt in that you can put heat energy into the material and cause its discoloration, but it doesn't result in fire.
Q. Do you see any scorching on photograph E37?
A. Yes, ma'am.
Q. Have you already circled the areas where you see the scorching?
A. Only in one of the areas do I see it.
Q. And what color did you mark the areas where there's scorching?

Page 139

A. Black. One area.
Q. Will you identify all the areas of scorching in black for me?
A. On that photograph?
Q. Yes.
A. It's already done.
Q. Oh, okay. So you were referring to there are other photographs that exist that would show areas of scorching?
A. I'm sorry, you've lost me.
Q. Well, I guess I was confused because I thought we were talking about this photograph and areas of scorching and I asked if you saw other areas of scorching and you said yes. But you were talking about at the Taylor home you saw other areas of scorching?
MR. ELLIS: Objection, form.
A. Again you've lost me. I'm not following. Let's start over.
Q. (By Ms. MacLeod) Okay. In regard to photograph E37 --
A. Okay.
Q. -- you have circled all the areas that you believe evidence scorching that can be seen in this photograph?

Page 140

A. Yes.
Q. While you were at the Taylor home, did you see other areas along the TechShield in between the -- where the chimney gap came into the home and where the dryer vent -- dryer ductwork came into the home, did you see other areas that evidenced scorching?
A. Yes.
Q. Do you recall how many other areas that you saw that revealed scorching?
A. Total number, no.
Q. But you have photographs that would show -- did you take a picture every time you thought you saw an area that was evidence of scorching?
A. I believe I did, yes.
Q. E37, do you know where that photograph falls in relation to the area of origin?
A. It's outside of the area of origin.
Q. Is the area of origin to the east or to the west of what is depicted in photograph E37?
A. E37 is looking towards the north. The chimney would be to the right, which would be the east. And the area of fire origin would be to the left, which would be west.
Q. Is there anything that you see -- and if

Page 141

you will, actually, let's turn to photograph 38.
A. Okay.
Q. And you may have said this to me and I apologize. But when you're -- do you see anything in photograph E38 that is evidence that there would have been a flame at any portion of the TechShield?
A. In E38?
Q. Yes, sir.
A. No, I do not.
Q. And scorching, you define that as -- you didn't define "scorching" as having any flame with it, correct?
A. Correct. It's a heat effect. You can get scorching from electrical arc.
Q. Do you think there was an electrical arc at the places that you circled on E37 in black?
A. There's a localized heat effect. I would have to look at that area in more detail to see if there's actual evidence to suggest that there was arcing there.
Q. So as you sit here today, you don't know whether there was arcing at those locations or not?
A. No, ma'am, I do not.
Q. The other photograph you identified was E40.

Page 142

A. Yes.
Q. Can you tell me what happened at these two locations?
A. In E40?
Q. Yes, sir.
A. The aluminum surrounding the nail penetration depicted on the right side of E40 as well as on the left side of E40, the aluminum was ablated away from the vicinity of that nail.
Q. What is ablation?
A. Destruction or vaporization of the aluminum.
Q. Do you understand what causes ablation?
A. Excessive heat.
Q. Were there other areas that you observed in the Taylor home that showed evidence of the aluminum ablating?
A. Were there other areas of -- yes, there were.
Q. Do you recall how many areas showed the evidence of ablation?
A. The total number? No, I don't.
Q. If you saw an area that looked like the aluminum had been ablated, did you take a photograph of it?

Page 143

A. I believe that I did, yes.
Q. And you haven't tossed any of your photographs?
A. No, ma'am.
Q. If you know, what percentage of the cases -- or your projects that you've been involved with that involve fire in radiant barrier show some evidence of ablation?
A. I don't keep that kind of statistic. I don't know.
Q. Have you ever seen it before outside the Taylor home?
A. Ablation of a radiant barrier?
Q. Yes, sir.
A. Yes, I have.
Q. And you have no idea how many times in other houses you've seen that?
A. No, ma'am. It's on -- I've seen it before, yes. The number of times, I don't know.
Q. Do you think you've seen it more than five times?
A. Yes.
Q. Do you think you see it every time you go into a home where the TechShield has been energized by lightning?

Page 144

A. Where it's still observable, yes.
Q. That sounds to me like a hundred percent of the time when you go in and you see a TechShield that's been energized, you're seeing ablation?
A. When lightning strikes a home with TechShield on it, you do get localized heat effect on various portions of the TechShield.
Q. And you're seeing ablation?
A. Yes.
Q. Do you know or understand the principles behind why it's at the area near a nail that the aluminum ablated?
A. I hadn't endeavored to analyze that at this point in time, no.
Q. If you'll look at E40, the area around the nail that's inside the area where the metal's been ablated, there appears to be a paper sheathing that remains. Is that what you're seeing?
A. Yes, ma'am.
Q. Do you understand or have any opinions as to why the metal is ablating and the paper still remains?
A. The paper didn't get ignited.
Q. Do you understand or can you explain to me why the paper wouldn't ignite yet the aluminum has

Page 145

gotten to such a temperature that it's ablated, if you know?
A. The paper would not ignite because it didn't reach its ignition temperature, or you didn't reach a temperature on it sufficient to cause discoloration. The aluminum would ablate because it was heated locally in that area.
THE VIDEOGRAPHER: I'm sorry. We have to switch out the tape. Going off the record at 1:46 p.m., ending tape 4.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 1:52 p.m., beginning tape 5.
Q. (By Ms. MacLeod) Do you typically have soot if you have scorching?
A. Scorching itself creates a darkened discoloration which could be misinterpreted as soot. It's sometimes difficult to tell the difference between the two.
Q. Why is it difficult to tell the difference between dark discoloration and soot?
A. They're both the same color.
Q. And are you able to, with a visual inspection, be able to tell the difference between a dark discoloration and soot?

Page 146

A. Normally not just by visual observation.
Q. So in order to be able to tell whether something is soot or a discoloration, does that require further testing?
A. Or at least further analysis, yes.
Q. What kind of further analysis would it require?
A. Probably swabbing for laboratory analysis of it. More detailed magnification of the surface.
Q. While you were out investigating the Taylor home, were you able to determine whether any of the localized heat damaged areas on the aluminum of the TechShield evidenced sooting?
A. I did not see any evidence of sooting.
Q. But you haven't undertaken any laboratory testing or further analysis to determine if there was, in fact, any sooting?
A. I personally have not, and to my knowledge no one has.
Q. And is it your testimony that no one can say whether it's sooting or discoloration without undertaking that testing, that further analysis and testing?
A. Visual evaluation of a photograph as the sole means of determination of whether there's soot

Page 147

present or not, it's impractical to do it that way. I don't see how you can.
Q. Is it your testimony that the only way to get soot is to have a flame?
A. In order for it to be soot, which is a product of combustion, yes.
Q. Have you asked anyone at Louisiana Pacific to -- or Mr. Ellis' firm to have the ability to undertake that further analysis and testing to determine if there is, in fact, any soot at these locations where you've seen localized heat damage?
A. Did I ask for that?
Q. Correct.
A. No.
Q. Do you know if anybody's asked for that?
A. I don't know if anybody has asked for that.
Q. I'd like to take you back to the dryer vent and ductwork for the dryer vent. And just like with the chimney, in order to get from the exterior where the vent is located into the interior of the home, you have to penetrate the TechShield, correct?
A. Yes. The termination cap for the dryer vent stack is above the roof, so there's a cover over the top of it.
Q. Is that done the same process where you cut

Page 148

a hole out of the TechShield so that the wood is not touching the ductwork?
A. On the dryer vent it would not be necessary that it be so large as to not touch it, but there would be a hole cut out for the dryer duct to go through.
Q. Is that just because of the difference because the chimney is going to heat and it's going to have heat source blowing through it whereas -- I mean, what's the difference -- why do you need a larger hole with a chimney than you do with the dryer vent?
A. Operating temperature.
Q. Would the -- there also be a boot or a flashing at the location on the dryer ductwork where it comes and penetrates the TechShield?
A. Yes.
Q. And is it -- how is it connected to the ductwork?
A. I don't remember how it's connected to the ductwork. Normally it's the piping -- there's a transition that goes between the termination cap and the ductwork.
Q. And that flashing is going to be nailed to the TechShield to secure it in place?

Page 149

A. Correct.
Q. And if you'll look at photograph 41.
A. Yes.
Q. Is what we're seeing with those nails coming through, is that where the flashing was connected to the TechShield with nails?
A. Which nails are you referring to? There's multiple nails shown in that photograph.
Q. Are we at least seeing some that would have been responsible for securing the flashing to the TechShield?
A. Yes.
Q. Is it your opinion that given that the ductwork is metal, the nails are metal, the aluminum in the TechShield is metal, that the TechShield was electrically connected to the metal ductwork of the dryer vent?
A. Yes.
Q. Do you know what bonding and grounding are?
A. I do.
Q. Can you define them for me?
A. Grounding is where you actually make a physical connection to earth ground. The bonding is where you connect various objects together so that there's not a difference in potential between the

Page 150

objects. They're electrically at the same potential because they're bonded together.
Q. Do you know if the roof structure in the Taylor home as it existed immediately prior to the fire on August 29, 2011 was bonded?
A. To what? What are you referring to to what it was bonded? We've established that it's been bonded to two different things.
Q. Okay. So are you telling me that it is electrically -- the TechShield is electrically bonding the chimney and the dryer ductwork?
A. The chimney is connected to the TechShield by its installation. The dryer vent is connected to the TechShield through its installation.
Q. Do you know if the roof structure of the Taylor home as it existed immediately prior to the fire on August 29, 2011 was grounded?
A. I do not.
Q. If the roof had been grounded, would the energy from the lightning strike have sought to use that as a path to ground?
A. It could have.
Q. Do you think that's what, in fact, happened in this case?
A. What?

Page 151

Q. That the --
A. Okay. You've lost me. Are we talking hypothetical?
Q. No. I'm asking if you think that's what happened in this particular case, that the lightning used the chimney, the TechShield and the dryer vent as its path to ground?
A. As one of its paths, yes.
Q. What other paths do you think it used?
A. There are numerous paths it could have used, but the primary path would have been the one you just described.
Q. What other paths could it have used?
A. The chimney, TechShield, nails, electrical conductors.
Q. Are you aware of any evidence that the -- there was a path to ground using any of the electrical conductors?
A. There is damage on the grounding conductor for a 14-3 circuit for the fire alarm panel.
Q. Have you looked at those wires -- did you look at those wires the day that they were collected at the Taylor home?
A. I did briefly, yes.
Q. Did you look at those wires while they were

Page 152

still up in the ceiling before they were collected?
A. I did.
Q. Have you looked at those wires since the date that they were collected?
A. I have not.
Q. Have you looked at any of the SEM, EDX or CT scan photographs that were taken at the Goodson Engineering facility on September 27, 2012?
A. I've seen the EDX reports.
Q. And you reviewed those reports?
A. I have.
Q. Why did you review those reports?
A. With regards to the data that they had in there.
Q. What did you learn from reviewing those reports?
A. That from the EDX -- SEM/EDX analysis, that you're talking about copper conductors. All of the surfaces that they identified for inquiry were copper.
Q. And that was on the EDX?
A. Yes, the -- yes, the reports show that.
Q. Does it have any significance to you that the electrical activity that was located at the scene and later identified during the testing at Goodson

Page 153

Engineering, that all the electrical activity was on the ground wire?
A. Does it have any --
Q. Significance to you in your electrical experience?
A. Yes.
Q. Tell me about that -- what significance it has.
A. Basically that that grounding conductor became energized and basically there was a gap at which arcing jumped from that wire to another object.
Q. Why do you say that the arcing came from the ground wire to another object?
A. Which would be at the higher potential. The ground system is energized by the lightning strike. The ground would be at a higher potential than the object adjacent to it. So if there's a large enough difference in potential, it will jump -- cross that gap and go to that lower potential object.
Q. Did you see any evidence that -- well, you've already testified today that you know the TechShield was energized by lightning?
A. Yes.
Q. Knowing that the TechShield was energized and has a very high potential because it's

Page 154

immediately connected to the chimney that was directly struck by the lightning, does it make sense to you that that ground wire would have had -- and I may not know how to say this. It would have a higher resistance such that the energy would have arced from the copper wire somewhere else, or does it make sense that because that TechShield is energized, that the energy would have arced from the TechShield to the ground wire and attempt to find a path to ground?
A. The established -- one of the primary paths to ground has already been going through the dryer vent, through the dryer to the electrical system. Alternate paths would have also gone from the energized TechShield through the nails down towards other materials which are at a different potential. That wire would be the next available potential as that conductive path is made through the nails towards that electrical conductor.
Q. So it makes sense to you electrically that the energy traveling to the TechShield could have arced from the TechShield to the copper grounding wire in that 14-3 wire seeking a path to ground?
MR. ELLIS: Object to form.
A. No, it doesn't make sense to me in that

Page 155

regard.
Q. (By Ms. MacLeod) Why not?
A. The distances involved, the primary path has already been established, there are no other instances -- if that were occurring, then you would expect that to happen on other areas of the conductor, and it's not.
Q. Would that happen on other areas of the conductor once it became energized with an arc from the TechShield and basically creating a greater consistency between what's running through the ground wire and what's running through the TechShield?
MR. ELLIS: Objection.
A. I don't understand your question.
Q. (By Ms. MacLeod) Based on what you understand and know about how electricity and electrical currents run, are you telling me today that it is not possible that there was an electrical arc from the TechShield to that copper ground conductor in the 14-3 wire?
A. I'm not telling you it's not possible.
Q. Are you telling me that it is not probable?
A. Based upon the information I have, it is not probable.
Q. Help me understand that, why you think it's

Page 156

not probable.
A. Because of other evidentiary items that I'm seeing that lead me to a different conclusion.
Q. What are those other evidentiary items that lead you to a different conclusion?
A. The proximity in the area of origin of all of the nails holding the building materials together coming down from the roofing system to the top of that partition wall immediately in the vicinity of where that electrical conductors -- or those electrical conductors pass by the corner of that framing member. The spatial relationship is there.
Q. Do you know or recall from your visit to the site where the areas of electrical activity were in relation to the area of origin?
A. The two identified areas were up slope. One was near the peak and the other, you would actually come down slope more towards that north partition wall but not there.
Q. Okay. And did that wire, the 14-3 wire, continue to run north down the slope through that area of origin and back towards the north end to the master bedroom?
A. If it's the conductor I'm thinking of, it ran down the slope along the rafter and turned

Page 157

immediately left over the top of that wall.
Q. Headed towards the --
A. East.
Q. -- electrical -- headed east back towards --
A. No.
Q. No.
A. Yeah, east.
Q. Headed east?
A. Headed east.
Q. Do you have any photographs that depict the direction that the fire alarm circuitry took on the northern side of the wall that separates the master bedroom and the living room area?
A. Yeah.
Q. Which photograph is that?
A. 15.
Q. And if you would circle with a black Sharpie the wire that you are talking about that is the 14-3 wire that was part of the alarm circuitry.
A. (Witness complies.)
Q. You mentioned that when you looked at the EDX, that the -- it showed that the wire was copper. Is there -- and I don't mean to misquote your testimony. Whatever you said is what you said. But

Page 158

is there -- my question to you is: Is there any significance such that you felt it necessary to tell me that what was found was copper wire?
A. That's what the results were.
Q. Was there any significance to that finding?
A. Yes, it's copper.
Q. What does it mean to you that it's copper? It may not have any meaning. I just want to understand.
A. There's no other material. It's not alloying that's creating this. And alloying is where you would have a different metal coming into contact with the copper and changing the physical properties of the copper and forming an alloy, and that melts at a lower temperature. It's copper.
Q. Do you know whether when there's ablation, is that caused by an arc?
A. My understanding of ablation is it is a result of the material's reaction to the intense heating. One type of intense heating can be electrical arcing.
Q. Do you know if the only way that you can have ablation is if you have an electrical arc of sufficient time and energy?
A. I don't know if that's the only way, but it

Page 159

is a reasonable way, yes.
Q. Is it really just that you don't know whether there could be more than one way, or are you telling me that there is potentially more than one way that an arc could create -- and have the result of ablation?
A. There may be alternate causes for ablation, but my understanding of ablation is it is localized intense heating.
Q. That 14-3 wire that prior to the fire would have been encased in insulation, correct?
A. Correct. Or it should have been, yes.
Q. Does the fact that it was encased in insulation have any significance to you in regard to arcing?
A. That the electrical energy would have to be sufficient -- either the insulation material would have to be physically damaged or the electrical phenomena would have to be much greater than the insulating capacity of that insulation.
Q. Do you know what the typical insulating capacity is for electrical wire these days?
A. Not off the top of my head, no.
Q. I understand that it's your opinion that you were unable to determine the first material

Page 160

ignited, correct?
A. Correct. Based upon the totality of the destruction caused by the fire and the demolition during extinguishment efforts, salvage operations and so on, I can't tell you the point of origin. Therefore, I cannot specifically identify the first material ignited.
Q. What happens in a scenario where you have a fire and the first material ignited is lost due to combustion? Are there any limits under NFPA 921 in your being able to determine a cause of the fire?
A. You would try to, through the scientific method, evaluate the materials that are there and the potential ignition sources that are there and then see if there is a property or whatever to determine if you can decide if there was an ignition source or the first material ignited and what that would be.
Q. Are those the steps that you undertook in your investigation in the Taylor case?
A. In some respects, yes. Up to the point where once you have a lightning strike, it is just a matter of it is a phenomenon such that it is going to give you the potential for fire.
Q. It gives you the potential for fire but not necessarily fire, correct?

Page 161

A. Correct. A lightning can strike a house. That house could catch on fire. That house may not catch on fire. That house may have radiant barrier. That house may not have radiant barrier. Lightning striking the house does not -- gives you the good probability for a fire because of its huge potential, but it's not -- there are instances where you do not get fire.
Q. Doesn't the probability of whether you have a fire created from that potential from the lightning strike depend upon the building materials that are energized by the lightning?
A. No, ma'am. It more depends upon the type of lightning that actually strikes your home.
Q. Tell me about that.
A. Okay. There's a hot lightning versus a cold lightning. The hot lightning, which is indicated to occur 25 to 50 percent of the time, is a type of lightning where the flow of current in the lightning strike is continuous. There's no pulsation associated with it or flickering, and it occurs for a longer duration. That hot lightning is the one that is found more prone to cause a fire.
Q. And then the other type of lightning --
A. Cold lightning.

Page 162

Q. -- cold lightning, tell me about that.
A. Cold lightning is basically typical lightning wherein once the lightning path is established, you get a return stroke and then you could get many return strokes thereafter, but it has a flickering or it's not a continuous stream and it's of a much shorter duration.
Q. Do you know whether the lightning that struck the Taylor house was hot or cold lightning?
A. I do not know.
Q. Is that something that you need to be able to determine in reaching a cause of the fire in this instance?
A. The circumstantial evidence indicates that the lightning strike was the cause of the fire.
Q. Yeah, but my question was: Is determining between whether it's hot lightning or cold lightning necessary for you to be able to determine the cause of the fire at the Taylor home?
A. No, ma'am. Whichever lightning strike it was, it was sufficient to cause the fire at the Taylor home.
Q. Do you know the difference between positive lightning strikes and negative lightning strikes?
A. Yes, ma'am.

Page 163

Q. How about walking me through what a positive lightning strike is?
A. Positive lightning strike is much -- first off, much more rare than negative lightning. A positive lightning originates in the upper portion of the thunderstorm, so, therefore, it has to travel a much larger distance than your typical lightning strikes, which originate in the negative portion of the thundercloud. That -- because it originates higher up and has a much higher potential, by the time it reaches the ground, it can also reach further distances away from the cloud. And so its intensity is much greater at the time that it finally makes contact with the earth.
Q. Did you check the -- you obtained the Vaisala STRIKEnet report, correct?
A. I did.
Q. Did you look through there to determine whether there were any positive strikes the day at or near or around the time of the Taylor fire?
A. At or near or about the time, that's the difficulty with this particular case. We have no definitive time frame.
Q. For when the fire started?
A. For when the fire started. From when the

Page 164

impact actually occurred, we don't have a definitive timeline. So it's exceptionally difficult to look at the lightning data and say, Oh, this is the lightning strike that was more probable to have caused this.
So I don't recall seeing a positive stroke, but I would have to look in more detail at the Vaisala report to specifically answer that question.
Q. Does it matter to your determination of the cause of the fire in the Taylor case whether it was a positive or a negative strike?
A. No, ma'am.
Q. Why is that?
A. Because positive versus negative is not synonymous with hot versus cold. A negative stroke can be a hot strike and it's all associated with duration of the lightning stroke itself.
Q. But my question was: Is determining cause in the Taylor house -- in the Taylor fire, does it matter whether it was a positive or a negative strike?
A. It does not matter. Whichever strike it was caused this fire.
Q. Right. So the same reason it doesn't matter whether you need to -- why you don't need to

Page 165

know whether it was hot or cold because whatever it was, it was sufficient enough to cause the fire in the Taylor home?
A. Correct. The lightning strike was sufficient to cause a fire in the Taylor home.
Q. Do you know how thick the aluminum sheathing on the TechShield is?
A. Off the top of my head, I have not measured it. My understanding, I think from the McDowell Owens measurement of it, is .01 millimeters.
Q. Do you have any reason to dispute that that's the thickness of the aluminum?
A. No, ma'am, I don't.
Q. Does that seem like a reasonable measurement? You've seen it. Does it seem like a reasonable measurement of the aluminum?
MR. ELLIS: Objection.
A. Again, I didn't measure it. I've got no data to tell me what the actual measurement is. So sitting here today, I can't refute that measurement.
Q. (By Ms. MacLeod) In determining how the TechShield aluminum is going to react to being energized by lightning, does it matter to you how thick the aluminum is?
A. You mean a lightning strike strikes this

Page 166

material, does it matter to me how thick the aluminum is?
Q. Correct.
A. No, ma'am. The lightning strike is going to either cause a fire or it's not going to cause a fire.
Q. It doesn't matter the characteristics of the building material that it's interacting with?
A. The thickness of the aluminum or the characteristics of the building material? No. The lightning is a phenomenon such that the properties of the building material are overwhelmed by the event.
Q. Have you ever done an origin and cause investigation in which CSST was involved?
A. Yes.
Q. Do you know what CSST is?
A. Corrugated stainless steel tubing that's used for natural gas piping.
Q. Have you investigated more than one project involving CSST?
A. I believe so, yes.
Q. How long ago was that?
A. Five, six years ago. Excuse me. One of them involving CSST happened last year.
Q. Last year?

Page 167

A. Uh-huh.
Q. And you were called in to do a cause -- an origin and cause investigation?
A. I was consulting in that capacity, yes.
Q. Who retained you?
A. On the case about five years ago, an attorney representing the homeowner on the case last year, it was a case that LP and the corrugated stainless steel tubing manufacturer were put on notice.
Q. So you're there retained by LP?
A. In that particular case, yes.
Q. And that particular case was the CSST -- was there a fire at the home?
A. There was.
Q. Was the CSST perforated? Did you find a hole in it?
A. No.
Q. Where was the CSST located in that house?
A. Majority in the attic. Of course, the terminations went down to the various appliances.
Q. Was McDowell Owens involved in that case?
A. They were.
Q. Has that case resolved?
A. You're calling it a case. Is that project

Page 168

resolved?
Q. Project, yes, sorry.
A. Again, I don't know. My understanding was when we were leaving the scene, we were told by McDowell Owens representatives that we would not be hearing from them again. But to tell you whether or not the project's over, only time will tell with that one.
Q. Do you recall who the representative from McDowell Owens was?
A. Ron Simmons and Nestor Camara.
Q. We talked earlier about some testing that LP has done, the ASTM testing and the Intertek testing.
A. Okay.
Q. Have you personally undertaken any testing of the radiant barrier product?
A. No, ma'am.
Q. Have you ever been asked to do any testing of the radiant barrier product?
A. No, ma'am.
Q. Have you specifically been told not to undertake any testing of the TechShield radiant barrier product?
A. No, ma'am.

Page 169

Q. Have you seen any of the testing where electrical energy was applied to TechShield that was conducted by McDowell Owens?
A. Have I seen any of the testing? No, I didn't see it firsthand. I've seen video documentation and I've seen photographs.
Q. Do you know whether Mark Goodson has undertaken any testing where electrical energy is applied to the TechShield?
A. I don't know. Ask Mr. Goodson.
Q. Okay. I just wasn't sure if he'd shared it with you. But he hadn't shared anything with you. You're not aware of any testing?
A. No, ma'am, I'm not.
Q. In the testing that you saw that was undertaken by McDowell Owens, did you have any criticisms of that testing?
A. Yes.
Q. Will you tell me what they are?
A. That it doesn't represent a lightning strike.
Q. In fact, it represents energy that's greatly less than a lightning strike, correct?
A. Yes.
Q. And yet still what you're seeing is that

Page 170

product being damaged and creating flame, correct?
A. At very, very low voltages at long durations, that is what his testing represents. But that's not what occurs during a lightning strike.
Q. Have you seen any of his testing where the energy is applied in .2 microseconds?
A. I have not seen that testing.
Q. If it was possible to ignite the TechShield by putting a current through it at that quick impulse rate, would that change your mind in regard to whether energy from a lightning strike could ignite TechShield?
MR. ELLIS: Objection, form.
A. Would it change my opinion? No.
Q. (By Ms. MacLeod) Is it your opinion that lightning cannot ignite the TechShield radiant barrier?
A. That is not my opinion.
Q. Is it your opinion that lightning would be capable of igniting the TechShield radiant barrier product?
A. Lightning can ignite TechShield.
Q. I understand from looking at your report on page 2 -- just for the record, that's Exhibit 50 -- that you have stated that it's your opinion that the

Page 171

fire at the Taylor home was most probably the result of the ignition of building materials within the confines of the attic/ceiling space by an act of nature, a lightning strike, correct?
A. That's on page 2?
Q. That's on page 1.
A. Yes, ma'am, it is.
Q. And that on page 2 that you have identified the building materials as asphalt-impregnated fiberglass shingles, i.e., composition, mechanically fastened with nails to the LP TechShield OSB panels, which were secured to wood rafters with nails. You've also identified gypsum board and fiberglass batten insulation in this area as well as plastic baffles, which were Polyvent, to facilitate ventilation of ceiling space, correct? Those are the building materials that you believe were in the area of origin at the time of fire?
A. And additionally wood header and wood studs.
Is this a good point for a break?
Q. If you need one.
A. Yeah. The sun is killing me.
Q. Yeah, sure. Take a break.
THE VIDEOGRAPHER: Going off the

Page 172

record at 2:36 p.m., ending tape 5.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 2:50 p.m., beginning tape 6.
Q. (By Ms. MacLeod) Mr. Scardino, do you know what flashover is?
A. I do.
Q. What is it?
A. It's a stage of the fire development in which the -- as the fire develops, it builds a gas layer of combustion products at the top of the room. When the radiant heat from that gas layer is impinging upon every horizontal surface below it and basically simultaneously, it reaches the ignition temperature of all those components in the room, then the room is said to flash over because that all breaks into fire all at the same time.
Q. Are you aware of whether in the lightning field there's a term called "flashover"?
A. I'm not familiar with a term of "flashover" in the lightning field.
Q. Before we stopped we were talking about the materials -- building materials in the area of origin of the Taylor fire. Do you know whether the wood rafters that you mentioned as being included in that

Page 173

area were treated in any way?
A. My understanding is no, they were not treated. They appeared to be standard mill-cut kiln-dried pine.
Q. Would it make any difference as to whether they were treated or not in regard to sustaining when attacked by energy from a lightning strike?
A. We're just now comparing treated versus untreated lumber? Treated lumber has a higher moisture content, so the treated lumber would be more conductive.
Q. What about the OSB? Do you know if it is considered a treated wood?
A. To my knowledge, no.
Q. Why do you say that?
A. Basically my understanding, it's an oriented strand board. Now it uses an exterior grade glue, but to my knowledge it's not treated to -- it's not treated.
Q. Okay. Do you know whether a piece of OSB board is more conductive than an untreated piece of wood rafter?
And specifically really what I want to know is whether the OSB board that was part of the TechShield would have been more conductive than the

Page 174

wood rafters that were installed in the Taylor home?
A. I don't know.
Q. Do you know the age of the wood rafters that were installed in the Taylor home at the time of the fire?
A. I believe the plans indicated 2006. So when was the fire, 2011? Four or five years old.
Q. Do you know the age of the TechShield that was installed in the Taylor home?
A. My apologies. Hold on a second. The house was constructed in 2009. So a couple of years old.
Q. And you're basing that on the fact that that wood would be the same age as the age of the house when it was constructed?
A. Yes.
Q. You didn't do anything to measure the age of the wood rafters in the Taylor home?
A. No.
Q. Do you know the age of the TechShield that was installed in the Taylor home?
A. I believe that information could be found, but I don't know it off the top of my head.
Q. Do you think you've had that information at one point?
A. I believe it can be gleaned from a

Page 175

photograph of one of the tags on the TechShield.
Q. The date that it was manufactured is actually printed on the TechShield?
A. I don't know how to interpret the label, but I've got pictures of the label, and someone with knowledge to decipher what the various numbers mean on it should be able to tell you.
Q. Okay. Do you know which ignites more readily, paper or wood rafters, untreated wood rafters?
A. Comparing paper to wood. And you want to know which one ignites more readily? Paper.
Q. What about comparing paper to the OSB strand board used in TechShield?
A. Comparing it to the wood in the TechShield? Paper.
Q. Which ignites more readily, the styrofoam vents that were installed in the Taylor home or untreated wood members?
A. I don't know. I don't know the combustion characteristics of the vent in the Taylor home.
Q. Was that an important piece of information to know when making a determination as to the building materials ignited at the Taylor home?
A. The Polyvent shield would not be adversely

Page 176

affected by the lightning strike because it is nonconductive. So with regards to how it becomes ignited, while it would contribute to the fuel load, it would not be the first fuel that gets ignited.
Q. Do you know which ignites more readily, the aluminum foil that's on the TechShield or untreated wood rafters?
A. I don't know.
Q. If I light a match and hold it up against an untreated piece of wood and at the same time light a match and hold it up to a piece of paper, which is going to ignite first?
A. Paper.
Q. If I light a match and put it up against a piece of untreated wood rafter and at the same time light a match and put it up against the styrofoam vent that was installed in the Taylor home, which is going to ignite first?
A. The vent.
Q. If I light a match and I put it up against a piece of untreated rafter and at the same time I light a match and put it up against the aluminum sheathing that is applied to the tech -- that's part of the TechShield product, which is going to ignite first?

Page 177

A. We're doing a rafter versus the TechShield with a match?
Q. Not the TechShield, just the aluminum sheathing that's adhered to the OSB board that makes up a portion of the TechShield.
A. I don't know. I haven't done that type of testing before.
Q. Does wood conduct electricity?
A. It can.
Q. Is it your opinion that wood, like an untreated wood rafter, can burn if it gets struck by lightning?
A. Yes.
Q. Does it get -- does it catch fire in every instance that something like that -- the untreated wood rafter is energized by lightning?
A. As we've discussed earlier, the potential is there for it to catch on fire depending upon the circumstances. Whether or not it does, again, the lightning provides the energy and whether or not it ignites, it's dependent upon the conditions.
Q. Like what conditions would it be dependent upon?
A. The method by which it's installed, the spatial relationship surrounding that wood, whether

Page 178

or not you have a location where you can get the ignition, glowing combustion, flaming combustion, fire.
Q. Would the age of the wood matter?
A. It has a bearing on it.
Q. Why?
A. It has to do with moisture content. The older the piece of wood, they use different processes to treat it previously, meaning how it was kiln dried. Contaminants on the surfaces, those types of things.
Q. Does the type of wood matter?
A. Denser woods conduct better than softer woods.
Q. Do you know whether treated wood is more or less likely to catch fire from an electrical arc than untreated wood?
A. While the treated wood has better conductive characteristics, it's also got a higher moisture content, and that moisture has to be driven off before you can get it to ignite. So I would think that the treated lumber may be more difficult to actually ignite.
Q. Have you actually done any testing to make that determination, or is that you're just deducing

Page 179

based on your experience and knowledge and what you know from your years of experience?
A. Correct.
Q. The latter?
A. Correct, the latter.
Q. Is it your understanding that a basic principle of electricity is that energy is going to choose the path of least resistance?
A. In electricity, the current does flow along the path of least resistance. It doesn't mean that you don't have flow in more high resistive directions. It just means the bulk of the current is going to choose that least resistant path.
Q. So if energy is following this well-known principle of first choosing the path of least resistance, is it going to follow a metal before it follows wood?
A. Metal being more conductive, yes.
Q. If you would turn back to Exhibit 50 -- I guess you're still there. And turn to page 1. Under "Assignment."
A. Yes.
Q. It says that, "ESI personnel visited the incident location." That was you, right?
A. That was me.

Page 180

Q. Did anybody else from ESI attend that inspection?
A. No.
Q. Nobody else has visited the location besides you --
A. That's correct.
Q. -- from ESI?
A. For ESI.
Q. At the time that Mr. Murphy called you and asked you to come do an investigation out at the Taylor home, were you told at that time that you would be discussing the nature and characteristics of lightning or composition and characteristic of the materials in the Taylor home as part of your expert opinion?
A. No, ma'am.
Q. Do you know when those two items became a part of your assignment for this project?
A. What? Determining the origin and cause of the fire?
Q. No, discussing the nature and characteristics of lightning and the composition and characteristics of the building materials.
A. Well, the aspect associated with the lightning is once the cause determination indicated

Page 181

it was a lightning strike, then we would be looking at the characteristics of lightning and how it would cause building materials to catch on fire.
Q. Did you make that determination that you needed to look at that, or did someone else ask you to look into those issues?
A. With regards to the lightning?
Q. Uh-huh.
A. No, ma'am. I was the one that made the determination about the lightning event.
Q. I'm talking about inclusion of all of the lightning language that's located here in the September 28, 2012 report.
A. Like which language are you referring to?
Q. There's a whole section on lightning, is there not?
A. That's my input.
Q. And that was your decision to include that information in this report?
A. Absolutely.
Q. Are you familiar with the fire tetrahedron?
A. I am.
Q. Can you tell me what that is?
A. Basically it starts with the premise of the fire triangle, which is you have to have adequate

Page 182

heat, fuel source and oxidizer. The oxidizing agent is atmospheric air. The fuel is the first material ignited. The heat source has to be of adequate intensity and duration. The fourth aspect which creates the fire tetrahedron is a continuous chemical reaction, which means it's sustaining and propagating.
Q. If any one of these four pieces is taken away, what happens to a fire?
A. It either doesn't -- it is not a fire or it does not develop into a fire.
Q. Did you see any evidence in the Taylor home of areas where some of the items in the fire tetrahedron were present but not all four were present?
A. In numerous locations.
Q. Numerous?
A. Yes.
Q. Are those the areas that we talked about where the localized heat damage --
A. Correct. Those areas where the localized heat damage was indicated there was heat, there was fuel present, there was air present but we never had a continuous chemical reaction, so the fire was not self-sustained and there was no fire in those areas.

Page 183

Q. And in each case it's your opinion that the piece that was missing was the continuous chemical reaction?
A. The fuel's there. It's either going to be adequate --
Q. What is the fuel in that scenario?
A. The construction products.
Q. Which were?
A. The woods, the TechShield, the Polyvent. Those combustibles are there. Okay? So you have air. So those two things are there. So now you either have an absence of adequate heat -- again, intensity and duration -- or you don't have the continuous reaction.
Q. Help me understand a little bit because I just really don't understand what the continuous chemical reaction means. Very briefly, help me understand that.
A. I mean, basically a lot of it has to do with heat transfer. If you're conducting heat or dissipating heat faster than you're generating heat, you can't have a continuous reaction. So basically the chemical reaction has to be continuous in order for there to be fire. So if you do not maintain that, it goes out, self extinguished, no fire.

Page 184

Q. If you were to take one of the legs away like the oxygen -- or I think you called it air?
A. Okay. Oxidizer, air.
Q. Yeah. That fire would also go out, correct?
A. Correct. You can smother a fire and you can put it out.
Q. If the fuel source burned away, that too -- if that fuel source was gone, that too could be a reason that the fire goes out?
A. If the fuel source burns away. So you've totally consumed the fuel?
Q. Uh-huh.
A. I'm not sure I understand your question.
Q. I was just asking: If you remove the fuel source from this fire tetrahedron equation, that, too, is a way to either not have a fire or have the fire go out?
A. It's -- the fuel is probably the last thing that you have control over. And normally you don't have a lot of control over ventilation. So the things that you control are the ignition source. And so if you prohibit the ignition source, which has to be of adequate heat and adequate duration to -- from the picture, then you basically don't get the fire.

Page 185

But the fuels are present. Now, if you burn them completely away, now you're talking total destruction and, of course, it's going to extinguish once you exhaust the fuel.
Q. What if you take the heat portion of it away?
A. Again, that's the ignition source, so yes, you would not get a fire.
Q. Do you know how fast lightning was moving -- the energy from the lightning strike was moving across the TechShield when it energized it in the Taylor home?
A. I don't know what that measurement would be.
Q. If you'll look at page 3 for me.
A. Yes.
Q. Under "Observations," in that third paragraph, the first sentence, "Lightning was confirmed as the most probable cause for the fire based upon available STRIKEnet data, see attached Appendix I, and physical evidence at the site which exhibited localized heat (i.e., the chimney, the roof decking, the dryer transition vent, the dryer and the building's electrical system)."
When you're talking about the roof

Page 186

decking, that is the TechShield?
A. Yes.
Q. All right. If you'll turn to page 4. Under "Discussion" you have two paragraphs in there about the LP OSB oriented strand board, correct?
A. Yes.
Q. Where did you get the information that you've included in this report about the OSB?
A. I believe it was online in online literature that you can download.
Q. From LP's website?
A. That's correct.
Q. Did you review their MSDS sheet prior to reading this report?
A. I don't know if I reviewed it prior to preparing the report, but I do have it listed. So yes.
Q. I was going to say: If it's in your appendices, is that --
A. I didn't see it right away --
Q. Yeah, yeah. I was going to say does that give you any clue as to --
A. Yes.
Q. Does that change anything in regard to where you got this information, or do you still think

Page 187

you got this information off the LP -- Louisiana Pacific website?
A. I think I got it off of the website is my recollection.
Q. If you'll turn to that last paragraph on page 4, you're talking about the -- in that paragraph the aluminum sheathing that is attached to the OSB sheathing, correct?
A. Correct.
Q. And do you recall where you got the information in regard to the aluminum laminate that is on the TechShield product?
A. The durable sheet of aluminum is comprised of a polyethylene laminated paper foil which is adhered to the ethylene vinyl acetate copolymer, is that what you're asking about?
Q. Yes. I'm just -- that information, I'm asking you where you got that information.
A. I believe those materials are in part from the Material Safety Data Sheet and then from information about the product itself.
Q. You list the aluminum laminate as a durable sheet. What do you base that statement on that it's a durable sheet of aluminum?
A. That's based upon the manufacturer's

Page 188

information.
Q. You haven't done any testing to determine how durable it is?
A. No, ma'am.
Q. Do you know in that context what "durable" means?
A. I do not know.
Q. Have you had any discussions with Louisiana Pacific about the vapor vents that they put onto this aluminum laminate?
A. The perforations?
Q. Uh-huh. They call it -- I mean, I'm looking at your language and it says, "After the foil lamination process takes place, the panel is incised, resulting in small holes called vapor vents"?
A. Correct. That's their terminology.
Q. Did you ever have any discussion with Louisiana Pacific as to why they include the vapor vents in their products?
A. Moisture.
Q. Is that something you actually had a conversation with someone at Louisiana Pacific with?
A. That conversation has come up, yes.
Q. Why were you having that conversation?
A. We were talking about the product.

Page 189

Q. In what regard?
A. He was telling me about how the product was made and why it's made in a certain way.
Q. Do you know if the other folks that are -- other manufacturers that are out there making a product similar to TechShield are using things like the vapor vents in their product, or is that unique to Louisiana Pacific?
A. I can't answer that. I don't know. I haven't looked at other people's products.
Q. You've included in here that -- in the last sentence that the LP TechShield conforms to ASTM E84-11A, test for surface burning characteristics of building materials. This is the testing that we talked about earlier. Do you know when they did that testing?
A. I don't remember.
Q. Do you know whether it was before or after the Taylor fire?
A. I don't know.
Q. If you'll look on the top of page 5 after the word "materials" at the very top, there's UL 723, UBC 8-1 and NFPA 255. Are those standards that apply to the Louisiana Pacific TechShield?
A. Are those?

Page 190

Q. Standards.
A. Yes, ma'am. That's how I understand them. UL, which is Underwriters Laboratory. UBC is usually the Uniform Building Code, and the NFPA is the National Fire Protection Association.
Q. Do you know what NFPA 755 -- excuse me, 255 says?
A. Off the top of my head, no.
Q. Do you know whether TechShield has undergone any testing by Underwriters Laboratories?
A. Basically the way I understand this sentence is that ASTM E48-11A is also UL 723, UBC 8-1 and NFPA 255. They're the same document.
Q. In the next paragraph you talk about the scientifically supported benefits of radiant barriers. Where did you get that information?
A. The -- I want to say it was one of the references. I want to say it was No. 12.
Q. That's not something -- I mean, that's some information that you pulled from another source and put in your report?
A. Correct. That's the normal thing that people in fire and explosion analysis do.
Q. I just want to make sure that it wasn't something that -- tests and things that you've

Page 191

scientifically proved. It's -- it's included in your report because you found it and thought it was important to your report, correct?
A. Correct.
Q. In the Taylor fire we didn't just have lightning, did we? We also had lightning -- energy from a lightning strike that interacted with man-made products in the Taylor home, the building materials, correct?
A. The lightning struck the structure and it interacted with the structure, yes.
Q. And the building materials in that structure?
A. Correct.
Q. Do you know how frequently lightning occurs in Louisburg, North Carolina?
A. In the city of Louisburg, North Carolina? No, ma'am. Some of the references I have give me down to North Carolina but not to Louisburg, North Carolina.
Q. And not to a particular county in North Carolina?
A. That data may be available, but I didn't have access to it.
Q. And what do you mean, "didn't have access

Page 192

to it"?
A. I wasn't -- I didn't find it. So what I found was with regards to the country and with regards to the state but not with regard to specific counties or to specific cities.
Q. Is it a fair statement to say that lightning is prevalent throughout the United States?
A. Yes.
Q. Is it a fair statement to say that in -- it's even more prevalent in the southern states of the United States?
A. Yes.
Q. In the sixth paragraph down under "Lightning" on page 5, you've included information about the electrical current that a negative lightning strike carries?
A. Yes.
Q. Can you explain to me what it is this is telling us?
A. Basically negative lightning carries current, electrical current, between 30,000 to 100,000 amps at a million volts of electricity and transfers 15 coulombs of electric charge at 500 megajoules. The coulombs is basically a measure of the electrons transferred, and the megajoules is

Page 193

the total amount of energy. Mega is 10 to the 6, so millions.
Q. And why did you include this in your report?
A. Basically because the amount of current and voltage associated with a lightning strike is so huge compared to the normal electric systems that we interface with on a daily basis.
Q. What are the normal electrical systems' amperage?
A. Inside of your house -- now, when you say "amperage," the inside of your house, the receptacle in the wall is on a 120-volt circuit, which could be anywhere from 15 to 20 amps. It depends upon the circuit breaker rating that's protecting it. Light fixtures can be 15 amps. So what you're seeing inside of your home is much smaller. You're talking 120 volts versus a million volts. The amperage is going to be much smaller.
Basically you determine the amount of amperage if you take 120 volts and you have a 1200-watt heater, then you can see how many amps it's actually drawing by dividing the power by the voltage and you end up with the amperage.
Q. Would you agree with the statement that if

Page 194

you can ignite something with 12 volts, that you can ignite something with a million volts?
A. No, ma'am. I don't agree with that.
Q. Why do you not agree with that?
A. Because what you've left out of that equation is the duration. Okay. If you leave a million volts on there forever and you leave 12 volts on there forever, then yes, both of them will ignite.
Q. Let's assume that all things equal except for the voltage that's applied. So duration is the same, material is the same. If the material would be subjected to ignition at 12 volts, is that material going to be subject to ignition at a million volts?
A. Your parameters are not stagnant like that. It still comes down to the duration. For 12 volts to ignite it at a nanosecond or a microsecond versus a -- that ignition may not happen. Whereas with a lightning bolt, at a nanosecond or a microsecond you get ignition.
Q. Well, let's assume for purposes of this hypothetical that we've got the same material, we've got the same duration, energy being applied for a microsecond to both and in one we're applying 12 volts and in one we're applying a million volts. If that material will ignite when you apply 12 volts,

Page 195

isn't it true that that material will ignite if you apply a million volts?
A. I don't see the correlation. I don't see how that happen -- how you get there on that.
Q. So what's confusing to you? Because everything is the same except for the amount of voltage that you're applying to the material.
MR. ELLIS: Objection, form.
A. I mean, the fact of the matter is I don't see them as all being the same. How --
Q. Can you --
A. -- something --
Q. Can --
A. Go ahead.
Q. I'm sorry, I didn't mean to interrupt you. You want to finish what your thought was?
A. No, ma'am.
Q. So can you picture a scenario where -- I mean, what are the factors that we need to be considering? The amount of voltage and the duration and the material. What else do we need to be considering in this hypothetical that I'm trying to establish?
A. The time.
Q. Isn't that duration?

Page 196

A. Yes.
Q. Okay. So we've got the same material being subjected to two different amounts of voltage for the same amount of time. Okay. So I'm applying a million volts for one microsecond. I'm applying 12 volts for one microsecond to the same material. If the material ignites when I apply 12 volts for one microsecond, isn't it going to ignite when I apply a million volts for one microsecond?
A. No. It's not necessary --
Q. Tell me why.
A. Because the magnitude of the voltage and the amperage -- you're not taking into account the amperage that's also associated therewith -- can cause what we're seeing on -- the evidence at this scene is the ablation basically destroying the aluminum around that location. So no, it didn't ignite. The material is gone and it's no longer conducting through there, so you no longer have the heat generation.
Q. Interesting. Okay. Do you know what happens to the metal as it ablates?
A. Vaporizes.
Q. Is there any -- do you know what spatter is?

Page 197

A. I do.
Q. Do you know whether -- in the process of ablation whether there is any spatter?
A. There could be.
Q. And what is spatter?
A. Basically globules of the material that's been ablated.
Q. And if it's aluminum, it's going to be globules of molten aluminum, correct?
A. Probably on the microscopic level.
Q. But yes, that's why it's going to be -- spatter is -- aluminum spatter is going to be globules of molten aluminum, correct?
A. Correct, which then immediately begin cooling.
Q. Can you tell me what the cooling process is and how quickly aluminum spatter cools?
A. It's a transient calculation, which I can do, and I do have the thermal properties of aluminum in various sources that I can get and it is fractions of a second. But it is all dependent upon the diameter of the sphere created.
Q. Of the spatter itself?
A. That's correct. The smaller the particle, the faster that cooling takes place.

Page 198

Q. Do you know at what voltage ablation of aluminum occurs?
A. I don't.
Q. Let's assume for my hypothetical that ablation of aluminum must be larger than 1 million volts. Okay?
A. And at what amps?
Q. Whatever the amperage is, it's going to be the same in both scenarios. Okay? So we've got a duration that's the same, an amperage that's the same, a material that's the same and we know for this hypothetical that ablation does not occur in an aluminum product unless it's greater than a million volts and we apply 12 volts and we apply 1 million volts. If the product -- if that aluminum ignites at 12 volts, is it going to ignite at a million volts?
A. I would have to do further analysis and research to answer that question effectively.
Q. So as you sit here today, you don't know the answer to that question?
A. No, ma'am, I can't answer that question.
Q. Okay.
A. How it's phrased and looking at all the nuances, I can't answer that right now.

Page 199

Q. Do you know whether intra-cloud lightning is more likely to be a positive or a negative flash?
A. With regards to inter-cloud?
Q. Intra-cloud.
A. Intra-cloud. I don't know whether or not it's more prone to be positive or negative.
Q. In cloud-to-ground lightning flashes, once a charged leader is coming from the cloud towards the ground, do you know whether that leader actually hits the ground?
A. The leader?
Q. Uh-huh, that's coming from the cloud towards the ground.
A. No, ma'am, it does not.
Q. It does not. What happens?
A. An upward moving -- oh, I'm trying to think of the word right now. My apologies. My mind's blank. I don't remember what it's called.
Q. There's a word that describes a process where --
A. Yes, ma'am. The downward leader and you have an upward moving streamer -- thank you -- contacts the leader and makes the connection.
Q. Do you know at what height that happens?
A. Since the leader moves through the

Page 200

atmosphere at about 164-foot intervals, at about 164 feet from the location of attachment, that's where the upward streamer connects.
Q. Well, you've mentioned 164 segments. Is it your understanding based upon what you know about lightning that the 164 segments is the way that lightning usually behaves, traveling in those segments?
A. Correct. As it moves down towards the atmosphere, it is only -- it's going in these steps, these leaders of that approximate distance.
Q. And is that a predictable behavior for the way lightning travels from the cloud to the ground?
A. Based upon the literature I've reviewed, yes.
Q. Are there any other predictable behaviors that lightning has?
A. In regard to what? I mean --
Q. Just the way it behaves. Let's say, for instance, is frequency a predictable behavior?
A. Frequency as in how often it strikes or frequency -- what are you referring to?
Q. What else could it refer to other than how often it strikes?
A. Okay. If it's how often it strikes, I

Page 201

don't think that they predict how often it strikes, no.
Q. So strike frequency is not a predictable behavior?
A. No. They -- they -- basically the strike occurs and they record the number of times that that strike took place. But, you know, your question was predictable behaviors, and the predictable behaviors of lightning are outlined in the report in that once the streamer attaches to the leader, then you have the return stroke. Then that channel is open and you can have additional leaders coming down through that established channel or you could have a situation where you have continuous flow. So those aspects are predictable. But I'm not quite sure -- you're asking -- you can predict how many times the lightning is going to strike. I don't think that's predictable.
Q. Are there folks out there that are gathering data on average flash densities?
A. Yes. Vaisala actually does that type of analysis. They publish a map, if you will, showing that -- and that's based upon their statistical analysis.
Q. Is average flash density different than

Page 202

frequency?
A. Yes.
Q. How?
A. Okay. Density is you take the total number, divide by the area -- so basically you're taking that number and saying, okay, over this many square miles, this is how -- how many lightning strikes you get. It's not predicting how many lightning strikes occur in that area. It's just a way of averaging it so they can create this drawing --
Q. Averaging how many times it's going to happen in a particular area?
MR. ELLIS: Objection, form.
A. No, ma'am. They take the data that's already happened --
Q. Right.
A. -- and then they basically look at that data and they say -- which map is that?
Q. I'm sorry. It's E19, which is Exhibit 60.
A. Okay. I don't think we have it yet.
Q. Yeah, you do. It's the big one that had all the photographs and everything. I think it's --
A. There it is.
Q. It was too close to you.

Page 203

A. Right. Basically what it's looking at is flash per square mile per year. So not only are they averaging over the square mile, they're averaging it over the number of years that they've been conducting this analysis. It doesn't have anything to do with the frequency. That's just -- they're saying that's the average flash density.
Q. And it's not any prediction for what they expect to see in the future?
A. No. It's saying this is what we've seen happen in this area. I don't see it as a prediction per se. It's just a map showing -- this is over time over this many square miles based upon the total number of flashes that we get. Over the time we've been studying it, this is what we're seeing.
Q. So it's your opinion that frequency of lightning strikes across the United States is not a predictable behavior?
A. Correct. You can't determine the number of lightning strikes you're going to get at any specific location, no.
Q. Is it your opinion that in areas where there are more incidents of lightning, that there should be more protective measures implemented in those locations?

Page 204

A. With regards to protection measures from what?
Q. From lightning strikes.
A. No, ma'am. I mean, basically a lightning strikes the structure, you have the potential for a fire.
Q. But if you're building a structure in a known area -- or in an area that is known to have a large number of lightning strikes, more than, say, another area across the country, does it make sense that the area that experiences more lightning strikes ought to have more protective measures in place to protect against lightning strikes?
A. Basic -- I'm not quite sure I follow your question because there's buildings built of all different types of materials in areas that are more prone to lightning strikes than other areas of the United States, like the south versus the north. I'm not sure what you're asking with regards to protection. The protection is determined by the building owner and the building designer.
Q. So you're confused as to who ought to be implementing the --
A. I mean, I'm not saying there should be or shouldn't be any more protection, but what you're

Page 205

asking doesn't make any sense to me.
Q. Okay. Let me see if I can try it again. So we've already determined through your testimony and through other evidence that we've seen that there are more lightning strikes in the south -- southern United States than in the northern United States?
A. Okay.
Q. Should there be greater protection implemented in southern states to protect against lightning strikes?
MR. ELLIS: Objection.
A. I still don't understand your question. I mean, who are you saying implements this?
Q. (By Ms. MacLeod) Okay. So -- okay. Should there be codes that are implemented to provide for greater protection against lightning strikes in areas where it is known that there are more lightning strikes?
MR. ELLIS: Objection.
A. I haven't analyzed the codes to determine what protection requirements are necessitated now or in the future. I'm not sure I'm the person to answer your question. I can't understand why you're asking me that question.
Q. (By Ms. MacLeod) Okay. I just wanted to

Page 206

know whether you thought if there is an area that has more incidents of lightning, whether there should be greater protection against lightning strikes in those areas?
A. That's the choice of the building owner or the homeowner. That's their prerogative whether they want to or not want to do some additional protection. That's their choice.
Q. Well, let me ask you this. We've been talking about lightning for a while, and I think we're in agreement -- or would you agree that lightning is a highly destructive force?
A. Lightning is a highly destructive force, yes.
Q. And that's not a secret. That's a well-known fact, correct?
A. It's well known and well recognized, yes.
Q. And it has been well known and well recognized for a long time, correct?
A. Correct.
Q. In fact, because it is well known and recognized, things can actually be done to mitigate the effects of lightning, correct?
A. I mean, your analogy that you're doing is -- let me go back to this way. Tornadoes are

Page 207

known to occur in the United States. It's a well-known fact, tornadoes hit houses. That's a well known fact. So basically can a house withstand the serious magnitude of the tornado? No.
Okay. While they've designed for a hurricane, they don't design a house to withstand a tornado. The tornado by magnitude -- let's compare it to a 3-mile-an-hour wind and you take a tornado and you say 300-mile-an-hour wind, that's only a factor of a hundred.
Okay. Now, this is a factor of a million volts. It's such a large, unique phenomenon that, you know, designing to it is impractical.
Q. So is it your testimony that there are no building requirements that have been implemented to protect against significant winds of tornadoes?
MR. ELLIS: Objection.
A. The structure does not withstand -- they have increased the strength of the structure, but if a tornado hits that structure, chances are there is going to be damage to that structure. You've seen it in high-rise buildings in various cities throughout the United States. You've seen total destruction of neighborhoods caused by tornadoes.
Q. I guess my question to you was: Are there

Page 208

things we can do to mitigate the effects of lightning?
A. I mean, again, that was not in any way associated with what my task was for this particular case. You're asking a question that basically would require substantial amount more research, input, consultation with other people throughout the -- I can't answer that question.
Q. Okay. That's fine. Is there anything to suggest that we had an upward discharge at the Taylor house?
A. Not to my knowledge.
Q. You want to take a five-minute break?
THE VIDEOGRAPHER: Going off the record at 3:49 p.m., ending tape 6.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 4:08 p.m., beginning tape 7.
Q. (By Ms. MacLeod) Mr. Scardino, earlier today we talked about the fire department report that you reviewed in regard to the Taylor fire.
A. Yes.
Q. And in that report there is commentary and other types of information regarding the report -- the fire and what happened, correct?

Page 209

A. Correct.
Q. Did you rely on any of the findings or remarks in the Franklin County Fire Department incident report in arriving at any of the opinions that you offer in your report dated September 28, 2012?
A. I did not rely upon the information in that report to form the basis of my opinions. However, I found it interesting that it corroborated my conclusion that lightning caused the fire.
Q. Why is that interesting?
A. I came to the same conclusion.
Q. Do you know what type of investigation the Franklin County Fire Department undertook in arriving at its conclusions and providing the remarks that it did in the incident report?
A. I do not.
Q. Do you know whether the individual that wrote this report was trained in investigating the cause and origin of fires?
A. I do not.
Q. Have you had any discussion with the individual that wrote this report in how that individual arrived at the remarks that were made in the Franklin County Fire Department incident report?

Page 210

A. I have not.
Q. Do you know how long OSB -- the traditional OSB, not the TechShield -- has been used as a part of the roofing structure in homes in the United States?
A. No, I do not.
Q. Do you know how long TechShield has been on the market?
A. I don't. Those would be better questions for the manufacturer.
Q. In the 30 years that you've been investigating origin and cause of fires, has OSB been used as a part of the roofing structure in homes?
A. Throughout the totality of the 30 years, not to my recollection.
Q. Okay. So you think that when you initially started investigating fires, that you don't know whether OSB was used as part of the roofing structure?
A. In the area where I was conducting, I was not -- at the time I started, I was not familiar with structures utilizing oriented strand board. They were still utilizing wood boards or plywood.
Q. Do you have any information with regard to how long after TechShield was introduced into the market that manufacturers started receiving reports

Page 211

of fires in the course -- during the course of lightning activity?
A. I don't have that kind of information.
Q. Do you have any opinion as to whether TechShield, when installed in the roof structure of a home, attracts lightning?
A. Say that again.
Q. Do you have an opinion as to whether TechShield, when installed in the roof structure of a home, attracts lightning?
A. Yes, I do have an opinion.
Q. Will you tell me what that opinion is?
A. It does not.
Q. What is the basis for that opinion?
A. The basis of that opinion is it's fairly simple comparison. We have buildings on traditional wood frame construction that have metal roofs on them. So that roof may be made out of steel, but it's still metal. And there is no evidence to suggest that those buildings are more prone to lightning strikes. I have seen no evidence to that effect. Nor have I seen any evidence to suggest that because a building has radiant -- or TechShield or a radiant barrier that it's more prone to a lightning strike.

Page 212

I've been to neighborhoods which are full of homes with radiant barrier equipped homes and a single house is affected, not all the houses are affected. Again, that does not indicate that it's attracting the lightning. I have seen numerous instances where houses that don't have radiant barrier sheathing get struck by lightning. So to infer that the metal attracts lightning, then it shouldn't be striking the homes that don't have it, that makes no sense.
Q. Are there any homes out there that exist that don't have metal in them?
A. All homes have metal in them unless you're using plastic studs or plastic nails, I guess. I don't know how you would build the homes. Normally most homes have some type of metal in them, whether it's from hurricane straps to nails to methods of securing things with either screws -- most of that is metal.
Q. If you're comparing a roof with the traditional OSB with no aluminum laminate on it and a roof with TechShield with aluminum laminate, do you have an opinion as to which of those two products would better conduct energy from lightning?
A. Which of those two products would -- well,

Page 213

because of the presence of metal, then the one with metal has the ability to conduct lightning electricity better.
Q. You're familiar with NFPA 921, correct?
A. I am.
Q. Are you familiar with the portion of NFPA 921 that discusses the competence of an arcing event to ignite combustible materials?
A. I believe that I'm familiar with that. I don't know if it's termed exactly as you phrased it, but yeah, I'm familiar with the electrical section of NFPA 921, the artifacts that it creates and its viability as a potential ignition source.
Q. All right. If you'll -- I'm going to direct your attention to NFPA 921 8.9.4.1.
A. Okay. Do you have it?
Q. I do not have it. Honestly, I was expecting --
A. You can direct my attention to it but I cannot --
Q. Yeah. I'm going to read it to you and if --
A. It's a rather large document, and committing it all to memory is definitely something I have not done.

Page 214

Q. Yeah, yeah, yeah. No, I'm not asking you that. I'm going to read you the portion that I'm talking about.
A. Okay.
Q. Okay.
A. And I'm assuming it's accurate, it's -- everything you're going to read is -- I can't verify that.
Q. Yeah. And I apologize. I wish I had brought a copy, but I thought you were bringing your NFPA documents. Sorry about that.
Okay. So NFPA 291 8.9.4.1, it discusses arcs in general. And the portion that I want to direct your attention to says, "In spite of the very high temperatures in an arc path, arcs may not be competent ignition sources for many fuels. In most cases, the arcing is so brief and localized that solid fuels such as wood structural members cannot be ignited. Fuels with high surface-area-to-mass-ratio, such as cotton batting, tissue paper and combustible gases and vapors, may be ignited when in contact with the arc."
That's the end of the section that I want to read you. Is that something that is familiar to you that you feel like you've had the opportunity

Page 215

to read before?
A. Yes.
Q. Are you aware of any paper-backed insulation or paper that would have been in the area of origin?
A. There is paper-backed insulation, but the paper backing is down against the gypsum board ceiling and then covered by the fibrous glass batten material. So it would -- and since it's stapled to the bottom of the rafter, it would not be in a viable location to become ignited.
Q. And "it," you're talking about the gypsum board, or were you talking about the insulation is actually stapled?
A. The insulation is stapled. The gypsum board is nailed. The insulation is stapled via its craft backing, the paper backing, to the underside of the wood rafters. Then the gypsum board is installed on top of the insulation.
Q. With the paper backing --
A. Excuse me. Reverse that. On the bottom, since it's the ceiling.
Q. Okay. Any other paper in the area of origin?
A. The other paper would be the -- again, it

Page 216

would be the craft backing on the back of the insulation inside of the upper portion of that partition wall, and then you would have the paper associated with the TechShield.
Q. Would the styrofoam venting be considered a highly combustible material?
A. I don't know if it would be considered a highly combustible material. It would be a combustible material. But "highly combustible" is usually inferring finely divided particles, airborne gases and vapors.
Q. I am going to read a different section. It's NFPA 291 8.9.5 and --
A. Again, the same provisions we talked about earlier, we don't have it in front of us. Go ahead.
Q. Right. And so I know you don't have it memorized to be able to tell me. I didn't ask you if it was -- did I read it right. But in general, it has to do with sparks.
A. Sparks?
Q. Sparks.
A. Okay.
Q. "Sparks are luminous particles that can be formed when an arc melts metal and spatters the particles away from the point of arcing. The term

Page 217

'spark' has commonly been used for a high voltage discharge as with the spark plug in an engine. For purposes of electrical fire investigation, the term 'spark' is reserved for particles thrown out by arcs, whereas an arc is a luminous electrical discharge across a gap."

Is it your understanding -- well, first let me ask you: Is this a provision of NFPA 921 that you've ever come across before?

A. It sounds familiar, yes.

Q. Okay. Is it your understanding that a spark is separate from an arc?

A. You could have mechanical sparks, and you could have electrical sparks. The spark associated with electricity is generated during electrical arcing, which is the spark becomes the particle that is actually thrown off.

With regards to mechanical sparks, basically chopping of concrete floors with a metal tool or hitting steel on steel can create a mechanical ember or glowing particle that may be incandescent.

Q. Is it your understanding that a spark provides additional -- an additional energy source that can potentially heat and ignite a combustible

Page 218

material or a fuel like paper or styrofoam?

A. And, again, it deals with the size of the particle contained therein and the rate at which it cools.

Q. So does that mean yes, that there is potential that that could happen?

A. Maybe. I mean, the particle size may be too small where it cools instantaneously. Again, it's all dependent upon the particle size, the distance to the combustible material and whether or not -- and how that material reacts to a radiative type heat source.

Q. Do you know how far the styrofoam venting was from the radiant barrier?

A. Based upon my understanding of the construction, you have a 2 by 10, which has nominal dimensions of an inch and a half by 9 and a quarter. You have 8 and a quarter inches of R30 fiberglass insulation. So that leaves me about an inch left.

Q. But -- sorry, that was a lot of information. Between the TechShield aluminum laminate and the pink styrofoam venting is about an inch?

A. It's from zero to an inch.

Q. But as I understand your answer, if the

Page 219

spark is large enough, then it is -- will serve as a potential heat source that can ignite a combustible material in the area?

A. Correct. And we would have to see how that material reacts to that spark and what temperature that spark might be at.

Q. Do you have any opinion as to which would ignite more readily from a spark, paper or untreated wood rafter?

A. Again, that's a subjective question, but again, paper, being thinner, has the greater likelihood of being ignited by various types of heat sources.

Q. So something that's thinner is more easily ignited?

A. In most cases that is directly related to the mass of the object, so yes.

Q. We started talking earlier about criticisms that you had of the various experts that have been retained by plaintiffs in this case.

A. Did we start talking about that earlier?

Q. We did. We talked about the criticism -- well, and actually, maybe it wasn't the reports. It was just criticism of the plaintiffs' experts and you were criticizing McDowell Owens' testing because of

Page 220

the duration in which electrical energy was applied to the TechShield, if I recall your testimony correctly.

Do you have any other criticisms of the testing that you have had the opportunity to see that was done by McDowell Owens?

A. The other criticism I would have, again, would be the fact that the testing does not reflect the as-installed condition at this particular site.

Q. What do you mean by that?

A. It does not try to replicate the configuration, the spacing of the studs, the materials that were involved, how it's assembled, the gypsum board enclosure. It does not try to replicate that. It doesn't try to replicate lightning.

Q. Are you aware of any testing facility that is able to replicate lightning?

A. I haven't conducted a search for that, no. I understand that they do do testing in Florida with regards to lightning. The specifics of that testing, I don't know, but that might be one location you could look.

Q. So is part of the criticism of running the test that is set up similar to the way the Taylor home was set up, is part of the criticism the gravity

Page 221

of the test in the sense of the directional forces if something were to happen, if there were to be spatter or sparking the way the testing was set up, they would be pulled back down towards the TechShield? No?

A. You've lost me with regards to that.

Q. Okay.

A. I mean, it doesn't in any way try to replicate what was in existence at this particular residence to see how those materials interact.

Q. Okay. Other than what we just talked about and the duration issue that we talked about earlier, any other criticism of the testing that's been done by McDowell Owens?

A. I'm sure I would have other criticisms if you ask me a specific question, but you know, just to arbitrarily say, Okay, I have this criticism about it, none come to mind right now.

Q. Have you had an opportunity to read Ron Simmons' supplemental report?

A. Yes.

Q. Did you have any criticisms of anything in his supplemental report?

A. I don't agree with his findings.

Q. Anything more specific than that?

Page 222

A. I mean, again, we'd need to go through the report line by line if we have to. I don't -- I recall reviewing it. I recall reviewing his first report. I looked at what he's trying to present as evidence, and some of it appears to be idle speculation and conjecture with regards to -- and again, I don't remember if it's in his report or if it's in an article of his, but where he makes inference to an increasing amount of lightning taking place. There's no data to support that.

The reliance upon a fire chief in some arbitrary city or county of Texas as valid proof of anything doesn't even come up to the level of necessary reliability to utilize it in the formation of an opinion or even a speculation.

Other criticisms? He sees sooting, and I was there. I looked at the panels. I compared it to the scorching that I saw on the dryer and scorching that I saw on the dryer insert. And comparing it at the scene, looking at it firsthand while it was there, it appeared to be scorching to me. Based upon my years of experience, I did not see evidence of sooting there.

And then when I got Mr. McGraw's report, I read Mr. McGraw's report and it indicated

Page 223

scorching. So I was confident that that was scorching. So those are some of the things that I disagree with Mr. Simmons on.

With regards to whether or not he is replicating the testing necessary to assess lightning, I will defer that to Mr. Goodson to answer those questions more specifically.

Q. And if I understood your testimony from before earlier, you haven't done any testing to determine whether it was sooting?

A. And the way I was trying to answer you before, I thought you were asking me definitively to say, oh, is that sooting or scorching. And I was like, well, definitively the only way to do it would be to do further analysis, to do some type of testing, whether it be swabbing, whether it be metallurgical evaluation. I don't know. That's the only definitive way I know of.

But relying upon the tools of the trade and years of experience, that appeared to be scorching, not sooting.

Q. Okay. So are you changing your testimony that it's something that you can observe with the naked eye?

MR. ELLIS: Objection.

Page 224

A. By comparison with other evidence, yes, I believe you can observe it and assess it in the field based -- with the eye with, you know, camera zoom ability and so on.

Q. (By Ms. MacLeod) And you took photographs, so I'll be able to see the photos in the --

A. Yes, ma'am. My photographs are -- by comparing my photographs to Mr. McGraw's photographs, I found it interesting as well that they're substantially similar in what was covered and what was documented.

Q. So did I also understand that you feel that your position that this was scorching and not sooting is supported by Rob McGraw's report that identifies it as scorching?

A. Correct. He also identifies it on numerous occasions in his report as scorching.

Q. Have you reviewed his deposition testimony?

A. No, ma'am, I have not.

Q. Obviously you've had a chance to read Mr. McGraw's report?

A. And his supplemental, yes.

Q. Do you have any criticisms of either of those reports that he's submitted?

A. Nothing comes to mind right now but if --

Page 225

again, if we went through it line by line --
Q. You might find something?
A. -- I might find something I would talk about.
Q. And I'm just really asking you if, you know, something stuck in your mind as a criticism. I mean, obviously there were things with Mr. Simmons that did, but nothing like that that sticks out to you about --
A. No. I mean, like I said, I agree with him with regards to the fact that there was scorching. I agree with him that there was a lightning strike. I agree with him, plus or minus probably a couple of inches, where the area of origin is. So I don't recall anything in Mr. McGraw's report that I would have substantial criticisms with.
Q. Did you have an opportunity to read Tom Eager's report?
A. Briefly. I looked it over. I wasn't quite sure what all he was saying, and I didn't have enough time to digest everything he said in his thing to critique it properly. So I would probably have criticisms about it later or, you know, agreements with it if there's something agreeable in there. But right now I don't know.

Page 226

Q. Well, if that happens, will you notify your counsel so that he can provide me with that information of criticisms that you have with Dr. Eager's report?
A. Okay.
MR. ELLIS: Whether or not we'll comply with a request like that, I have no idea at this point.
MS. MacLEOD: Well, we can always leave this deposition open if we want to.
MR. ELLIS: You got your shot today and that's it.
Q. (By Ms. MacLeod) If you will turn to Exhibit 60.
A. Okay.
Q. You have attached as E1 the Hurricane Irene Forecast Map. Why did you attach those to your report?
A. Basically it is reflecting weather conditions surrounding the incident structure before and during and after the event. And so basically there is severe weather in the area in the form of Hurricane Irene.
Q. And did you do this research so that you could better determine whether, in fact, lightning

Page 227

was in the area?
A. Correct. I mean, again, this is a situation wherein we do not have a person who definitively said yes, lightning struck my home. So I was looking to see whether or not lightning, first of all, indeed, did have the potential to strike the home from weather reports, and that's what the purpose was.
Q. Would that be true for E2?
A. Yes, ma'am.
Q. And then for E3, E4, E5, can you help me understand why you included --
A. Establishing the location of where the incident took place and, you know, you do that with maps and then if, for example, they were to send me back a lightning strike report and it's got the wrong location, then I would know where it is. So basically I'm establishing where this thing is located.
Q. You mean the Taylor structure?
A. Yes, ma'am, the house, the site.
Q. And then in regard to the photographs at E6 and E7 that are aerial photographs depicting location of the subject residential structure, again, that's just providing a reference as to the location for the

Page 228

structure?
A. Right. But E7 also -- while E6 gives you a location with some coordinates, E7 is basically the only view that shows me the roof is still intact. While it may be a blurry picture, that's what I get.
Q. And this was a picture of the Taylor house from September 28, 2009?
A. That's what the image from Google Earth says, yes.
Q. Okay. The images E8, E9 and E10, why did you include these images?
A. Again, it's referring to the weather data that was there. One is -- E8 is 9:00 a.m. E9 is at 4:00 p.m., and E10 is at 9:00 p.m. So basically before, just prior to and after the fire was discovered.
Q. So it's showing the progression of the storm on the day of -- on August 29th?
A. Yes.
Q. And, again, did you use this in formulating your opinion that lightning struck the Taylor home?
A. Correct. There was severe weather in Franklin County, which is where the home was located.
(Exhibit 62 marked)
Q. (By Ms. MacLeod) I just handed you what

Page 229

we've marked as Exhibit 62. It's the Vaisala, Inc. STRIKEnet Report for August 29, 2011 that you obtained in this case, correct?
A. Correct.
Q. Is this, getting a STRIKEnet report from Vaisala, something that you typically do in a case?
A. Either I do it or I have an associate get it for me. But yes, I typically do that on all fire origin and cause analysis because natural causes for fires have to be considered and eliminated or confirmed with regards to determining the origin of the fire. I could actually have a fire caused either accidentally or deliberately and I need to know whether or not lightning could apply.
Q. Have you ever worked for Vaisala?
A. No.
Q. And do you know whether this company has a reputation for providing accurate weather information?
A. My understanding is yes, it was a group I typically utilize. I understand Mr. McGraw utilized the same entity and another. So I would say yes, this is something that fire analysis people typically consider.
Q. And what was the search period time frame

Page 230

that you used?
A. I used from August the 29th, 12:00 a.m. to August the 29th, 11:59. So all of August 29th.
Q. And is that typically what you do?
A. Yes, typically.
Q. Was there any reason for choosing that time frame?
A. Again, if I had a more definitive time to start with, then I might. But normally I do it for the entire day. If you're close to midnight, then I would go part of the day before. So, you know, it just depends when the event occurred. But the full day is fine.
Q. And you used the Taylors' address as the location for the STRIKEnet information?
A. Correct.
Q. And the information that is provided in here includes a search radius of 5 miles around the Taylor home?
A. Correct.
Q. And within that 5-mile radius, this is telling us that there were 399 strikes?
A. Within the 5-mile radius, 399.
Q. And do you know how the data that is used in the STRIKEnet reports is collected?

Page 231

A. My understanding is rudimentary in that they have detectors or sensors throughout the United States, and when a lightning strike cloud to ground occurs, they detect it. Can I tell you more about the detectors? No.
Q. Do you know what criteria Vaisala uses in determining strike distances?
A. What criteria? With the ellipses and degree of accuracy? They use some ellipses which gives them their idea of confirmation, but I'm not quite sure I understand your question. I think they call it a confidence ellipse.
Q. Really what my question was is: Do you understand what criteria they use in creating that confidence ellipse?
A. No. How they create the confidence ellipse, I don't know.
Q. Did you look through the Vaisala report to see if there were any confidence charges?
A. I scanned through it. I can't recall seeing one off the top of my head. If there is one, please point it out. I'll be happy to look at it.
Q. No, I didn't see one either.
If we can go back to Exhibit 60, which is your Appendix E. E11 is a close-up of page 2 of

Page 232

the Vaisala report that we were just looking at, correct?
A. Correct. It's the map that they have in their report.
Q. Then E12?
A. Is a close-up of the prior picture.
Q. And these are close-ups -- you did this --
A. Yes, ma'am.
Q. -- made them close? Okay. And what was the purpose for providing the close-up in E12?
A. Basically -- I'm sorry, but my eyesight is getting bad, so it -- I wanted to get a closer view of what was going on in the vicinity of where the red star was, so I enlarged it. I mean, that's what I'm doing -- that's the whole purpose of doing it. I'm enlarging that specific area.
Q. Okay. And on that red star in E12, it looks like there are at least five little yellow dots that in some way hit on the red star?
A. I think there's six.
Q. Six. Okay.
A. The point to the left.
Q. Okay. And E13 is just a close-up of page 3 of the Vaisala report?
A. Right. That's the confidence ellipse.

Page 233

Basically they colored in the entire circle.
Q. Okay. And then on E14, it's just a close-up of E13, sort of like what you did before?
A. Correct.
Q. And I just want to make sure I understand why you blew it up and why you attached it to this report.
A. Again, enlarging it, I mean, you know, if you look at E13, the star is sort of getting lost. In E14 you can at least sort of see the star now. I mean, it's to give you a closer view is all.
Q. Okay. And again, this was all done in confirming that there was lightning activity in the area of the Taylor home on the day of the fire?
A. Correct, and before the fire was reported.
Q. Uh-huh. Let's turn to E16.
A. Yes, ma'am.
Q. Can you tell me what this document is?
A. Yes, ma'am. If you take E18 and E16 and you put E18 above E16, basically what you have is from -- this is, again, from Vaisala and they were -- this is done by a study from the -- one of the lightning reports that's attached to the back of the report. Basically they were talking about lightning -- I think it's an NFPA document.

Page 234

You're looking at N and O and P. Basically this data is going to be coming out of those papers. Basically this is just the table summarizing everything that was in that report. Basically this is the lightning flashes by state and basically it's per year on average. And so E16 shows the total number of strikes throughout the entire United States, of which E18 is part of, but E18 is highlighting the number of strikes that occurred in North Carolina.
Q. But it's two separate charts?
A. Well, they're the same chart. They're part and parcel of the same thing. The total at the bottom incorporates all of the other states on E18 as well. My apologize -- I apologize for confusing you.
Q. I see. Okay. So E16 is actually a continuation of E18?
A. I think it's reversed. E18 is -- I mean, yeah, E16 is a continuation of E18.
Q. Did you participate in any way in collecting any of the data that's in this chart?
A. I did not.
Q. Do you know how they collected the data in this chart?
A. Again, basically this is from Vaisala's

Page 235

database is what the sources at the bottom are reflecting. So that's where that data is coming from.
Q. And why did you include E18 and E16 in Appendix E?
A. Basically there's in excess of 23 million lightning strikes that hit the ground here in the United States on average every year since 1996 to 2008. So, I mean, 23 million flashes of lightning that are striking the ground. In North Carolina, on average, there are 546 -- let's say 546,603 of ground -- cloud-to-ground lightning strikes per year on average just in North Carolina.
Q. So explain to me what that means to you.
A. Lightning strikes in the United States 23 million times a year plus. You got a half a million times lightning strikes on average in North Carolina every year.
Q. So are you using these charts to make the point that lightning is prevalent?
A. Lightning strikes are going to happen. And this is how many of them actually occur according to this data source.
Q. Okay. And does this number actually include all lightning strikes? It's not parsing it

Page 236

out structure versus non-structure. That number is for all lightning strikes -- like let's just -- let's stick with North Carolina since that's really what we're --
A. The information comes from Vaisala. Vaisala here on E17 says National Lightning Detection Network. So that is basically looking at the lightnings on average per year. This is not associated with fires or anything. This is associated with lightning.
Q. So when you look at this chart, you can't actually tell what the lightning is striking, if anything?
A. Cloud to ground.
Q. Just cloud to ground?
A. And if it hits a house, it's cloud to ground. It would be detected.
Q. But this chart's not telling you that data as to whether -- how many of that 546,603 is striking a house or some type of structure?
A. That's correct. On average it says. So yeah, it does not tell you if it's striking a house. It does not tell you if it is resulting in a fire. It's telling you there's in excess of half a million lightning strikes in North Carolina on average every

Page 237

year.
Q. It's telling us you got a lot of lightning strikes in North Carolina. Can you look at this chart and does it lend any support to the idea that lightning is prevalent in the southeastern United States?
A. Does this data reflect that?
Q. Yeah.
A. I believe if you went through it, you would see that, yes. But I think it's more represented on the E17, which shows you more graphically the flashes per square mile per year. So that's the flash density again. But you can see the higher flash densities are in the coastal areas of Florida, central Florida, the Panhandle of Florida, southern Alabama, southern Mississippi, southern Louisiana, southern Texas. That's the red zone. So again, that graphically depicts areas more prone to lightning strikes.
Q. And what does it say about the average flash density for the area where Louisburg is located?
A. Basically if you look at E19 and gauging generally where Franklin County is and then Lewisville is in it, you would be what appears to be

Page 238

in the -- again, I'm having trouble discerning these colors -- the 6 to 9 range of flash -- flashes per square mile per year.
Q. Okay. Will you -- on E19 will you mark the location where you think -- just generally where you think Louisburg is, where it falls on that map?
A. Okay. What I'll do is I'll go back to --
Q. I wondered if this is why you included some of those other charts, so that you could put it all together?
A. Again, basically if you look at this map on E8, you see Riley. Then to the north and to the east -- northeast, there's three counties right along the state line. Well, the little county holding them up, that's Franklin County.
Q. Okay.
A. So that would be right there. So, you know, I mean, if you want me to --
Q. I do.
A. -- I can give you an approximation on E19.
Q. I guess I'm going to go back to the E16 and E18. And if you will, help me understand what opinions in your report these two documents help support.
A. That lightning strikes in the United

Page 239

States. That lightning strikes in North Carolina.
Q. Okay. If we could turn to E20?
A. Yes.
Q. Can you tell me what this document is?
A. Yes, ma'am. Again, that comes out of the NFPA references -- excuse me -- that I attached to the report. Basically this is referring to the number of lightning fires reported to local fire departments between 1980 and 2008. Basically this is based on the National Fire Incident Reporting System. The report that we reviewed previously is the format that would probably go into that system with regards to documenting a lightning strike. That type of information, that type of coding.
Q. You mean the information from Vaisala?
A. No, ma'am. The information from the fire report, National Fire Incident Reporting System. It was in the incident report. It was in that incident report format. So that's where this data is coming from.
Q. So that is if the Franklin County Fire Department actually submits its information to NFIRS, correct?
A. That's correct. Not everyone submits it to that.

Page 240

Q. It's actually -- it's a voluntary -- submission of data is voluntary, correct?
A. That is my understanding. But again, this is the data that I have available to me through the National Fire Protection Administration with regards to their 7,700 -- 779,500 lightning reported fires to fire departments in 29 years.
Q. Is that little information on the left-hand side, is that information you added to the chart or was that part of the --
A. Correct. Basically what we did was we added them up, and that was the number that we got.
Q. Did you participate in collecting any of the data?
A. No.
Q. And this data only goes through 2008, correct?
A. That is correct.
Q. And the Taylor fire was actually in August of 2011?
A. Yes, I believe that's correct.
Q. If you will help me interpret this chart. In that first -- I understand year. And then home structure, what does that mean to you?
A. Residential structure.

Page 241

Q. Can you tell by looking at the information in this chart whether the lightning that struck the home structure was direct or indirect?
A. Looking at this data, no.
Q. Can you tell if the fire that resulted was a large or a small fire?
A. No, ma'am. This is basically fires that local fire departments responded to. If the lightning struck a structure, there was no fire, the fire department was not notified, it would not be included in this data.
Q. I'm just trying to figure out what the data shows. And, I mean, it's not showing first material ignited, correct?
A. It does not, not in this chart.
Q. It's not telling you the heat source?
A. It is telling me the heat source is lightning. Hence, the purpose of the report.
Q. It's not telling you whether a defective product was involved?
A. No, ma'am. It's saying that lightning basically caused this many fires.
Q. It's not telling you if an electronic device was the cause of the fire?
A. No, ma'am. It's telling you lightning

Page 242

caused this many fires.
Q. And I guess it's just not giving you any specifics about what happened with the particular lightning fire that is reported in Table 4?
A. The specific is that lightning caused the fire.
Q. Does it say that lightning caused the fire?
A. Lightning fires reported to local fire departments.
Q. But does that mean that lightning caused the fire?
A. Based upon the national incident -- I mean National Fire Incident Reporting System, they're going to be saying that lightning was the cause of those particular fires.
Q. Yeah, but I guess what I'm asking you is: Is that the same thing as Dennis Scardino coming in and saying what the cause of a fire is?
A. No, ma'am, it's not. It depends upon the individual making the call. It could be exactly what I would say it is. It could not be. But the unique aspect about lightning is typically when witnesses are present to report it, the witnesses report similar observations with regards to loud percussion, loud noise, bright flash. There was lightning storms

Page 243

in the vicinity. So the circumstantial evidence gives the responding firefighter or whoever is going to be filling out the NFIRS document a good clue as to what was the cause of that fire.
Q. Really? It's going to tell you what the cause of the fire is?
A. Yes, ma'am, the lightning.
Q. As I read this chart -- and you can tell me if you disagree with me -- this chart is talking about lightning fires?
A. Yes, ma'am.
Q. That to me says that there was -- it was reported there was a fire and that lightning was involved. This doesn't tell me what the cause of the fire was. Is it telling you what the cause of the fire was?
MR. ELLIS: Objection.
A. Yes. I believe I've answered that already. It's telling me that lightning caused these fires because they're called lightning fires.
Q. (By Ms. MacLeod) Is it your opinion that every time lightning strikes a structure and there is a fire, that the cause of that fire is lightning?
A. Lightning is the cause of those fires, yes.
Q. Is there any scenario that you can think of

Page 244

in which lightning struck a structure but the cause of the fire was something different than lightning?
MR. ELLIS: Objection.
A. Sure, I can think of something.
Q. (By Ms. MacLeod) Can you tell me what those are?
A. Well, let's say on Saturday lightning struck a structure, fire didn't originate and then later somebody's starting a fire in the fireplace and inadvertently sets the house on fire. I mean, that's an example of --
Q. I'm sorry --
A. -- lightning struck it. It's not a -- it would not be called a lightning fire if a fire did not result. It would be a lightning strike, but the fire department didn't respond to extinguish a fire. It's not a lightning fire.
Q. Can you think of any time when there is a lightning strike and in a reasonable proximity to that lightning strike, fire erupts that the cause of the fire would not be lightning?
A. Nothing is coming to mind right now.
Q. Do you know if the fire departments that are submitting their information to NFIRS are making any attempt to track any data regarding radiant

Page 245

barrier systems installed in homes that experience lightning fires?
A. I have no information about what they're tracking, no.
Q. What fire departments are tracking?
A. No, ma'am. I have no idea other than what you would see in a incident report.
Q. If you will, will you tell me why you determined that you would include the chart Table 4, E20 into your report?
A. Basically lightning causes fires.
Q. Any other opinion that you intend to offer at the trial of the matter that this chart supports?
A. Lightning causes fires. If you have any more specific question, I'll try to answer it.
Q. Well, you know what your opinions are that you've asserted. And I'm just trying to determine from you which opinions that you'll assert at trial does the information in Table 4 support. If it's nothing more than what you've already told me, that's fine. I just want to make sure I've covered the bases and I've asked you to tell me all of the opinions.
A. Lightning causes fires.
Q. That's it?

Page 246

A. Lightning causes fires.
Q. But my question is: That's it? There are no other opinions?
A. Again --
MR. ELLIS: Objection. You've asked the question four times now and gotten the same answer.
A. It depends what you ask me, but lightning causes fires.
Q. (By Ms. MacLeod) All right. If you'll look at E21.
A. Yes, ma'am.
Q. What is this document?
A. Well, if you look back at E20, that first column, "Home Structures," this is a subset of that except this subset goes from 1980 until 2010 as opposed to stopping at 2008. And it's only dealing with that first column, which is "Home structure fires caused by lightning."
Q. Actually, it says "Home structure fires caused by lightning fires," right?
A. Correct.
Q. Does that have any significance or difference to you, "home structure fires caused by lightning" and "home structure fires caused by

Page 247

lightning fires"?
A. One says basically lightning fires reported to local fire departments. Home structure fires caused by lightning fires reported to local fire departments. If you start looking at the numbers, 1980, it's the same number. 1981, it's the same number. The chart is basically showing you that same first column that was in E20.
Q. I think I understand how the charts are working. I'm just asking you if the terminology "caused by lightning fires" has any significance to you?
A. Basically lightning caused these fires based upon the data presented here.
Q. The data in the charts?
A. Correct.
Q. In regard to your opinion that lightning -- that the fire at the Taylor home was most probably the result of ignition of building materials struck by lightning, tell me in regard to this table that we're looking at, the -- E21, does that give you any basis for determining whether or not the radiant barrier in the Taylor home ignited and caused the Taylor house to burn?
A. Ask your question again.

Page 248

Q. Based on your opinion as to the cause of fire at the Taylor house, tell me how this chart supports that opinion that you asserted in your report.
A. And the opinion I asserted in the report, you're talking about what we talked in the summary section?
Q. Page 1 in the summary section, yes.
A. Okay. And you're looking at which line again?
Q. Sorry. "The subject fire" which was damaged -- "which damaged the property and contents at 190 Cedar Valley Lane, Louisburg, North Carolina was most probably the result of the ignition of building material which was in the confines of the attic ceiling space by an act of nature, a lightning strike."
A. How does this chart -- basically in the U.S., 164,400 -- assuming I added them correctly. If I didn't, then whatever the addition would be -- home structure fires caused by lightning reported to fire departments in 31 years. So in 31 years, 164,400 home structure fires were caused by lightning. Lightning causes fires. Basically this is saying that -- this act of nature, a lightning

Page 249

strike, was the cause -- was the most probable cause of this fire.
Q. And lightning does cause fires, but there are times when lightning strikes a structure and does not cause a fire, correct?
A. That is correct.
Q. Have you talked to anyone at NIFI -- NFIRS or NFPA concerning any of the data that can be found in the charts that you've attached?
A. Have I talked to anybody there? No. I've read the reports from which it came.
Q. And on page E22 of -- it says -- the title is "Non-home Structure Fires Caused by Lightning Fires Reported to Local Fire Departments by Year, 1980 through 2010," correct?
A. Correct.
Q. Have you asked anyone why the terminology "lightning fires" is used instead of just "lightning"?
A. No, I have not asked anyone specifically why that title reads the way that it does.
Q. Do you intend to offer any opinions at trial in regard to any applicable codes that deal with installation of radiant barrier products?
A. I have not researched the codes at this

Page 250

point in time to do that. I have not been asked to do that.
Q. And that's for any applicable code?
A. With regards to the radiant barrier systems, correct, I have not been asked to address code related issues.
Q. In your analysis of the interplay between TechShield and lightning, would you agree that there is a certain amount of focus on things that are relevant to your investigation, like the combustible materials, the electrical system, the mechanical systems? I mean, is that a fair statement, that those things are --
A. Repeat that one more time because the first part where you started off confused me a little bit.
Q. Okay. In your analysis of the interplay between the TechShield and lightning --
A. In my analysis -- say that one more time.
MR. ELLIS: Objection.
Q. (By Ms. MacLeod) Have you done any analysis of the effects of lightning on TechShield?
A. Lightning causes fires, but have I done any analysis on lightning on TechShield?
Q. Yes.
MR. ELLIS: Objection.

Page 251

A. No, I haven't done that. And nobody to my knowledge has done that.
Q. At this point in time, have you been asked to undertake any further work on this case, on this project?
A. No, ma'am. I'll probably be getting depositions to review and things of that nature, but I have no specific requests pending.
Q. At this time do you anticipate providing any additional opinions in this matter other than what we've -- what is in your report and what we've talked about today?
A. Again, I don't know what questions will be asked in the future, so as such, I can't tell you until I hear the question. I think we've talked about my opinions in my report.
Q. And that's all you anticipate at this time providing in regard to opinions for this case?
A. That's my understanding.
MS. MacLEOD: Okay. I don't have any other questions at this time.
MR. ELLIS: Let's take a break.
THE VIDEOGRAPHER: Going off the record at 5:23 p.m., ending tape 7.
(Recess taken)

Page 252

MR. ELLIS: We're done.
(Proceedings concluded at 5:23 p.m.)

CHANGES AND SIGNATURE OF DENNIS J. SCARDINO

PAGE	LINE	CHANGE	REASON

I declare under penalty of perjury that the foregoing is true and correct.

_____
DENNIS J. SCARDINO

SUBSCRIBED AND SWORN TO BEFORE ME, the undersigned authority, by the witness, DENNIS J. SCARDINO, on this the _____ day of _____, 2012.

_____
NOTARY PUBLIC IN AND FOR
THE STATE OF _____

My Commission Expires: _____

STATE OF TEXAS
COUNTY OF HARRIS

REPORTER'S CERTIFICATE
ORAL DEPOSITION OF DENNIS J. SCARDINO
December 3, 2012

I, the undersigned Certified Shorthand Reporter in and for the State of Texas, certify that the facts stated in the foregoing pages are true and correct.

I further certify that I am neither attorney or counsel for, related to, nor employed by any parties to the action in which this testimony is taken and, further, that I am not a relative or employee of any counsel employed by the parties hereto or financially interested in the action.

SUBSCRIBED AND SWORN TO under my hand and seal of office on this the 8th day of December, 2012.

Laurie Carlisle, CSR
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November 21, 2012

Skye MacLeod, Esq.
Law Offices of Stephen R. Paul, PLLC
P.O. Box 16099
Chapel Hill, NC 27516

Re: Insured: Christopher Taylor
Claim No: 33-D493-449
Date of Loss: August 29, 2011
Our File No: 121093

AMENDED AND SUPPLEMENTAL REPORT

Dear Ms. MacLeod:

Introduction

Pursuant to your request, McDowell Owens Engineering, Inc. has conducted an electrical investigation and analysis of a fire loss at 190 Cedar Valley Lane in Louisburg, North Carolina that occurred on August 29, 2011. A preliminary report based upon information available at that time was released in August of 2012. Since that time, new information has become available. The following is an amended form of that preliminary report along with a supplement. This amended and supplemental report is released in order to properly reflect the new information. Conclusions and opinions expressed in this report may be further supplemented or amended should additional information become available.

Material Reviewed for Preparation of Report

1. Incident description provided in phone conversation with Skye MacLeod, Esq.
2. Excerpts of a newspaper article in the Franklin Times
3. Expert report and scene photographs taken by Mr. Rob McGraw
4. Examination of branch circuit conductors collected by Mr. Rob McGraw
5. NFPA 921 - 2011 version
6. NFPA 780
7. NFPA 70
8. *Amended and supplemental report of Mr. Rob McGraw dated November 6, 2012*
9. *Results of a joint destructive evidence examination on September 12, 2012*
10. *Expert report by Mr. Dennis Scardino (not dated)*
11. *Expert report by Mr. Mark Goodson (not dated)*
12. *Expert report by Mr. Thomas Eager dated November 19, 2012*

Note: Items 8 – 12 are new sources of information since the release of the preliminary report.

Background of the Fire Incident

During the last week of August 2011, storms spawned by Hurricane Irene moved through the area around Louisburg, North Carolina. According to reports in the Franklin Times, lightning was involved in the cause of at least two structure fires in Franklin County during that period. The fire scene at 190 Cedar Valley Lane was investigated by Mr. Robert McGraw of Element Analytical. Clear evidence of a lightning strike to the structure was recorded in photographs. Analysis of the fire scene by McDowell Owens Engineering, Inc. is based primarily on information, photographs, and evidence provided by Mr. McGraw.

Electrical System Examination

Underground electrical service is provided to the residence via a 200-Amp Cutler-Hammer main breaker panel located on the east exterior wall of the house. Power is distributed from the main panel to two sub-panels inside the house. At the service entrance location, proper system grounding mechanisms were observed to be in place. Photos revealed no evidence of failure or problems with any of the electrical service equipment. Material used in the wiring of the house was standard and installation workmanship of the electrical wiring appeared to be superior. In summary, no issues were observed in or on the electrical system that were in any way related to the cause of the fire.

PHOTO 1 - Element Analytical Photo 416
Electrical System Workmanship is of Professional Quality
No Evidence Found of any Condition Causally Related to the Fire

Overview of the Fire Damage

On the exterior of the house, fire damage was observed on the center section of the *north*-facing roof surface and on a small portion *south* of the roof ridgeline. As this was an attic fire, the area that sustained actual burn damage (consumption of material) was primarily under the roof deck and on the rafter assemblies. The main burned area was near the east-to-west center of the roof deck and just *north* of the roof ridgeline (see PHOTO 3). The size of the heavily burned area appeared to be less than 8 feet by 12 feet.

PHOTO 2 - Element Analytical Photo 001
South Side of the House at 190 Cedar Valley Lane
(Shows only a Small Portion of the Tarp on the South Side of the Roof Ridgeline)

PHOTO 3 - Element Analytical Photo 221
Shows Tarp over the Main Burned Damage on the North-Facing Roof

Burn Damage Area Examination and Analysis

Fire damage in the residence at 190 Cedar Valley Lane was primarily confined to the attic space. The area that sustained actual burn damage (consumption of material) was on and under the roof deck and on the rafter assemblies. The main burned area was near the east-to-west center of the roof and just *north* of the roof ridgeline. The size of the heavily burned area appeared to be less than 8 feet by 12 feet.

PHOTO 4 - Element Analytical Photo 171
Most Attic Burn Damage Localized at Upper-Center of North Roof Deck
(Note Temporary Sheathing where Burned Radiant Barrier Sheathing was Removed)

Burn damage patterns on vertically oriented surfaces can be useful in identifying exact area of origin as flame tends to spread upward and outward (see NFPA 921, Chapter 6). Photos show the lowest burn damage is approximately 8 to 10 feet north of the roof ridgeline. The burn pattern spreads up and out from there and continues all the way up to the ridgeline of the roof. Information provided by Mr. McGraw supports a finding that the fire point of origin was in this lower portion of the burn area.

During a joint examination of the burn damaged area, conductors from two branch circuits were recovered and retained as evidence. One of the circuits recovered consisted of a section of 14-3 non-metal shield cable (commonly called Romex) and a section of 14-2 Romex. These were identified as Element Analytical Evidence Items #5 and #6 and were reported to have been the only conductors in or near the origin area that were considered as possible causes on the fire. McDowell Owens was able to examine these cables on two occasions. The first occasion was at the McDowell Owens facility in Kingwood, Texas. The second occasion was during a joint and destructive examination at the Goodson Engineering facility in Denton, Texas. During these examinations, McDowell Owens determined that neither of these cables had been causally involved in the ignition of this fire for the following reasons. The 14-2 cable contained no evidence of localized over-heating or electrical activity; therefore, this cable could not have been the cause of the fire. The 14-3 cable did show signs of electrical activity, but in an unusual pattern. The ground wire (and only the ground wire) had evidence of electrical arcing in two locations. The physical appearance of the arcing evidence was consistent with that observed as a result of "arcing through charred insulation"; however, there were no corresponding arc marks on any of the other three wires in the cable. This means that the arc marks on the ground wire could not have been a result of some pre-fire failure of this cable that resulted in arcing between wires of the cable. Since the only other electrical conductor and possible source of current was the aluminum on the radiant barrier material, it must be considered highly likely that the current causing the arcs on the ground wire came from that

aluminum sheet. The fact that there are two separate arc marks further supports this explanation. The current that was available on the aluminum sheet during the lightning strike would fully explain all conditions observed on these wires. Finally, the fact that the arc marks observed on the ground wire (regardless of the source of the current) were found outside of the origin area tells us that the arcing event was not the cause of the fire (see Photo 2 from Rob McGraw's supplemental report).

PHOTO 5
Shows Arcing on the Ground Wire of the 14-3 NM Electrical Cable

Examination and Analysis of Lightning Evidence and Damage

Photographs of the fireplace chimney cap clearly show evidence of a lightning strike. Careful examination of photos revealed that the current entered the cap over a span of several inches and created numerous small points of metal melting.

PHOTO 6 - Element Analytical Photo 372
Shows the Lighting Strike Points on the Chimney Cap

Photos of the radiant barrier foil directly below the chimney pipe flashing show evidence of a large amount of high-voltage electrical current flowing from the chimney flashing through roofing nails to the radiant barrier foil directly below. This evidence establishes that the radiant barrier foil was in fact energized by the lightning from the strike on the chimney cap.

PHOTO 7 - Element Analytical Photo 325
High Current Electrical Burning Around Nails Penetrating Through Chimney Flashing

Photos (such as PHOTO 8 below) show conclusive evidence of high current conduction between the radiant barrier foil and metal dryer vent pipe. Other photos show that lightning current continued through the dryer vent pipe into the dryer itself and ultimately out through the house wiring system to ground.

PHOTO 8 - Element Analytical Photo 361
Clear Evidence of Large Amounts of Lightning Current from the Radiant Barrier Foil into the Dryer Vent Pipe

PHOTO 9 - Element Analytical Photo 316
Clear Evidence of Electrical Arcing and Burning at Locations Between Roof Deck Sheathing Sheets Adjacent to the Fire Origin Area

Photos (such as PHOTO 9) show conclusive evidence of arcing at the joints between radiant barrier sheets along the path between the fireplace chimney and the dryer vent. Only one photo is shown above; however, the same pattern existed in many different locations along the current path. The localized blackening and soot deposits show that flames existed at this location.

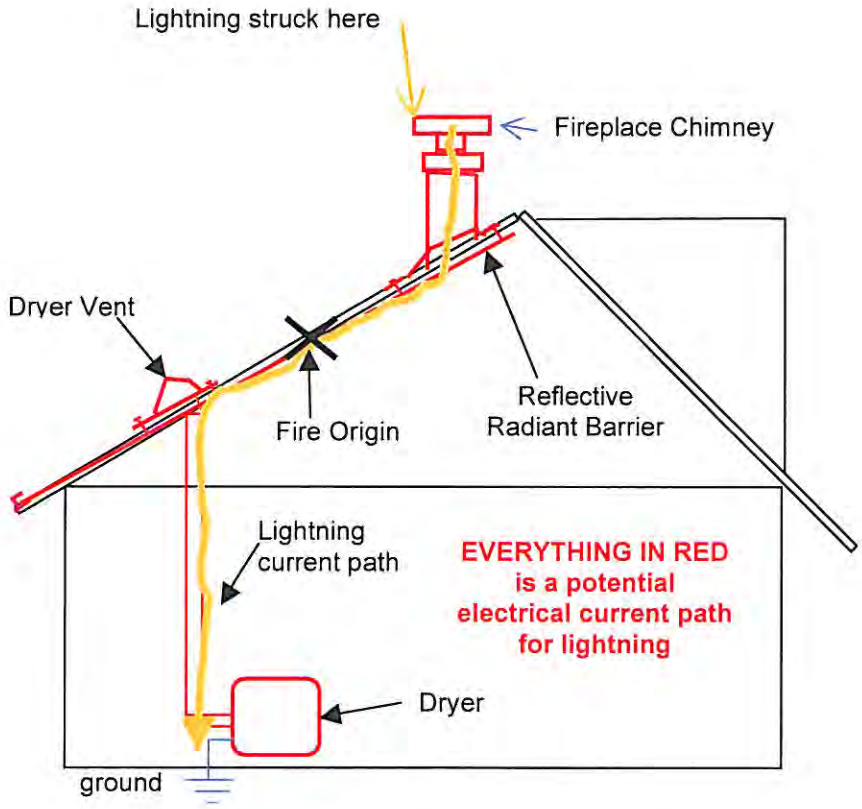


DIAGRAM 1 - Side View of the House
Lightning Current Path on Radiant Barrier to Ground

DIAGRAM 1 illustrates the roof's electrical environment present in the structure with the roof sheathing having radiant barrier glued to the underside. **Both the fireplace chimney and the dryer vent were electrically connected to the radiant barrier through nails**.

As the lightning current travelled from the strike point on the fireplace chimney to the ground connection through the dryer, it passed directly through the fire origin area. The path of the lightning is recorded by the arcing and burning at the joints between roof sheathing sheets along the path (see PHOTO 9 above). In the bottom paragraph on Page 3 of 10 of his report, Mr. Scardino acknowledges that on the attic side (bottom) of the RBS material, there were areas that exhibited "localized heat effects". The clearly visible "localized black soot" deposits seen in photos leave no doubt that combustion occurred in some of those locations and that the "heat effects" included combustion (burning). These patches of arcing and burning were observed in many locations along a general path between the chimney where the lightning strike occurred and the dryer vent pipe where the lightning current found a robust path to ground.

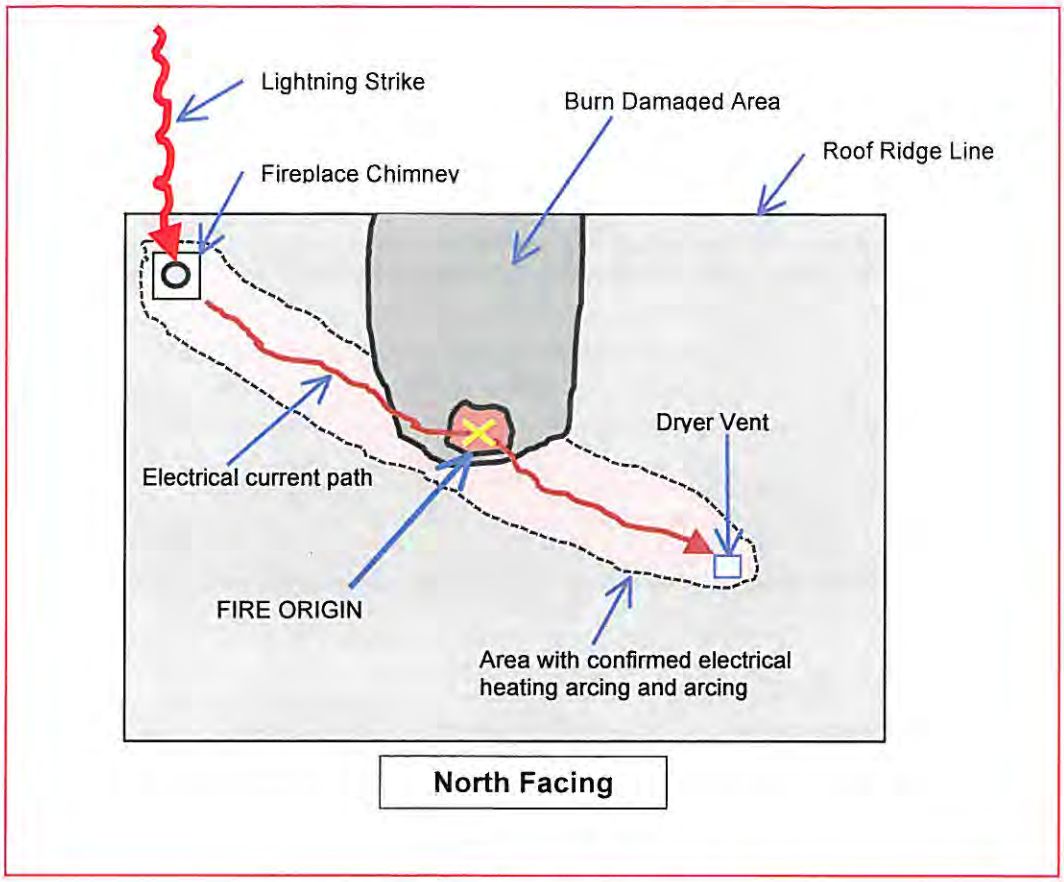


DIAGRAM 2 - Top View of North Roof
Lightning Current Path on Radiant Barrier Directly Through Fire Origin Area

Testing Performed

Many different tests of the physical, electrical, and thermal characteristics of reflective radiant barrier material (including Louisiana Pacific TechShield) have been performed in the McDowell Owens lab. Portions of this testing are documented on the McDowell Owens website and have been posted on the National Association of Fire Investigators website (a CD with photos and video of a small portion of this testing is included with this report). This testing has confirmed the sheet resistance of the radiant barrier sheathing material is such that when the current density in the material exceeds approximately 300 amps per square millimeter, resistive heating within the material generates temperatures higher than the ignition temperature of common materials such as paper, glue, and light plastics. As a result, when the current density exceeds this level, the paper and glue layers and other light combustibles in contact can easily ignite in flame. The testing has also demonstrated that when high voltage arcing occurs between roofing sheets with radiant barrier material, high current density levels are not required for ignition to occur because of the high temperatures generated by the arcing. If other light combustible materials (such as plastic vent channels) are nearby, the fire can quickly progress to a full attic fire.

Testing (such as that discussed above) demonstrates that radiant barrier product easily ignites when exposed to many different sources of electrical current. This testing also serves as proof that the

product will ignite when exposed to electrical sources of higher power levels. At a fundamental level, electricity from any source is the same as electricity from any other source once it is flowing through a conductor – just as heat flowing through a metal object is the same regardless of the source. There is very little difference in the fundamental heating effects of current from almost all different sources. The fundamental rules of electrical physics such as Ohm's Law and Kirchoff's Law apply the same to current from lightning as to current from any other source. Proof that a material can easily be ignited by a match is also poof that it can be ignited by a blow-torch. Higher levels of heat (or higher levels of current) simply cause the heating to occur more rapidly.

Summary of the Event

A lightning strike energized the fireplace chimney on the residence at 190 Cedar Valley Lane. Current from that strike travelled down through the chimney pipe, through metal flashing, through roofing nails, and onto the reflective radiant barrier material adhered to the underside of the roof sheathing. The current continued through the radiant barrier foil to the dryer vent pipe that penetrated the roof in the northwest quadrant. The current continued down the dryer vent pipe and eventually along a path to earth ground through the dryer electrical connections. The current moved along the path from one sheet of roofing material to the next by "arcing" or "jumping" across gaps where the foil was not in direct physical contact.

As the current moved along the path, the current density exceeded 300 amps per square millimeter at numerous locations. At some of the numerous high current locations, the radiant barrier material erupted in flame. At many of these locations, plastic vent channel material was in direct contact with the radiant barrier material. At the point of origin of the attic fire, the burning radiant barrier material ignited the vent channel and/or other light combustible material, which subsequently ignited the wood structures of the roof.

Of course, the easily consumed radiant barrier material that had been in the middle of the origin area and that initially burned and ignited other materials was no longer available after the fire since, by definition, "it burned". However, photos (such as PHOTO 9 above) clearly show that portions of the material immediately adjacent to the origin area had experienced burning with flame as a result of being electrically energized. We can be completely certain that the radiant barrier material in the origin area was also electrically energized. Therefore, we are certain that material in the origin area would have experienced burning with flame just as the locations immediately adjacent did. Finally, since no other possible source of ignition heat was identified in the origin area, we can be certain that the burning radiant barrier material provided the heat of ignition.

The Role of Lightning in the Taylor Fire

Lightning does cause structure fires and has done so throughout history. However, knowledge from recent field experience indicates that there have been more lighting involved structure fires in recent years because of new products being used in home construction. There are relatively new products that have been shown to present unique and unusually high levels of danger of fire when exposed to lightning. Corrugated Stainless Steel Tubing used for gas plumbing in building attics is such a product. The electrical and physical properties of the CSST are such that when energized by lightning, it can easily rupture and release flammable gas. In many CSST involved fires, it has been

determined that even though lightning was involved and provided the "energy" for ignition, the behavior of the CSST was the actual cause of the fire. The point is this: even though lightning is involved as a source of energy, it does not mean that the lightning (and only the lightning) is the cause of the fire.

When an electrical appliance has failed and caused a fire, the electricity from the utility company provided the ENERGY that ignited the fire, but we do not consider that the electricity or the utility company caused the fire. The electrical energy for ignition of the fire at the Taylor residence was supplied by lightning; however, that does not mean that lightning was the cause of the fire. The lightning energized the fireplace chimney, but the chimney did not cause the fire. The lightning energized roofing nails, but the nails did not cause the fire. The lightning energized the dryer vent and dryer, but neither the dryer vent nor the dryer caused the fire. The lightning energized the electrical ground system of the house, but the electrical ground system did not cause the fire. The only place along the path of the lightning that evidence of fire ignition was observed was on the radiant barrier material and the evidence was observed in SEVERAL places on that material. Clearly, it was the behavior of the radiant barrier material (when energized by electricity) that caused the fire. The lightning only provided the energy just as utility company electricity provides the energy in most electrical fires.

Metal components (including aluminum) as a part of building materials are common and it is not uncommon for these items to become energized when lightning strikes a building. However, most metal components are not as "thin" and as easily ignited as the aluminum on radiant barrier sheathing and no other metal components are installed to completely cover the underside of the roof deck where lightning is very likely to strike.

The Role of Radiant Barrier Material in the Fire

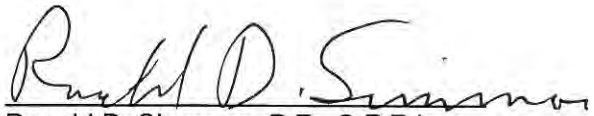
A review of the roles of the radiant barrier material in this case is as follows. First, because the material is highly conductive, the material conducted the electrical energy to the point of fire origin. Second, as a result of the "resistive" property, the material generated the heat of ignition through resistive heating at numerous locations. Third, because glue, paper, and very thin aluminum are easily ignited, the radiant barrier served as the first ignited material (once adequately heated). Photos from the Taylor house show locations of burning all along the path of the lightning current. Finally, the burning radiant barrier material in the origin area ignited other nearby light combustible materials. When all of these behaviors of the material are considered together (along with the fact that no other possible source of ignition was found in the origin area), it is clear that the radiant barrier material caused this fire. Without the presence and behavior of the radiant barrier material, this fire would not have occurred. Reports and articles previously published by McDowell Owens as well as photos and videos in a PowerPoint file attached to this report clearly show how easily this material is ignited by electrical current.

Conclusion

Based on our experience, training, and examination of available evidence, it is the opinion of McDowell Owens Engineering, Inc. that this fire was the direct result of electrical over-heating and ignition of the reflective radiant barrier material on the underside of the roof sheathing. Photos from

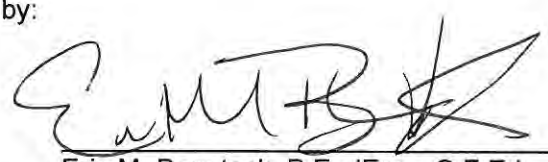
the fire scene clearly show burning on the radiant barrier material on both sides of the origin area that was on the path of lightning current between the strike point and the connection to ground. No other viable source of ignition heat was found in the origin area. Therefore, the only possible source of ignition heat was the burning radiant barrier material. We conclude (to a reasonable degree of engineering certainty) this fire was caused by the hazardous properties and hazardous behavior of the reflective radiant barrier material when it was energized by the electrical current from the lightning and subsequently, became the first ignited material.

Prepared by: McDOWELL OWENS ENGINEERING, INC.
Texas Registration Number F-341



Ronald D. Simmons, P.E., C.F.E.I.
Electrical Engineer
California License Number 13488

Reviewed by:



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RDS:amb

In The Matter Of:

State Farm, et al v.
Louisiana Pacific Corporation

Ronald D. Simmons
November 30, 2012

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION

STATE FARM AND CASUALTY COMPANY as subrogee of CHRISTOPHER TAYLOR, Plaintiffs,
vs.) CASE NO. 5:12-cv-289-BO
LOUISIANA PACIFIC CORPORATION, Defendant.

ORAL VIDEOTAPED DEPOSITION OF

RONALD D. SIMMONS

November 30, 2012

ORAL VIDEOTAPED DEPOSITION OF RONALD D. SIMMONS, produced as a witness at the instance of the Defendant and duly sworn, was taken in the above-styled and numbered cause on the 30th day of November, 2012, from 9:00 a.m. to 5:46 p.m., before Laurie Carlisle, Certified Shorthand Reporter in and for the State of Texas, reported by computerized machine shorthand at the offices of Vinson & Elkins, LLP, 1001 Fannin Street, Suite 2500, Houston, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto.

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ALSO PRESENT:

Mr. Mark Goodson
Mr. Dennis J. Scardino (by telephone)
Mr. Nick D'Angelo, Videographer

INDEX

EXHIBITS

EXHIBITS (cont.)

Page 5

THE VIDEOGRAPHER: Today is November 30, 2012. Going on the record at 9:00 a.m. Beginning the deposition with tape 1 of Ronald Simmons.

MR. ELLIS: Why don't we start by making introductions? I'm Neal Ellis, and I'm here for LP.

MR. MURPHY: George Murphy on behalf of LP.

MR. GOODSON: Mark Goodson, LP.

MR. MURPHY: We have Dennis Scardino, who's also on the line here.

MS. MACLEOD: I'm Skye MacLeod, on behalf of the plaintiff State Farm Fire & Casualty Company, a subrogee of Christopher Taylor.

THE WITNESS: I'm Ron Simmons, an engineer with McDowell Owens.

RONALD D. SIMMONS,
EXAMINATION

BY MR. ELLIS:

Q. Mr. Simmons, would you state your full name, please.

A. Ronald Dewayne Simmons.

Q. Where do you live, sir?

A. Where do I live?

Page 6

Q. Right.

A. I live in Kingwood, Texas.

Q. What's your residence address there?

A. You know, I just moved my residence, so I can't tell you. My permanent address is in Center Point, Texas, the mailing address is Center Point, Texas.

Q. What's your mailing address?

A. Mailing address is 105 Elm Pass Road in Center Point, Texas.

Q. But you don't have a residence that you presently live in?

A. Yes, I have a home and properties in -- near Kerrville, but I -- most of the time I reside here.

Q. If we had to serve a subpoena on you, where would we do that?

A. At the office or at the 105 Elm Pass.

Q. I'm sorry, say that again.

A. At our office in Kingwood, Texas or at 105 Elm Pass Road.

Q. 105 Elm Pass Road?

A. Yes.

Q. You've been designated to testify as an expert in this case on behalf of the plaintiff. Is

Page 7

that correct?

A. That's correct.

Q. And if you would, please, tell me what opinions you're prepared to give in connection with this lawsuit.

A. I'm prepared to give opinions concerning the source of the heat that caused the ignition of this fire, the first material ignited and a number of electrical events that were involved in the ignition of the fire.

Q. And that's it?

A. Undoubtedly we will talk about the involvement of certain products and construction materials.

Q. I know we'll talk about the involvement of a number of things, but can you tell me if you have any other opinions that you're prepared to give in connection with this case?

A. I will give opinions about certain construction materials and their involvement in the case.

Q. First one you mentioned was the source of heat that caused the fire. What is your opinion as to that?

A. The source of the heat -- I'm going to try

Page 8

to not get too technical, but it was resistive heating in a metal product that was -- resistive heating that results when electrical current flows through a conductor.

Q. All right. The source of the heat that caused the fire, then, was resistive heating and a metal product. Do you know what metal product it was?

A. Yes.

Q. What metal product is it that you're going to give an opinion about?

A. It's the metal on the radiant barrier sheeting that formed the roof deck of this structure.

Q. That formed the roof deck of what?

A. Of the structure, the house.

Q. Structure. All right. The second opinion that you said you were going to give is as to the first material ignited. Is that correct?

A. Yes.

Q. What is the opinion that you're going to give with respect to that?

A. The first material ignited was a lamination, which included the metal, that was attached to the underside of the radiant barrier sheeting that formed the roof deck.

Page 9

Q. Anything else with respect to the second opinion?
A. I will necessarily provide opinions about how the current -- the electrical current arrived at the point that it did.
Q. What's the lamination that you're referring to?
A. It's -- I called it a sandwich of paper and glue and aluminum foil.
Q. All right. You said you were going to testify and give opinions about a number of different electrical events in connection with this fire at the Taylor home. Is that right?
A. Yes.
Q. Tell me what opinions you're going to give with respect to that.
A. The original source of the electrical current was lightning. The lightning impinged on or struck a particular location on this structure and then it then continued along a certain path, seeking a path to ground, which it did find, and then ultimately it continued on to ground, which lightning strikes always do.
Q. You're not being very specific, though, as you're giving us these opinions, so I need to ask you

Page 10

some followup questions about the scope of your opinion here.
A. Okay.
Q. You indicated that with respect to the third opinion that you're going to give, that the lightning struck a location on the house. What location did it strike?
A. It struck on the fireplace chimney.
Q. And you said it followed a certain path. Is that right?
A. It actually followed many paths, but we're concerned about one particular path.
Q. What is the one particular path that you're referring to?
A. The path that took the current through the origin area of this fire.
Q. On its way to ground?
A. Yes.
Q. All right.
A. On its way to a ground.
Q. You just said that the lightning took many paths. Is that correct?
A. Yes.
Q. What were the other paths that it took?
A. It's not possible to identify all of them.

Page 11

We know that at least one of them went to a ground wire on a piece of nonmetallic sheath of cable.
Q. Any others that you're prepared to identify at this point?
A. Well, when a voltage such as lightning energizes a conductive plane, it energizes every square inch of it. So it -- at least some amount of current went an uncountable number of directions in all directions.
Q. You indicated that your fourth opinion would be with respect to construction materials that were involved with respect to this incident. Is that right?
A. Yes.
Q. What are the opinions that you're planning on giving with respect to the construction materials involved?
A. These opinions will involve the characteristics of this material that cause it to generate heat when electrical current flows through it.
Q. Again, you're not being very specific. What is this material?
A. This material is the aluminum metal that was laminated to the bottom of the radiant barrier

Page 12

sheathing.
Q. And you said you're going to give an opinion with respect to the aluminum metal, then, that was attached to this laminate that caused it to generate the heat. What's the specific opinion that you're planning on giving?
A. That the material as constructed includes certain characteristics that cause it to readily generate heat. No. 1, readily generate heat when conduct -- when it is conducting electrical current. And No. 2, to readily ignite when exposed to that heat or when that heat is present.
Q. What are the characteristics that you're referring to?
A. Conductivity, resistivity, an ignition temperature lower than the melting temperature of the metal. There are, of course, details -- engineering details involved with each of those that would take far too long to enumerate.
Q. Why would it take too long to enumerate?
A. Well, I'd be happy to do that, but it would take several hours at least to -- at this point. I'm sure we will get into it later.
Q. You prepared a report in this case dated August 29, 2012. Is that correct?

Page 13

A. Yes.
Q. Let's mark this as No. 37.
(Exhibit 37 marked)
A. If I may, sir, your last name again?
Q. Ellis.
A. Mr. Ellis. I apologize.
Q. That's all right.
A. I was attempting to enumerate the opinions that I'm going to offer. Of course, anything that's in my report is part of my opinion.
Q. Well, what's in your report is not all opinions, is it?
A. It's not, but any opinion in my report is part of my opinion.
Q. Tell me about any other opinion that you're prepared to give now.
A. Okay. I'm going to need to refer to my report. The point is that in this discussion, I definitely do not intend to exclude any opinion that's in my report.
Q. I'll tell you what, Mr. Simmons, let's do it this way. I'm going to be going through your report, all right, with you in some detail. If there is -- as we go through this, if there is something in your report that is not just supporting material for

Page 14

an opinion but actually an opinion that you expect to give, would you let us know as we go along?
A. I will. And if there's something that you don't happen to cover that falls into that category, I will also let you know.
Q. That's fair. Is this an expert report that you prepared dated August 29, 2012?
A. It appears to be.
Q. And I know you've got a supplemental report as well that we'll touch on in just a few minutes. But this is the first report that you gave in connection with this case. Is that right?
A. It appears to be.
Q. All right, sir. If you would, turn to the last four or five pages where your resume appears.
A. Mr. Ellis, I need to let you know that what you have here is not exactly the same as what was printed off by my staff yesterday.
Q. Are you talking about the resume material?
A. Yeah, it may just be formatting, but it caught my eye that it appears different.
Q. Does it appear substantively different in any way?
A. I'll scan it to try to make sure. I think it's just formatting. I think it's just the number

Page 15

of spaces that was allowed.
Q. Mr. Simmons, let me ask you: Are you looking at a new version of your resume here?
A. Yes, sir -- well, it's one that was just printed yesterday. Periodically the staff updates these, and I think I know why --
MS. MACLEOD: Why don't we just agree that we can make a copy of that -- of the --
MR. ELLIS: Yeah.
A. Well, I brought this copy to provide to you, actually. I think what it is is since that time, we were at ISFI and made presentation and I think that's what they have --
Q. Did you say you brought the copy that's in your right hand there for me?
A. Yes. This is a -- this is a copy of all this same material that I brought for you.
Q. Thank you.
A. You're welcome to it. I apologize. It never occurred to me that they would have updated that. Now I know why they did. We were at ISFI and made a presentation.
Q. All right. At a break what we'll do is we'll make a copy of this, we'll make this a separate exhibit.

Page 16

A. Fine.
Q. If it's all right with you.
A. I apologize. It didn't occur to me before that that one would be different than this.
Q. All right. The resume, which is here in your original report, is headed with the McDowell Owens logo at the top. Is that correct?
A. Yes.
Q. Is that your present employer?
A. Yes.
Q. This indicates that you're a PE, which stands for what?
A. Professional engineer.
Q. And where are you licensed as a professional engineer?
A. Arkansas and California.
Q. And when did you obtain your licenses in Arkansas and California?
A. Oh, California was in the late '80s. And in Arkansas it was just last year.
Q. Sorry, you said late 1980s in California?
A. Yes, sir.
Q. And in Arkansas last year, which would be 2011?
A. It may have even been 2012. Actually, I

Page 17

think it was after the first of the year, so 2012.
Q. And this also indicates that you have a CFEI certification. Is that correct?
A. Yes.
Q. What does that stand for, sir?
A. Certified fire and explosion investigator.
Q. And how long have you held that certification?
A. Four years, I believe.
Q. Since 2008?
A. I believe it was 2008. Sorry, I'd have to look.
Q. Could it be later than 2008?
A. Not much. But it could be 2009. Could be early part of 2009.
Q. Just below your name there, you'll see a list of items that says: Electrical and electromechanical systems, vehicles and heavy equipment, electronic control systems, high frequency systems and semiconductor devices. Do you see that?
A. Yes.
Q. What are those items that are listed there and why are they listed there?
A. Those are items that the company puts there just as eye catchers. They're really a -- for

Page 18

prospective customers, when they -- a lot of times people don't want to read beyond the first page of something and it's to catch their -- this is unique and specific things that I investigate or that I cover.
Q. That you -- I'm sorry?
A. Areas that I can provide expertise.
Q. You're presently employed with McDowell Owens Engineering. Is that correct?
A. Yes.
Q. What's the nature of the business of McDowell Owens?
A. They're called an integrated forensic engineering company.
Q. What does it mean to be a forensic engineering company?
A. It means that we provide expertise in the investigation of accidents, fires, explosions, engineering expertise in those areas.
Q. And to be forensic, does that mean that you're involved in lawsuits?
A. Often, yes. Not necessarily. I mean, the -- I know that the term "forensic" has legal connotation, but that's not all we do.
Q. All right. What size company is McDowell

Page 19

Owens? How many employees does it have?
A. I'm going to say 15 right now. It varies.
Q. How many professional engineers are employed at McDowell Owens?
A. Less than 12, but I don't have an exact number.
Q. How many like you are involved with fire investigation?
A. Most. There are probably only two that do not get involved with it at some point.
Q. Now let's take a look at the item which is marked: 2008 to present, McDowell Owens Engineering, Kingwood, Texas. Do you see that, sir?
A. Yes.
Q. This says: Consulting engineer. Areas of expertise include residential electrical systems, electromechanical systems, complex electronic systems, vehicles and heavy equipment. Primary responsibilities include site and evidence investigations, evidence collection and preservation, engineering analysis of system and component failures. Is that correct?
A. Yes.
Q. In your area of expertise relating to residential electrical systems, what do you do?

Page 20

A. I evaluate residential electrical systems. I troubleshoot them. I investigate fires or accidents involving them.
Q. By an electrical system, are you referring to an electrical system in a residential structure?
A. Yes, in this case.
Q. All right. And what do you mean by "electrical system" in a structure like a home?
A. Primarily the fixed wiring system. That means all the wiring in the house.
Q. All right. "Electromechanical systems" is listed here. What does that mean you do?
A. That's mostly machines.
Q. What kind of machines?
A. Any kind of machine that involves electromechanical components.
Q. You also have "complex electronic systems." What does that mean?
A. Means complex electronic systems. Again, it's no subcategory. Any complex electronic system.
Q. What does that mean, sir? I'm just a lawyer. I'm not an electrical engineer. Tell me what you mean by that.
A. A laptop, a television, a transmission station, anything that involves electronics.

Page 21

Q. You also have here "vehicles and heavy equipment." What does that mean, sir?
A. Construction equipment, trucks, tractors.
Q. So you work with the electrical systems of vehicles and heavy equipment, or do you deal with them in some other way?
A. Primarily the electrical systems but also other aspects. I may -- I have a commercial license. I've owned trucking companies, and I've owned a lot of equipment. So I'm an experienced operator of a number of pieces of equipment, so I can address proper operation and safety procedures.
Q. So being a commercial operator, you drive heavy trucks?
A. I don't now, but I have, yes.
Q. You have in the past. All right. You say here: Primary responsibilities include site and evidence investigations. Is that correct?
A. What it -- that's what it says.
Q. Well, do you actually do something different than what it says?
A. These days I do -- that's not what I spend most of my time doing, so it depends how you interpret "primary."
Q. How much time do you actually spend doing

Page 22

site and evidence investigations?
A. Less than 50 percent of my time.
Q. Less than 50?
A. Yes.
Q. And how would you say you spend most of your time?
A. Analyzing electrical systems and electrical anomalies or electromechanical. More engineering analysis than site investigation.
Q. When you said less than 50 percent, what percentage less than 50 percent would you say you devote to site and evidence investigations?
A. I can't slice it any finer. It varies from month to month, and so it's -- I couldn't be more precise than that.
Q. This also says you do evidence collection and preservation. Is that correct?
A. Yes.
Q. Again, would that be one of those things that you're not spending all that much time on anymore?
A. Yes.
Q. Do you know about how much time you spend in the area of evidence collection and preservation?
A. Less than 10 percent.

Page 23

Q. The last item here is: Engineering analysis of system and component failures. Do you see that?
A. Yes.
Q. And how much time do you spend doing that?
A. Again, less than 50 percent but more than 20 percent.
Q. Can you tell us what that means? What's "engineering analysis of system and component failures" mean?
A. If we get a case involving a piece of equipment that a failure has occurred and always when a failure has occurred, we want to know what caused the failure, and so I will review all the documentation, all of the history of the event, perform an analysis.
Q. Your resume says in 2007 you were employed by Texas Instruments in Richardson, Texas. Is that right?
A. Yes.
Q. And while there, you worked as a consulting engineer where you developed required hardware and software systems and executed testing to characterize performance envelope of embedded semiconductor devices. Does that accurately describe what you did

Page 24

at Texas Instruments?
A. In general terms, yes.
Q. Were you doing anything else?
A. No. In general terms, no.
Q. While you were with Texas Instruments, were you involved in any way in conducting fire investigations?
A. No.
Q. Were you involved in any way in determining fire causation?
A. No.
Q. Were you involved in any way in determining fire origin?
A. No.
Q. Did any of your work at Texas Instrument include the study of lightning?
A. No.
Q. Did any of your work at Texas Instruments include work or study of radiant barrier systems?
A. No.
Q. 2005 to 2007, you were employed by Elm Point Properties, LLC in Center Point, Texas. Is that right?
A. Yes.
Q. And this says here that during that period

Page 25

of time, those two to three years, you were a real estate developer and builder. Is that right?
A. That's correct.
Q. And what you did was to purchase and improve raw land, then design, construct and sell homes and small commercial buildings. Is that right?
A. Yes.
Q. All right. Did any of that work involve fire investigation, fire causation, determination of fire origin, study of lightning or study of radiant barrier systems?
A. Minor study of radiant barrier systems. Any new construction material I attempted to be aware of.
Q. So as to radiant barrier systems, did you become familiar with them while you were a real estate builder/developer?
A. To a first order.
Q. I'm sorry, what does "to a first order" mean?
A. Only to the point that I was aware of what was available and what the current usage -- uses were for the newer products.
Q. While you were a builder, did you specify radiant barrier sheathing for any of the builders --

Page 26

structures that you built?
A. In a room where a commercial freezer was installed I did.
Q. So you have specified it?
A. Yes, at that time in the walls of this room.
Q. Was it just one occasion or many occasions?
A. Oh, just one.
Q. But you selected a radiant barrier system for installation?
A. The -- yeah, the aluminum was used in addition to the normal wall structure, a rolled aluminum product.
Q. Whose product was it?
A. You know, I don't -- I don't remember. It was a -- you'd buy it in a roll and you'd roll it out.
Q. Just to make clear, though, for this period of time, 2005 to 2007, taking out of it your knowledge of radiant barriers, you did not work on fire investigation, fire causation, fire origin, study of lightning or radiant barrier systems except to the extent that you became knowledgeable of it and specified it for one of the buildings that you built?
A. Yeah, one specific room in one of the

Page 27

buildings.
Q. Was my statement correct?
A. I believe it was correct, but it wasn't complete.
Q. Complete in the sense that we were talking about one building where you specified radiant barrier?
A. One particular room in one.
Q. This also indicates during the period of time 2005 to 2007, you were owner/operator of a company called RA Simmons Transport in Center Point, Texas. Is that right?
A. Yes.
Q. What was the nature of the business of RA Simmons Transport?
A. It was a small trucking company. It really was my son's company. I was just the financier mostly.
Q. Did you drive trucks for the company?
A. I did some.
Q. What kind of trucks were you driving?
A. These are over-the-road long-haul -- the specific one that I drove was a Volvo -- 2008 Volvo VN780.
Q. Did you make long hauls for your son's

Page 28

company?
A. I did.
Q. How frequently did you do that during 2005 to 2007?
A. I did it over a period of several months, and during that period I did it continually.
Q. And would it be fair to say that in connection with your work with RA Simmons Transport, you were not involved with fire investigation, fire causation, fire origin, study of lightning or radiant barrier systems?
A. Yes.
Q. From 1990 to 2005, you worked with Intel Corporation in Folsom, California. Is that correct?
A. Yes.
Q. Served as a quality and reliability manager. Would that be right?
A. Yes.
Q. During that period of time, you were responsible for all aspects, validating, testing, measuring, monitoring and guaranteeing the quality and reliability of the Intel products. This included operating and managing several state-of-the-art testing and failure analysis laboratories. Is that correct?

Page 29

A. Yes.
Q. And would it be fair to say that during the period of time that you operated as a quality and reliability manager, you were not involved with fire investigation, fire causation, fire origin, the study of lightning or radiant barrier systems?
A. Not completely.
Q. Okay. Tell me in what way that's not correct.
A. As the Q&R manager, any product failures or product-involved failures, we -- my department would become involved in. And there were fires where our product was -- was in the vicinity, we'll put it that way. And so we did some -- we did a lot of failure analysis and some involved fires.
Q. Did you investigate the fires yourself?
A. Some I did.
Q. I'm sorry?
A. Some I did. Not all by myself. I had a staff of engineers. But I was directly involved in some of those.
Q. Were you determining fire origin and fire causation?
A. In some cases, yes.
Q. And did any of those fires involve

Page 30

lightning?
A. I don't recall that any did.
Q. You don't know of any that did involve lightning?
A. I don't recall any that did.
Q. What does it mean to be a quality and reliability manager?
A. Well, "manager" is pretty generic. It means I had teams of engineers and people -- I had a department. And "quality and reliability" is -- in any -- within any corporation today that provides products, they will have a quality and reliability organization and that's the organization that is charged with overseeing and ensuring that the products meet standards, specifications that are published, that are safe, that are reliable.
Q. All right. So that would be your primary thrust, then, as a quality and reliability manager, to try and ensure the quality of your product and make sure that it met standards of reliability?
A. That it met standards of quality, performance, reliability, safety, all of those expected qualities of a product.
Q. And the types of products that you were involved with at Intel were what?

Page 31

A. Primarily semiconductor devices but also board level products.
Q. What do you mean by a "board level product"?
A. All semiconductor devices wind up being attached to some sort of a circuit board, whether it's a mother board of a computer, a laptop or a server system. Many, many, many board level products.
Q. During the 15 years that you were at Intel, you also served as a test engineer manager. Is that correct?
A. Yes.
Q. And did any of that work involve fire investigation, fire causation, fire origin, study of lightning or study of radiant barrier systems?
A. Not that I recall.
Q. You also served as SEMATECH research engineer while employed with Intel. Is that correct?
A. Yes.
Q. Is -- are your job functions listed there on your resume?
A. I'm sorry?
Q. Are your job functions listed there on your resume next to SEMATECH engineer?

Page 32

A. Some of them are, yes.
Q. Did any of that work while you were at Intel Corporation involve fire investigation, fire causation, fire origin, study of lightning or study of radiant barrier systems?
A. Only somewhat. One of the projects that we had that we were working with Sandia National Labs involved static damage and this sort of thing, and lightning was one of the contributors that was considered and analyzed in all that. But not -- only indirectly, I would say.
Q. Only indirectly?
A. Yes.
Q. And by "indirectly," what does that mean?
A. Lightning was one of many sources of damage to our products that were being analyzed in a project that we were working together with Sandia on.
Q. One of many?
A. Yes.
Q. This also indicates that you were senior product development engineer while at Intel. Is that correct?
A. Yes.
Q. And your job functions are listed there in your resume next to the title "senior product

Page 33

development engineer." Is that right?
A. Yes.
Q. Did any of that work involve fire investigation, fire causation, fire origin, study of lightning or radiant barrier systems?
A. Not that I recall.
Q. Your resume also indicates that from 1990 to 2005, you were owner and operator of Canyon Rim Ranch in El Dorado, California. Is that right?
A. Yes.
Q. What you were involved with as owner and operator of Canyon Rim Ranch was beef cattle and wine grape production operation. Is that right?
A. Yes.
Q. Were you actually producing wine for consumption?
A. Yes.
Q. Do you still have any interest in the wine operation?
A. I still own some equipment that hasn't been paid for. No, not directly.
Q. Did any of your work as an owner operator of Canyon Rim Ranch involve fire investigation, fire causation, fire origin, study of lightning or study of radiant barrier systems?

Page 34

A. I had one lightning-caused fire on my ranch.
Q. What happened?
A. Lightning struck a bull pine tree, and it was a small fire.
Q. So lightning struck a tree and a fire resulted?
A. That's what it appeared, yes.
Q. Was the fire limited to the tree, or did it spread?
A. Just the immediate vicinity. Some dried grass and...
Q. Was that your first experience with a lightning strike on your own property?
A. On my own property, yes.
Q. Have you had any other experiences with lightning strikes on your own property?
A. Not on my own property.
Q. From 1980 to 1990, you worked as lead equipment development engineer with Pacific Western Systems of Redding, California. Is that right?
A. Yes.
Q. And during those ten years, you were team leader for the definition, design and development of large-scale electromechanical and electronic systems.

Page 35

Is that right?
A. Yes.
Q. And what the systems involved was state-of-the-art material handling machinery and high-speed digital and analog electronic systems. Is that right?
A. Yes.
Q. Did any of that work involve fire investigation, fire causation, fire origin, study of lightning or study of radiant barrier systems?
A. Yes.
Q. In what way?
A. We had a couple of fires through the years in pieces of our equipment.
Q. Were any of those lightning-induced fires?
A. I don't believe so.
Q. Do you know?
A. I had no indication that it was lightning induced at that time.
Q. Your resume says that before 1980, while a student, you worked as electromechanical technician for Hughes Aircraft and National Semiconductor. Is that right?
A. Yes.
Q. How long a period of time before 1980 are

Page 36

we talking about?
A. Six years.
Q. Your resume says that from 1968 to '74, you served in the United States Navy. Would that be correct?
A. Yes.
Q. So from '74, then, up until about 1980, you were a student and while you were a student, you worked as a technician for Hughes Aircraft and National Semiconductor?
A. Yes.
Q. During that six-year period of time from '74 to 1980, did any of your work involve fire investigation, fire causation, fire origin, study of lightning or study of radiant barrier systems?
A. I was part of a fire team at Hughes Aircraft, fire department team. But I would say no.
Q. I'm sorry?
A. I will say no.
Q. When you say you were part of a fire team, does that mean somebody that would respond to fires?
A. Yes.
Q. Did you have -- ever have to respond to a lightning-induced fire while employed at Hughes or National Semiconductor?

Page 37

A. I responded to a fire, but it was never determined what the cause was. There was a lot of lightning in that area.
Q. There was a lot of lightning in the area at the time of the fire?
A. Yes. Hughes owned a large part of land at this facility -- large plot of land that was out in a desert, and the desert in southern Arizona, sometimes they have a lot of lightning, like most of the southern United States. And yeah, there was a lot of lightning, but there was no way we could determine what the fire was, or we didn't, what the cause of the fire was.
Q. Are you saying you were not able to determine whether or not it was a lightning-induced fire?
A. We did not determine. It could well have been, but we didn't determine it.
Q. Where did it strike if it -- where was the fire?
A. We never identified a strike point. It was just a fire and it was during a lightning storm and so... that's it.
Q. 1968 to 1974, you served in the U.S. Navy. Is that correct?

Page 38

A. Yes.
Q. And what was your grade or rank?
A. Well, it changes. I was discharged as an E5.
Q. Honorably discharged, sir?
A. Yes.
Q. Did you serve in the Vietnam era?
A. Yes.
Q. In the theater?
A. Yes. We -- in naval air in this type of a squadron, we weren't based in Vietnam, but we were based at Subic Bay and we went by detachment up to Cameron Bay.
Q. You'll see next listed on your resume "Education." Do you see that, sir?
A. Yes.
Q. You attended the colleges that are listed here during the time periods listed here. Is that right?
A. I believe so.
Q. This says at the University of Phoenix, you were pursuing an MBA from 1995 to 1996. Is that correct?
A. Yes.
Q. Did you obtain your MBA?

Page 39

A. No.
Q. This says that you worked -- or you were at the University of California Davis studying viticulture and enology. Is that right?
A. That's growing grapes and making wine.
Q. Okay. That was 1991 to 1993, right?
A. Yes.
Q. You were at Cal State, Chico, California studying electrical engineering during the years that are indicated there. Is that right?
A. Yes.
Q. 1967 to '68, 1974 to '75. Is that right?
A. Yes.
Q. And you were at Pima College, Tucson, Arizona, you studied electrical engineering there from '72 to '73. Is that right?
A. Yes.
Q. Where did you obtain your degree?
A. I did not obtain a degree.
Q. So you have no Bachelor's degree?
A. Correct.
Q. You studied at Cal State Polytechnic University at San Luis Obispo, California from 1965 to '66. Is that right?
A. Yes.

Page 40

Q. And you didn't obtain a degree there either?
A. No, I did not.
Q. The next item on your resume is continuing education. Is that right?
A. Yes.
Q. Are those all the courses you've attended for continuing education? Is that what's listed here?
A. These are courses that are pertinent to the work that I do, yes.
Q. Is that right?
All right. First one there is National Association of Fire Investigators, fire and explosion training program, 2009. Is that right?
A. Yes.
Q. Is that what led to your certification as a CFEI?
A. Yes.
Q. So does this refresh your recollection, then, that you obtained your certification as a CFEI in 2009 rather than 2008?
A. Yes, coming -- I don't recall the exact date, but it says '9 here, so I'm sure that's correct.

Page 41

Q. What was the length of training that you received for the CFEI certification?
A. This was a one-week syllabus.
Q. One-week syllabus?
A. As I recall. It was over a one-week period.
Q. Did you attend in person?
A. Yes.
Q. About how many hours was it?
A. I don't recall.
Q. But it was one week long?
A. Yes.
Q. Do you need to do anything to maintain your certification as a CFEI?
A. You know, I have so many things that you have to have continuing education for. Right now I don't actually recall if I reported any of those to the NAFI to maintain it.
Q. All right. On the next page, page 3 of your resume, you indicate professional memberships held. Do you see that, sir?
A. Yes.
Q. You're a member of the National Association of Fire Investigators, NAFI. Is that right?
A. Yes.

Page 42

Q. Any there requirements that you have to fulfill in order to become a member of NAFI?
A. There are requirements you have to fulfill in order to become certified by NAFI, but just to be a member, I honestly don't remember.
Q. You don't know of any requirements?
A. I don't recall any.
Q. All right. You're a member of the California Society of Professional Engineers. Is that right?
A. Yes.
Q. Did you have to fulfill any requirements to become a member of that organization?
A. You have to be a California licensed professional engineer.
Q. Are there any requirements that you need to maintain membership in the society?
A. Pay money.
Q. Do you hold a leadership position in the society?
A. No.
Q. Next one is the National Society of Professional Engineers. Were there any requirements necessary in order to become a member of that group?
A. Just be a licensed professional engineer in the United States.
Q. I take it there aren't any requirements that you need to fulfill in order to maintain membership in the society. Is that right?
A. No, not that I'm aware of.
Q. Are you a leadership -- do you hold a leadership position in that society?
A. No.
Q. Then you've got IEEE here. Is that right?
A. Yes.
Q. You're a member of that organization?
A. Yes.
Q. Again, no particular requirements for membership, right?
A. I believe there were some for IEEE, but I don't -- I've been a member for so long, I don't remember.
Q. Semiconductor Industry's Association, you're a member of that organization?
A. I'm no longer a member of that organization. These are organizations that I was a member of for many, many years, the Semiconductor.
Q. Where it says "professional memberships held," this also includes associations that you're no longer a member of?

Page 43

Page 44

A. Those last two are, yes.
Q. So the Semiconductor Industry's Association and Semiconductor Equipment and Materials Institute, you're no longer a member of?
A. Correct.
Q. The next item is registration, license and certificate. Do you see that, sir?
A. Yes.
Q. The first one there is your California professional engineer license. Is that right?
A. Yes.
Q. You still maintain that license?
A. Yes.
Q. The next one is your CFEI certification. Is that right?
A. Yes.
Q. And you still maintain that certification?
A. Yes.
Q. You also have here FCC first-class radio engineer's license. Is that right?
A. Yes.
Q. Is that one you still maintain?
A. That's one that once you earned it, you didn't have to do anything to maintain it. I'm not even sure if they still -- if they still provide

Page 45

this, the FCC. As far as I know, what I have is still valid.
Q. The next one is certified calibration technician at Hughes Aircraft in 1972. Would that be a license or certification that you still hold?
A. It's not one that ever expires and so since I no longer work at Hughes, I assume it's not valid.
Q. Here you have certified solder technician, National Semiconductor in 1974. Is that right?
A. Yes.
Q. Is that one that's still valid?
A. It's something that never expired but again, since I'm no longer employed there, I assume it's no longer valid.
Q. The last one you have is Class A commercial driver's license. Is that still valid?
A. Yes.
Q. Are you still driving commercial vehicles like trucks from time to time?
A. Only when I have to.
Q. Publications, on this one you've got a special report entitled "Reflective Radiant Barriers" published in Fire Findings in 2009. Is that right?
A. Yes.
Q. Was that a peer reviewed report, sir?

Page 46

A. Yes.
Q. Who reviewed it?
A. Several engineers at our firm.
Q. So it was reviewed within your firm?
A. Reviewed within the firm and it was reviewed by the staff at Fire Findings before they accepted it for publication.
Q. Do you understand what I mean by "peer reviewed"? Do you know what "peer reviewed" means?
A. I'm not sure that you don't have a more specific definition than what I use.
Q. Well, what you're saying satisfies the requirement of peer review is having it reviewed by members of your own firm and by people on the editorial staff at the publication itself, correct?
A. Well, it's also been reviewed by everyone who's worked for the publication.
Q. What I mean is prior to publication. Other professional engineers from outside your firm that could review it, critique it, offer comments and determine whether or not it was the kind of thing worthy of publication in a professional journal.
A. To my knowledge -- I'm not aware of any organization that provides that service. The -- so the staff of engineers that we have within our firm

Page 47

and the staff at the publication who are fire professionals, to me if -- that's the most peer review that we had available.
Q. All right. You never sought peer review outside of the channel of review within your firm or by the editorial staff of the publication itself. Is that correct?
A. I'm sorry. Ask that again, Mr. Ellis.
Q. You never sought review of this article that was later published in Fire Findings by anyone other than the members of the staff at McDowell Owens or the members of the editorial board staff at Fire Findings?
A. We received considerable feedback about the article from other fire professionals.
Q. Understand I'm not talking about post publication review. I'm talking about prepublication peer review.
A. Okay. Ask your question again, then, please.
Q. Was the peer review, as you describe it, prior to publication in the Fire Findings publication limited to members of the McDowell Owens staff and the editorial board staff at Fire Findings?
A. I'm not sure how we're going to define "the

Page 48

editorial board staff" of Fire Findings. I know that people who did review it were fire professionals, fire investigation professionals. I'm not sure if they were official members of the editorial staff.
THE VIDEOGRAPHER: I've got about two minutes of tape remaining.
Q. (By Mr. Ellis) The next item down here under "Publications" is "Reflective Radiant Barriers, Good for Energy Savings - Bad for Fire Safety." Do you see that?
A. Yes.
Q. All right. Was that a publication, or was it something that appeared on the Internet?
A. This was a post on their website, the National Association of Fire Investigators.
Q. Prior to posting on the NAFI website, do you know whether your article entitled "Reflective Radiant Barriers, Good for Energy Savings - Bad for Fire Safety" was peer reviewed by anyone outside the staff of McDowell Owens or outside the editorial staff of NAFI?
A. Again, I'm not sure what the firm makeup of the editorial staff of NAFI is. I know this was reviewed by respected industry professionals at NAFI.
MR. ELLIS: Why don't you go ahead and

Page 49

switch the tapes.
THE VIDEOGRAPHER: Going off the record at 9:59 a.m., ending tape 1.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 10:10 a.m., beginning tape 2.
Q. (By Mr. Ellis) Mr. Simmons, during the first hour of the deposition, you were testifying about your various types of employment. One of those was Texas Instruments, which you joined in 2007. Why did you leave Texas Instruments?
A. The contract was completed.
Q. So it was a one-year contract?
A. It was a job-based contract. It was when we finished the job, it was finished.
Q. You also indicated that you were involved with building and developing with an LLC called Elm Point Properties from 2005 to 2007. Is that correct?
A. Yes.
Q. And in that connection you sold homes and small commercial buildings. What specific developments did you work on during that period of time?
A. The one that we completed was a commercial

Page 50

building that for a period was a pizza restaurant.
Q. What's the name of it?
A. Well, it's no longer in business. At that time it was called Fat Armadillo's Pizza.
Q. Is it still in business in some other form?
A. No.
Q. Is that the building that you were talking about having specified radiant barrier in?
A. I don't know that I would use the term "specified," but that's the building that it did wind up on the walls.
Q. Have you made any effort to try and have the radiant barrier removed from that location?
A. It has been removed.
Q. When was it removed?
A. 2011.
Q. Were you the one that asked for it to be removed?
A. I'm the one that removed it.
Q. You're the one that removed it. You said you were involved with developing homes as well. Is that correct?
A. We did remodels on homes is all we did during that period.
Q. Were those in any particular development?

Page 51

A. No. Those were actually on my own property.
Q. I'm sorry?
A. Those were on my own property.
Q. You indicated where you're licensed as a professional engineer, those places are California and Arkansas. Is that correct?
A. Correct.
Q. You're not licensed here in Texas, are you?
A. Correct.
Q. Have you ever received a reprimand from the board for practicing engineering in the State of Texas?
A. Not that I'm aware of.
Q. Do you know whether or not you're properly performing the practice of engineering in the State of Texas?
A. According to the State Board of Texas, I am.
Q. How do you know that? Did you receive some sort of communication from them?
A. Actually, we had several phone calls with them.
Q. When was it that you first became interested in lightning strikes and radiant barrier

Page 52

products?
A. It would have been during a fire investigation several years ago, and I'm going to say it would have been in late 2005.
Q. Late 2005?
A. I'm sorry. Late 2008.
Q. What kind of structure are we talking about?
A. A residential structure.
Q. Where was the structure located?
A. South Houston, as I recall.
Q. How did you become interested in radiant barrier at the time?
(Phone ringing)
THE WITNESS: I apologize. Let me turn this off. I thought it was off.
I'm sorry, Mr. Ellis. Would you ask the question again?
Q. (By Mr. Ellis) Sure. How did you become interested in radiant barrier at that time?
A. Just that the product was in this home and was in the proximity of the fire origin and --
Q. Are we talking about an attic fire?
A. Yes.
Q. Did you perform the fire investigation on

Page 53

the home?
A. I assisted in the fire investigation.
Q. Did you write a report on it?
A. I don't recall.
Q. What was the name of the residence?
A. I don't recall.
Q. What did you determine to be the cause of the fire?
A. In that case I believe we determined that it was undetermined.
Q. And was the radiant barrier a sheathing product or something else?
A. You're talking about like on the roof deck?
Q. Right.
A. In this case it was the rolled product that had been stapled up.
Q. It was rolled but stapled onto the sheathing?
A. Well, it was stapled onto the rafters.
Q. Stapled onto the rafters?
A. Yeah, the underside of the roof trusses. I believe this was a trussed house.
Q. And although radiant barrier was in the home, you could not determine that the fire origin or fire cause was due to radiant barrier?

Page 54

A. Correct. We didn't know where to look.
Q. What happened next in terms of your study of radiant barriers and their relationship to fires and residential structures?
A. At that time I began to think about and do initial research on the characteristics of the product, and then over time as we were involved in more fire investigations and observed more evidence, then we began to fit things together.
Q. In terms of your involvement with those additional fire investigations, were you the fire investigator?
A. Generally I'm involved as an electrical engineer. Generally we will have another cause and origin or origin and cause investigator that does the initial investigation. And if it looks like that there is an electrical factor or contribution in the fire, then I'm called in.
Many times we know ahead of time if there's a potential electrical involvement, and so I -- we would be involved basically from the beginning. But it varies from case to case, so...
Q. How many actual fire investigations have you been involved with while at McDowell Owens?
A. I'm going to have to give you a range.

Page 55

More than 150, less than 300.
Q. How many of those fire investigations involved lightning?
A. At least a couple dozen.
Q. Can you be any more specific than that?
A. No, sir, I can't.
Q. So 24?
MS. MACLEOD: Objection, form.
A. I would say minimum of 24.
Q. (By Mr. Ellis) Of those 24 fire investigations that involved lightning, how many involved radiant barrier?
A. Again, I can't be precise. I would say somewhere between 15 and 20.
Q. And the remainder, then, the difference between the 15 to 20 and the couple of dozen lightning-induced fires would have been fires that did not involve in any way radiant barrier systems. Is that correct?
A. Correct. And they didn't -- the cause didn't necessarily even include lightning. Just lightning was involved in the report. I believe there were some of those that we didn't determine there was a lightning contribution, that it was something else. It was just that people thought that

Page 56

lightning was involved -- or lightning had contributed. So I can't say that lightning contributed to all of the difference.
Q. Just to be sure what you're saying, of the couple of dozen that you referred to before, some of those may not have involved lightning at all?
A. That's right. Lightning was involved in the report and it was believed to be involved, but there were -- there were some of those that we did not -- could not determine that lightning contributed in any way.
Q. When did you publish your first article relating to radiant barrier systems and lightning-induced fires?
A. I believe lightning was mentioned in the first article, but it wasn't the primary focus. But definitely in the second article, which would have been October 2010.
Q. The first article that dealt with radiant barriers, though, came out in 2009. Is that right?
A. Yes.
Q. Of the 15 to 20 fire investigations that you've been involved with in some way while at McDowell Owens involving radiant barriers, how many of those were -- took place after the publication of

Page 57

your first article in 2009?
A. I can't give you that number.
MS. MACLEOD: Objection, form.
Q. (By Mr. Ellis) Can you give me even an estimate?
A. No, sir, I can't.
Q. About how many investigations have you done relating to radiant barrier systems in 2012?
A. I can't give you a precise -- less than ten, I believe. But that -- 2012 is a long year.
Q. How many fire investigations relating to radiant barrier systems did you do in 2011?
A. I can't tell you that.
Q. Less than ten?
A. I hate -- when we're talking about numbers that precise, I hate to guess.
Q. You don't know, you can't give me a number?
A. I can't --
Q. Even an estimate?
A. No.
Q. Would that be the same for 2012, you can't give me a number of fire investigations relating to radiant barrier systems that you did in 2012?
MR. ELLIS: Objection to form.
A. No, I can't. I mean, I can give you a

Page 58

guess but that's not -- that's only a guess.
Q. I'm not asking you to guess here today. For 2010, can you tell me approximately how many fire investigations relating to radiant barrier systems you did?
A. No, I can't.
Q. In 2009, can you tell me approximately how many fire investigations relating to radiant barrier systems you did?
A. No.
Q. So the fact is you can't really give me a number at all as to how many fire investigations you've done relating to radiant barrier systems?
MS. MACLEOD: Objection to form.
A. I believe I did that, sir.
Q. You gave me a sort of a range and then we tried to break it down. You can't give me a number, can you?
MS. MACLEOD: Objection, form.
A. A number of what?
Q. (By Mr. Ellis) Fire investigations that you've done that are related to radiant barrier systems.
A. You mean a specific number? I gave you a range, sir.

Page 59

Q. Do you have back at your office a list of the investigations that you've done that are related to lightning-induced fires that have involved radiant barrier systems?
A. No.
Q. You don't keep a list?
A. We keep a list of all jobs but not segregated like that.
Q. Are you able to segregate it?
A. I don't know. That's something that the staff would do. This is all in a database.
(Phone ringing)
THE WITNESS: I just turned that off again. I apologize.
Q. (By Mr. Ellis) You don't have a list?
A. No.
Q. And to your knowledge, does any member of the staff have a list?
A. No.
Q. What percentage of your fire investigation work is done at the behest of insurance companies or their representatives?
A. I can't give you a number. I could say that most of it.
Q. In any of the investigations that you've

Page 60

done where there has been a lightning-induced fire and radiant barrier system was present, did you determine that the cause of the fire was something other than the radiant barrier system?
A. Yes.
Q. You have done that?
A. Yes.
Q. How many times?
A. Very small number. It's more than one. I'm not going to try to be any more precise.
Q. So you remember one anyway. Is that right?
A. Yes.
Q. What was the name of that residence?
A. Oh, I can't tell you that. I don't know.
Q. Looking back again at your resume, which is attached to the original McDowell Owens report, you'll see an Exhibit B, which is entitled "Accounting Policy." Do you have that?
A. Yes.
Q. You see there are hourly rates that are attached to various types of professionals, correct?
A. Yes.
Q. Which one do you fall into?
A. Electrical engineer.
Q. So you're billing from $235 an hour to $275

Page 61

an hour. Is that correct?
A. Yes.
Q. What's the rate that you're charging on this case?
A. I don't know.
Q. How many hours have you put on this case?
A. That's actually part of the stack that I provided to you.
Q. I'm sorry?
A. There's a -- there's a list of -- we call it a professional summary analysis that the staff prepares. It would be towards the back. Those are the things that were requested in the deposition notice.
MR. ELLIS: Let's go ahead and mark this as an exhibit, please.
(Exhibit 38 marked)
Q. (By Mr. Ellis) I'm showing you what's been marked as Exhibit No. 38. Can you tell us what that is, please?
A. This is a list prepared by our staff entitled Professional Summary Analysis and this is a listing of the time that has been charged against this account.
Q. All right, sir. Could you hand that back

Page 62

to me?
A. (Witness complies.)
Q. Thank you.
So this has you beginning on this matter in February of 2012. Is that right?
A. I'd have to look at it to see. Yes.
Q. Just keep that one. And you've charged a total of 69.25 hours to this matter. Would that be correct?
A. That's what the list shows, yes.
Q. Have there been others that have charged time to this case?
A. Just administrative staff.
Q. No other professionals at McDowell Owens have charged time to this case?
A. Not that I'm aware of.
Q. Is State Farm the only client that you're working with in connection with the RBS matters?
A. No.
Q. What other clients are you working with?
A. I can't give you a list right now.
Q. Why?
A. I don't know it.
Q. You don't know why?
A. I don't know what the list is.

Page 63

Q. You know you're working for State Farm, though?
A. Yes.
Q. And you don't know any of the other names of the clients that you're working with?
A. I'd prefer not to guess. There are other insurance companies.
Q. But you would have to guess at their names?
A. I'm not going to give you a name without confirming it, sir.
Q. Just to clarify, though, when you say you would be guessing, does that mean you don't actually know what their names are or you would prefer not to give the names to me?
A. I don't know for sure what their names are. I know that there are companies other than State Farm, but without confirming which ones, I don't want to give a wrong name.
(Exhibit 39 marked)
Q. (By Mr. Ellis) Let me show you what's been marked as Exhibit No. 39. Is that a list of depositions you've given in the past?
A. It appears to be.
Q. All right, sir. Did you testify in any other cases prior to 2009?

Page 64

A. In a completely different industry many years ago, and I can't give you any detail other than what the nature of the case is.
Q. And when you say in another industry, did any of that involve fire causation, fire origin or radiant barrier systems?
A. No.
Q. Were you testifying as an expert?
A. Yes.
Q. Do you understand the difference between being a fact expert and a -- I'm sorry, between being a fact witness and an expert witness?
A. I believe I do.
Q. What's the difference?
A. An expert is going to offer opinions and a fact witness is going to relay facts.
Q. In that case, prior to 2009, you gave expert testimony, you gave opinions?
A. Yes. In one case, yes.
Q. And what was the nature of your expertise?
A. I was the design engineer who designed that piece of equipment.
Q. What kind of equipment are we talking about?
A. Large-scale semiconductor manufacturing

Page 65

equipment.
Q. Looking at Exhibit No. 39, the first item here is dated May 9, 2009. Was that a deposition that you gave in connection with Alfonso and Maria Elena Lopez versus Caterpillar?
A. Yes.
Q. And you were testifying on behalf of the plaintiff in that case. Is that correct?
A. Yes.
Q. Were you giving fact or expert testimony?
A. Expert testimony.
Q. What was the nature of your expertise that you were applying to that case?
A. I had analyzed the electronics of the control system in a piece of equipment.
Q. Did it involve a fire?
A. No.
Q. The next one is Jab, J-A-B, Inc. versus Fisher Tool Company. Is that right?
A. Yes.
Q. Did that in August of 2009, correct?
A. That's what it indicates, yes.
Q. You testified for the defendant in that case?
A. Yes.

Page 66

Q. As an expert?
A. Yes.
Q. And what was the nature of the expertise?
A. Again, analysis of a piece of electrical equipment.
Q. That did not involve a fire?
A. It did involve a fire.
Q. It did involve a fire. Did it involve lightning?
A. I don't believe so.
Q. The next one is Cantu-Sapien versus Juan Mendoza Corporation in December of 2010. Is that right?
A. Yes.
Q. You testified as the plaintiff -- testified, I'm sorry, for the plaintiff?
A. Yes.
Q. And what was the nature of your testimony in that case, fact or expert?
A. Expert.
Q. And what expertise did you bring to it?
A. Analysis of a control system and also the improper operation of a piece of equipment.
Q. I see there are actually two of these cases, Cantu-Sapien. Is that right?

Page 67

A. There were -- as I recall, there were -- they did separate that into two different -- two different cases.
Q. All right. You testified at two different depositions, both for the plaintiff. Is that right?
A. Yes.
Q. And the testimony involved an analysis of control systems but did not involve expert testimony relating to lightning or radiant barrier systems. Is that correct?
A. Correct.
Q. The next one is Tucson Electric Power versus Pauwels Canada. Is that correct?
A. Yes.
Q. You testified for the defendant in that case?
A. Yes.
Q. There was a deposition given in June of 2011, correct?
A. That's what it indicates, yes.
Q. What was the nature of your expertise in that case?
A. This was analysis of a fire and explosion in a power transformer.
Q. It did not involve lightning, correct?

Page 68

A. We do not believe so.
Q. And it did not involve radiant barrier systems, correct?
A. Correct.
Q. Next one is Cause No. D-127629, Ansely versus Arrow Trucking Company. Is that correct?
A. Correct.
Q. You testified on behalf of the defendant in that case?
A. Yes.
Q. What was the nature of the expertise that you brought to that one?
A. This was a heavy equipment operation, and it was a question of proper operating procedures. Also there was the question of a reaction of the controls of a certain piece of equipment.
Q. It did not involve lightning, correct?
A. Correct.
Q. Did not involve fire?
A. Correct.
Q. Did not involve radiant barrier systems?
A. Correct.
Q. The next one is Zuniga versus Whirlpool Corporation. Is that right?
A. Yes.

Page 69

Q. You testified on behalf of the defendant in that case?
A. Yes.
Q. What was the nature of your testimony in that case?
A. This was an electrocution case, and it was an issue of improper wiring in the structure.
Q. Did not involve lightning, correct?
A. Correct.
Q. Did not involve radiant barrier systems?
A. Correct.
Q. Did it involve a fire?
A. No.
Q. The next one is Roger and Nelma Boisjolie versus Payless Insulation, right?
A. Correct.
Q. You testified on behalf of the plaintiff in that case?
A. Yes.
Q. What did your testimony involve there?
A. This was a fire involving a recessed light. So it was an electrical analysis.
Q. Did your testimony involve lightning?
A. No.
Q. Did it involve radiant barrier systems?

Page 70

A. No.
Q. And did it involve a fire?
A. Yes.
Q. And that fire related to a piece of equipment, namely recessed lighting. Is that right?
A. Yes.
Q. Next one is Gail Menchaca versus USAA. Is that right?
A. Yes.
Q. You testified on behalf of the defendant in that case?
A. Yes.
Q. What was the subject of your testimony in that one?
A. This was analysis of the electrical system of a home.
Q. Did it involve lightning?
A. No.
Q. Did it involve a fire?
A. No.
Q. Did it involve radiant barrier?
A. No.
Q. That the sum total of the deposition testimony you've given with the exception of what you're doing today?

Page 71

A. That's all I can recall.
Q. So just to be sure, then, you've never testified in a deposition as an expert on the subject of lightning-induced fires caused by radiant barrier systems, correct?
A. Not that I recall.
Q. You'd remember that, wouldn't you?
A. I think I probably would, yes.
Q. All right. So the answer is no, you have not, right?
MS. MACLEOD: Objection to form.
Q. (By Mr. Ellis) Sir? It's not just that you don't recall. You haven't testified as an expert in a deposition about lightning-induced fires in radiant barrier systems?
A. I'm scanning my memory, sir.
I have no recollection of any.
(Exhibit 40 marked)
Q. (By Mr. Ellis) All right. I've passed to you what's been marked as Exhibit No. 40. Is that a summary of trial testimony that you've given, sir?
A. I believe it is.
Q. Did you prepare it?
A. No.
Q. Who prepared this for you?

Page 72

A. This is prepared by our staff.
Q. The first item on the list there is Lopez versus Caterpillar. You see that?
A. Yes.
Q. You testified on behalf of the plaintiff in that case. Is that correct?
A. Yes.
Q. What was the nature of your testimony in that case?
A. Expert analysis of the control systems and the operation of a piece of equipment.
Q. Was that a piece of equipment manufactured by Caterpillar?
A. Yes.
Q. What was it?
A. A wheel tractor scraper.
Q. Did your testimony in that case relate to lightning-induced fires?
A. No.
Q. Did it relate to radiant barrier systems?
A. No.
Q. The next item on the list is Menchaca versus USAA. Is that right?
A. Yes.
Q. And is that the case that you told us about

Page 73

that also appears on your deposition list?
A. Yes, it appears on the deposition list.
Q. So you testified as both a witness in a deposition and a trial in that case, correct?
A. Yes.
Q. And that was an analysis of an electrical system, correct?
A. Yes.
Q. Which did not involve lightning-induced fires or radiant barrier systems, correct?
A. Yes.
Q. So would it be fair to say, sir, in looking at your trial summary testimony, that you have never been qualified as a witness on the subject of lightning-induced fires?
A. Not that I recall.
Q. You've never been qualified as a witness -- expert witness to testify about fire cause or fire origin. Is that correct?
MS. MACLEOD: Objection to form.
A. At trial or in deposition, Mr. Ellis?
Q. (By Mr. Ellis) I'm talking about at trial.
A. At trial? No, I have not.
Q. You've never been qualified as an expert witness to testify at trial about first material

Page 74

ignited in a lightning-induced fire, correct?
A. Correct.
Q. You've never been qualified as an expert witness at trial to testify about electrical events which ensued after a lightning strike. Is that correct?
A. Correct.
Q. You never have been qualified as an expert witness to opine with respect to the involvement of construction materials in a lightning-induced fire, correct?
A. Again, sir, are we talking about at trial?
Q. At trial.
A. Correct.
Q. And you've never been qualified to testify as an expert witness at trial about the characteristics of radiant barrier systems. Is that correct?
A. Correct.
Q. You've never been qualified to testify as an expert at trial about the involvement of radiant barrier systems in lightning-induced fires. Is that correct?
A. Correct.
Q. Your timeline, which is on Exhibit No. 38,

Page 75

indicates that you had a telephone discussion with the client on February 22, 2012. Is that right?
A. I'd have to refer to the list.
Yes.
Q. Who is the client that you talked to?
A. That's Ms. Skye MacLeod.
Q. And what did Ms. MacLeod tell you about the case?
A. At that point, just basic introduction that we have a fire that we believe lightning was involved in and that the structure included reflective radiant barrier.
Q. Were you asked to do anything at that time?
A. I believe at that time we were just asked to review certain information that would be provided.
Q. Would be provided?
A. Yes.
Q. You weren't provided anything in February of 2012?
A. I don't -- I don't recall exact dates that we received photos or anything like that.
Q. Were you given an assignment at that point in February 2012?
A. I don't believe it -- I can determine that. Yes, we were given an assignment during the month of

Page 76

February 2012.
Q. What was the nature of your assignment?
A. To analyze and consult.
Q. About what?
A. About the possible involvement of the lightning and the radiant barrier in this fire. I'm not even sure that it was -- it was basically -- the assignment was just to look at the photographs and provide consultation about what some of the photographs might indicate.
Q. But as you just told us, what you were asked to do was to look at the involvement of radiant barrier systems in this lightning-induced fire. Is that right?
A. No, sir. That's why I was clarifying that immediately that at that time -- we won't take an assignment presuming a conclusion. We'll take it until we actually get some documentation. So at that time the assignment was to look at the photographs and provide some consultation as to what the photographs might tell us.
Q. At that point in time -- and I'm talking about February of 2012 -- what did you understand might already have been done in the way of research and analysis on this fire?

Page 77

A. We understood that a cause and origin investigation had been performed.
Q. By whom?
A. By Mr. McGraw. Mr. Rob McGraw.
Q. Did you perform any actual site work in connection with this matter?
A. No.
Q. And by that I would include any visits to the site?
A. No.
Q. You never visited the Taylor home?
A. No.
Q. To this date you still have not visited the Taylor home?
A. Correct.
Q. Have you talked with Mr. Taylor?
A. No.
Q. You've never talked with the homeowner at all about the fire?
A. No.
Q. Has anyone at McDowell Owens talked with the homeowner about the fire?
A. Not to my knowledge.
Q. So you didn't take any photographs, obviously, of the Taylor home yourself, did you?

Page 78

A. Correct.
Q. You didn't take any measurements, did you?
A. Correct.
Q. You didn't see the home to be able to make a diagram of the home, did you?
A. Only in photographs.
Q. So the entirety, then, of your analysis in this case is really based upon the photographs, diagrams and work that was performed by Mr. McGraw, correct?
MS. MACLEOD: Objection to form.
A. I can't say the entirety. I viewed some newspaper articles about storm event and fires in that vicinity. Of course, I've spoken in general terms with Ms. MacLeod, and I have viewed other reports about the matter.
Q. (By Mr. Ellis) You told me news articles and other reports. Is the news article the one that appeared in The Franklin Times?
A. I believe that it was.
Q. You pulled that up by screen shot off the Internet, correct?
A. Yes.
Q. When you saw that report that appeared in The Franklin Times about the fire at the Taylor home,

Page 79

what did you learn?
A. I don't recall what I learned specifically. Just that there was a fire and there had been a storm in the area recently.
Q. Did you learn whether or not there were other home fires that were lightning induced that night other than the Taylor home?
A. I don't recall that. I recall that there was a -- that there was a storm and there were reported multiple lightning strikes, but I don't recall a name.
Q. Did you have conversations with Mr. McGraw about this matter?
A. About -- in general terms or are you talking about a specific matter?
Q. I'm talking about this case, about the Taylor home fire.
A. Well, of course I had general conversations with her about it.
Q. I'm sorry. Not Ms. MacLeod. I'm talking about Mr. McGraw.
A. Oh, with Mr. McGraw. About the fire?
Q. Right.
A. No.
Q. You've never had a conversation with Rob

Page 80

McGraw about the Taylor home fire?
A. I had a very brief conversation with Mr. McGraw, getting some clarification on his photographs, a couple of his photographs. Brought the -- of course, I've read his report. But as far as any kind of a detailed conversation about the fire, no.
Q. And this was a brief conversation?
A. Yes. As I recall, there was no --
Q. Less than ten minutes?
A. I believe so.
Q. Less than five minutes?
A. I -- sometimes you spend time on the phone waiting for something, so I can't be that precise.
Q. How long did you talk to Mr. McGraw?
A. You want an exact number?
Q. As close as you can get it.
A. I'm going to say that what I recall was less than ten minutes.
Q. Okay. So the only telephone conversation that you recall having with Mr. McGraw lasted less than ten minutes?
A. I believe there were other conversations about logistics of sending evidence back and forth. He did send evidence to our office, and so there were

Page 81

some discussions about that. I don't recall how many -- exactly how many. We may have played phone tag back and forth.
Q. But in terms of fire causation, fire origin, radiant barrier systems, the sum total of your conversation with Mr. McGraw was something less than ten minutes?
A. That's what I recall. I don't recall any protracted discussions about anything. At that point we don't want to -- we don't want to get other opinions.
Q. You relied totally upon his work in the way of fire investigation, right?
MS. MACLEOD: Objection to form.
A. I relied on photographs that were -- that I -- that were produced to me, and I'm not even sure where all the photographs came from as I sit here, and written reports by others.
Q. (By Mr. Ellis) Other than the report by Mr. McGraw, what other reports did you rely on?
A. I relied on the reports by Mr. Scardino and by Mr. Goodson.
Q. You didn't have those at the time of your original report in August of --
A. At the time of the original report,

Page 82

correct.
Q. So what other reports did you rely upon other than Scardino and Goodson?
A. In forming my opinions? Those are the only ones that I recall that I relied on in forming my opinion.
Q. You didn't do any work independent of Mr. McGraw to determine a point of fire origin, did you?
MS. MACLEOD: Objection to form.
A. I did not repeat -- fully repeat Mr. McGraw's work. We will always do what we call a reality check any time that someone else has done an initial investigation to confirm that the work that they've done and the conclusions that they've reached are consistent with evidence that's available.
Q. (By Mr. Ellis) And did you do that with Mr. McGraw's work and analysis concerning point of fire origin?
A. Yes, of course.
Q. Then you know that Mr. McGraw determined that he could not identify a point of fire origin, right?
MS. MACLEOD: Objection, form.
A. Depends on the definition of "point." He

Page 83

did determine an area of origin.
Q. But he was unable to determine a point of origin, right?
MS. MACLEOD: Objection, form.
A. I did not see that in his report. I don't know that he has -- I don't recall in his report that he explicitly said he could not determine a point. I recall that he identified an area.
Q. (By Mr. Ellis) Do you know why it was that Mr. McGraw was unable to determine a point of fire origin?
MS. MACLEOD: Objection to form.
A. I know very well why -- in fires like this, why it is very difficult to determine an exact point.
Q. I'm talking about this fire, not similar fires.
A. I know in this fire why it is very difficult to determine an exact point. Yes, I know that.
Q. And did you learn that from Mr. McGraw?
A. No. I learned that from looking at the photographs.
Q. Tell me what you know about it then.
A. I know that there was material consumed in this fire. I know that in the area of origin, that

Page 84

the radiant barrier material was consumed. Therefore, the location -- the exact point where the fire originated no longer exists. It's been consumed.
Q. Did you also learn that 240 square feet of the roof was removed?
MS. MACLEOD: Objection to form.
Q. And destroyed?
A. 240 square feet? No, I did not know that number.
Q. Mr. McGraw never told you that that amount of the roof was taken off at some point either during the time period when the fire department was there or during reconstruction work?
MS. MACLEOD: Objection to form.
A. I don't recall ever being told that number, and I don't recall estimating that number myself.
Q. (By Mr. Ellis) So Mr. McGraw never told you that before the time that he actually had an opportunity to visit the Taylor home and take photographs, 240 square feet of that roof had been taken off?
MS. MACLEOD: Objection to form.
A. Again, I don't recall ever hearing that exact number, Mr. Ellis.

Page 85

Q. Would that have concerned you?
MS. MACLEOD: Objection to form.
A. No, I don't believe so because I saw photographs of the actual scene.
Q. You're aware of the fact that Mr. McGraw identified an area of origin for the fire. Is that correct?
A. Yes.
Q. Did you do any work independently of Mr. McGraw to determine an area of fire origin?
MS. MACLEOD: Objection to form.
A. Again, Mr. Ellis, we will always do work to confirm that a described area of origin is consistent with available facts and information.
Q. (By Mr. Ellis) And did you confirm that Mr. McGraw's identification of an area of fire origin was satisfactory to you?
A. Yes.
Q. You've also prepared a report that's dated November 21, 2012. Is that correct?
A. Yes.
MR. ELLIS: Do you have this, Skye? I've got a copy for you.
(Exhibit 41 marked)
Q. Showing you what's been marked as Exhibit

Page 86

No. 41. Do you have that?
A. Yes.
Q. What is that, sir?
A. That appears to be the amended and supplemental report that was prepared November 21.
Q. That's a report that you prepared. Is that correct?
A. Yes.
Q. And you prepared this as an amended and supplemental report to the original report that was filed on August 29. Is that right?
A. Yes.
Q. Can you identify for me what specific things in this Exhibit 41 are corrections of matter that was incorrect in the original August 29 report?
A. To identify every single correction, I'm going to have to go through it page by page. There were some -- as I recall, there was a spelling error and a plurality error and some things like that that I'd have to look to find. So I can't -- I'm happy to go through it line by line and compare.
Q. Other than editorial changes -- I'm asking for changes of substance to your opinions and report -- what matter appearing in the November 21 report is a correction of what appears in the

Page 87

August 29 report?
A. I may miss something. On the bottom of page 2 of Exhibit 41, there is a number that is 8 that originally was 10.
Q. All right. You're referring to the last sentence that appears on page 2 where it says, and I quote, "The size of the heavily burned area appeared to be less than 8 feet by 12 feet." Is that correct?
A. Yes.
Q. And what you're saying is is that in the original report, that was 10 feet by 12 feet?
A. Yes.
Q. And you changed it to 8 feet by 12 feet?
A. Yes.
Q. Why did you do that?
A. Better photographs, more -- just better views of the scene.
Q. The photographs you're referring to were all taken by Mr. McGraw, correct?
MS. MACLEOD: Objection to form.
A. As I sit here, I can't recall who all the photographs may have been taken by. Taken by someone other than me for sure.
Q. And you were aware of the fact that

Page 88

Mr. McGraw had identified the area as being 10 by 12 feet?
A. I don't recall that exactly, but it was something like that. I don't recall the exact numbers.
Q. Why did you change it from what Mr. McGraw had arrived at?
A. This was -- this was not based on Mr. McGraw's determination. This was based on what I could see in the photographs.
Q. So you --
A. My own estimate.
Q. You know that Mr. McGraw places it at 10 by 12 feet, correct?
A. I probably knew that at one time. I can't quote exactly what's in his report now.
Q. Did you talk with Mr. McGraw about your conclusion that the area was not 10 by 12 but 8 by 12?
A. No, I don't recall that at all.
Q. In any event, the area that you two are talking about is different in size, right?
A. These are estimates, Mr. Ellis. Again, I wasn't there to measure. This was just estimates from what I can see in the photographs.

Page 89

Q. You didn't measure it yourself?
A. Of course not. Only in photographs.
Q. What other changes that amount to corrections of information that appear in your original report?
A. On the bottom of page 3 of Article -- or Exhibit 41 where it says -- the next to the last line where it says, "just north of the ridgeline," originally that had said "just south of the ridgeline."
Q. In fact, that's a fairly typical change throughout your amended report, isn't it?
A. Yes.
Q. The burned area, as you originally identified it in the August 29 report, was placed on the south-facing roof, right?
A. Depends upon where in the report.
Q. We'll go through it in a minute, but you remember changing "south roof" to "north roof" on not just this occasion but on other occasions as well, right?
A. I believe that there were two occasions, yes. That's what I recall.
Q. Any other changes that appear in the November 21 report which is Exhibit 41 that were

Page 90

corrections to the earlier report?
THE VIDEOGRAPHER: Sir, I'm going to have to change.
MR. ELLIS: Okay.
THE VIDEOGRAPHER: Going off the record at 11:09, ending tape 2.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 11:13 a.m., beginning tape 3.
Q. (By Mr. Ellis) Mr. Simmons, before we went off the record, I had asked you to look through your new supplemental and amended report to find any other instances where you were making corrections to what appeared in the earlier August 29 report. Have you found any?
A. Much of the section of the report of Exhibit 41 that begins on the bottom of page 3, "Burn Damage Area Examination," has been rewritten from the original report to include additional information such as examination of evidence at Mr. Goodson's facility.
Q. So that's new, right?
A. Yeah, there is new information in that area.
Q. Has to be new because you didn't see the

Page 91

material at Mr. Goodson's lab prior to the time that you wrote your original report in August of 2012, right?
A. Correct.
Q. So that's not a correction. That's new material?
A. It's new material. There -- it's primarily new material. There's a little bit of verbiage change -- of wording change, and so I'm sure we'll want to identify that.
Q. Anything else that was a correction to the August 29 report?
A. I'm zeroing in on that here.
Okay. About 1 inch from the bottom of page 4 of Exhibit 41 -- it was actually one, two, three, four, five, six -- on the sixth line up from the bottom, there's a statement that says, "The appearance of arcing evidence was consistent with that observed as a result of arcing through charred insulation."
In the original report it was stated that, "Evidence of arcing through char was found." So it's a little bit different wording.
The label on Photo 5 of Exhibit 41, that's a photograph that originally was Photo 6 and

Page 92

the terminology there is slightly different.
Q. All right. Anything else?
A. There are a number of additions and different wording, but nothing right now that I'm finding that is a real content change.
Q. Remember, I'm looking for things that are corrections to your original report.
A. Yes, sir, I understand.
Again, there are a number of additions. Those are the only things I could identify that I would call corrections.
Q. All right, sir. Thank you. Let's come back, then, to the beginning of your amended report, Exhibit No. 41, where you talk about the background of the fire incident. Do you see that paragraph?
A. Yes.
Q. Is it your understanding that the lightning strike which hit the Taylor home was a result of a storm that was spawned by Hurricane Irene moving through the area around Louisburg, North Carolina?
A. That was my understanding.
Q. And you refer in the next sentence to reports in The Franklin Times. Is that right?
A. Yes.
Q. That's the one that you looked up on the

Page 93

Internet and took the screen shot of and put that in your file, right?
A. Yes.
Q. Were you aware of the fact, then, that at least two structure fires had occurred in the Franklin County area as a result of that storm?
A. Obviously I was aware of it because it's here in my report. Again, it was not something that was significant to me in any way. Only that there was a storm that was spawning lightning.
Q. When you said it wasn't significant to you, you didn't look into that at all, did you?
A. Into whether there were multiple fires?
Q. The second fire that's reported in your report.
A. Well, the fact that there were two fires, no, I did not confirm that.
Q. In other words, you didn't try to determine, for instance, whether or not radiant barrier was present at the scene of the second lightning-induced fire, correct?
A. Correct.
Q. Did Mr. McGraw tell you that he had had a conversation with the fire marshal where he had learned -- or learned from Mr. Taylor that as many as

Page 94

five lightning-induced fires occurred that evening?
A. I don't recall that.
Q. You don't know whether you were told that or not?
A. I don't recall being told that. And again, that was not information that was relevant to me. All I needed to know and what I was concerned about was there was a storm that was spawning lightning and we had good reason to believe lightning was involved in this fire. And that's the only thing I'm concerned about.
Q. So you were not concerned and it would not have been important to you to look into the other four lightning-induced fires in the Louisburg, North Carolina area to determine whether or not any of those involved radiant barrier?
MS. MACLEOD: Objection to form.
A. That was not anything I was involved with at all. I was involved with one fire in one home, and what happened -- was reported to have happened anywhere else is of no consequence whatsoever. It doesn't -- I might have had idle curiosity, but it was not germane to this investigation.
Q. (By Mr. Ellis) Of no consequence to you, as you just said?

Page 95

A. In --
MS. MACLEOD: Objection to form.
A. -- terms of this investigation.
Q. (By Mr. Ellis) Some of the research you've got to support your opinions in this case and the material that appears in the report was gathered from the Internet?
A. The fact that there was a storm in this area that was generating lightning was gathered off the Internet.
Q. You also got your research on lightning, though, from Wikipedia off the Internet, correct?
A. Oh. Sure. Much technical research these days is done on the Internet.
Q. I understand. But the answer to my question is is that the research that appears in your file on lightning came from Wikipedia, correct?
A. There is a -- there is a -- yeah, there's one paper that came from Wikipedia.
Q. More than one, right?
A. I have to look and see.
Q. In fact, you looked into autoignition temperatures and found that at Wikipedia as well, right?
A. Many times Wikipedia is the first thing

Page 96

that comes up when you do a search.
Q. You relied on it?
A. Usually when I print something off of Wikipedia, it's so that -- it's because it's presented in a way that's easy to understand it, I could use it to explain to other people. I rarely use Wikipedia as an authoritative technical -- as a technical authority.
Q. About the photos which you saw in connection with arriving at your opinions, it's true, isn't it, that you never saw a photograph of the fire damaged area before the 240 feet of roofing was replaced?
MS. MACLEOD: Objection to form.
A. Again, I don't know about the 240 feet. Early, I never saw a photograph of the roof before it had been temporarily repaired or had been made -- attempted to be made weather tight. Since then I have seen photographs of that area before it was fire damaged at all.
Q. (By Mr. Ellis) Right. Before any fire occurred?
A. Correct.
Q. Before the lightning strike?
A. Correct.

Page 97

Q. In other words, as was in its as constructed condition?
A. Correct.
Q. But the fact is you never saw any photographs of the fire damaged area as it existed after the fire and before the placement of the roofing?
MS. MACLEOD: Objection, form.
A. Before the temporary repair to the roof, yes.
Q. (By Mr. Ellis) Right. Let's turn to the paragraph in your amended report where you referred to the overview of the fire damage. Do you have that?
A. Yes.
Q. In your amended report you say, "On the exterior of the house, fire damage was observed on the center section of the north-facing roof surface and on a small portion south of the roof ridgeline." Is that right?
A. That's what it says.
Q. And in your original report you said that the fire damage was observed on the south-facing roof surface?
A. Let me go back to the original report.

Page 98

Correct.
Q. So what you have there about the fire damage appearing on the south-facing roof surface in your original report was wrong, right?
A. Yes.
Q. A little bit further down in the "Overview of Fire Damage" section of your amended report, you make this statement: "The main burned area was near the east-to-west center of the roof deck and just north of the roof ridgeline." Do you have that?
A. Yes.
Q. And in your original report you said that the main burned area was near the east-to-west center of the roof deck and just south of the roof ridgeline, right?
A. Yes.
Q. And what you said in your original report about that location was wrong?
A. The north-south orientation was wrong.
Q. So you made a mistake in the original report about where the fire damage occurred, whether it was on the north or the south roof, right?
MS. MACLEOD: Objection to form.
A. No. I made a mistake in interpreting a photograph of a compass in front of the home --

Page 99

actually, I made a mistake by properly interpreting a compass reading in front of the home.
Q. But you reported the fire damage was on the south roof when, in fact, it was on the north roof, right?
A. I reported what the compass reading in the photograph told me, and later I learned that that was not correct.
Q. All right. But my statement was correct, right? You had originally reported fire damage was on the south roof when, in fact, it occurred on the north roof?
MS. MACLEOD: Objection, form.
A. Yes, that statement is correct that I originally reported it on the south.
Q. (By Mr. Ellis) And if you'd turn to page 3, your section entitled Burn Damage Area Examination and Analysis. In the next-to-last sentence of that paragraph at the bottom of page 3 on your amended report you say, "The burned area was near the east-to-west center of the roof and just north of the roof ridgeline." Correct?
A. Correct.
Q. And you should have said that it was just south of the roof ridgeline. Is that right?

Page 100

A. In that...
Yes, in the original report on -- in the second paragraph from the bottom, it correctly reports the north-south orientation.
Q. You're looking at the original report?
A. Yes, in the original report on page 4, second paragraph up from the bottom, the third sentence up, it says, "Most burn damage is approximately 8 to 10 feet north of the roof ridgeline."
So in the original report, I had it correct in some locations and not correct in others and this was because of conflicting readings in the photograph.
Q. All right. Looking at page 3 again on your amended report, the sentence that says, "The main burned area was near the east-to-west center of the roof and just north of the roof ridgeline," do you see that?
A. Yes.
Q. Is that correct or not?
A. I believe that's correct.
Q. And what you said in your original report about it being just south of the roof ridgeline, that would have been incorrect?

Page 101

A. In the sentence where I said it was south, that is incorrect, but in the sentence where I say it's north, that is correct in the original report.
Q. You've got it one way one time and one way the other?
A. Yes.
Q. Almost within the same paragraph of the report?
A. Correct.
Q. All right. Turning to page 4 of your report --
A. Is this the amended report?
Q. Yeah, the amended report. Looking at Photo No. 4. Do you see that?
A. Yes.
Q. You make the statement just beneath the photo that, "as flame tends to spread upward and outward." Would that be correct?
A. Yes.
Q. You used this reference for that NFPA 921, Chapter 6, right?
A. Yes.
Q. Now, with that statement in mind and looking at Photograph No. 4, can you tell us by looking at the wall partition which is depicted in

Page 102

Photograph No. 4 whether or not the fire started north of that wall partition?
MS. MACLEOD: Objection, form.
A. By looking at this photograph --
Q. Yeah.
A. -- alone? No, I couldn't tell you just by looking at this photograph alone.
Q. With your knowledge of the photographs and the fire investigation, can you tell me whether or not the fire started north of where the wall partition would extend upward to the roof?
MS. MACLEOD: Objection to form.
A. I'm going to ask you to restate that question, Mr. Ellis, to make sure I get it right.
Q. Let me give you a little bit more background. Which direction are we facing when we look at Photograph No. 4?
A. I believe you're facing north.
Q. Now, if you look at that partition and assume that it extended all the way up to the roof and the rafters weren't in the way, would the fire have started north of where the partition intersects the roof?
A. You're asking my opinion or...
Q. Well, sure. You're the one who wrote this

Page 103

report.
A. In my report I do not opine about the origin -- point of origin, Mr. Ellis. I told you that my work to that extent was only to confirm that the finding by Mr. McGraw appeared consistent with available evidence that was available to me, but I did not make an independent determination of where -- you know, what the area or point of origin was.
Q. Can you tell me as you sit here whether or not the fire originated north of where the partition wall intersects the roof?
MS. MACLEOD: Objection to form.
A. You're talking about the point of origin now?
Q. (By Mr. Ellis) Where it originated, point of origin.
A. No, I can't, by looking at this available evidence, tell you the exact point of origin.
Q. In fact, in any of the available evidence, you're not able to tell us where the point of origin was, right?
A. Restate your question, Mr. Ellis.
Q. In fact, in looking at all of the available evidence, you're not able to tell us where the point

Page 104

of origin was, right?
MS. MACLEOD: Objection to form.
A. I have not attempted to do that. I can't say that I'm not able to. I'm saying that I have not made that determination.
Q. (By Mr. Ellis) You have a discussion beginning on page 4 about the 14-2 and 14-3 cables. Is that right?
A. Yes.
Q. Did you inspect both 14-2 and 14-3 cables in your laboratory?
A. We inspected them at our -- I inspected them at our facility.
Q. And did you inspect them prior to preparing the original report which is dated August 29, 2012?
A. I did a partial inspection.
Q. You did a partial inspection?
A. Yes.
Q. As distinguished from a full inspection?
A. A full inspection many times involves destructive examination, and that's what we performed at Mr. Goodson's facility. But I only looked at what was available -- easily available without disturbing any of the evidence.
Q. Did you look at these cables under

Page 105

microscope in your laboratory before you wrote the August 29, 2012 report?
A. I did a partial inspection of the cable under a microscope.
Q. And what does "a partial inspection under microscope" mean?
A. It means I viewed only areas that were exposed, easily accessible without any -- removing or disturbing any material.
Q. So when you wrote your August 29, 2012 report, you did not do a full visual inspection under microscope of the 14-2 or 14-3 cables. Is that correct?
MS. MACLEOD: Objection to form.
A. I did not inspect all -- every inch of the conductors that were not exposed. It was not possible.
Q. (By Mr. Ellis) How much of them did you look at?
A. Portions that were exposed. I didn't measure the exact -- how much was exposed and how much wasn't.
Q. But you looked at all of the exposed portions of both the 14-2 and 14-3 cables?
A. I didn't look at all of it under a

Page 106

microscope. I visually looked at them and inspected to see if there were any locations that obviously needed closer examination.
Q. And did you find some areas that required closer examination?
A. Yes.
Q. What does 4 -- what does Exhibit -- I'm sorry. Let's go to your original report, Exhibit No. 37.
A. On the original report now?
Q. Yes. Okay. You have Photograph No. 5 there on your original report?
A. Yes.
Q. What does Exhibit -- Photo 5 show?
A. It shows a portion of the burned area and what appears to be a portion of an electrical cable.
Q. In fact, you label Photo 5 by saying, "Shows a section of 14-2 NM electrical cable in the lowest burn portion of the origin area," right?
A. Yes.
Q. You further say, "This wire was confirmed to not be the cause of the fire." Correct?
A. Yes.
Q. And at the time that you wrote the original report on August 29, 2012, did you believe that this

Page 107

section of the 14-2 electrical cable was in the lowest burned portion of the origin area?
A. That's what I believed at this time.
Q. Did you change that opinion?
A. Okay, Mr. Ellis. I'm going to ask you to repeat the specific opinion that you're asking about. There are a number of opinions in this paragraph, so...
Q. The specific question I asked you was to look at Photo No. 5 and to tell me whether or not what's depicted there in Photo 5 shows a section of 14-2 in an electrical cable in the lowest burned portion of the origin area?
A. Okay. Most of --
Q. We're looking at your original report.
A. Yes. Yes. The -- I was not able to confirm that for sure this is the lowest burned area from this photograph. It appears to be. That's why that photograph is not included in the report.
Q. Stop there. In your original report you said it was in the lowest burned area, right?
A. That's correct. That's what it says here.
Q. Now you're saying you're not able to confirm that it was in the lowest burned area. Is that right?

Page 108

A. Based on additional information, I cannot -- I could not confirm for sure that this was the lowest burned area. It appeared to be, but I was not able to confirm this, certainly that this was the lowest burn area.
Q. In fact, you deleted Photo 5 from your original report when you went to prepare your new report, right?
A. That's correct, based upon additional information that was available.
Q. So you no longer know that Photo 5 depicts a location that's in the lowest burned portion of the origin area, right?
A. That's correct, that particular photograph.
Q. Now, in your new report you say that, "The 14-2 cable contained no evidence of localized overheating or electrical activity. Therefore, this cable could not have been the cause of the fire," right?
A. Yes.
Q. What kind of evidence would have demonstrated to you some sort of localized overheating or electrical activity such that the cable could have been a cause of the fire?
A. An arc, of course, an arc divot, arc beads

Page 109

or any evidence of localized overheating. And that would be some sort of a physical anomaly on the wires.
Q. And you're saying you did not find those. Is that correct?
A. Correct.
Q. Let's turn to the 14-3 cable. What is the 14-3 cable. Do you know?
A. You mean what is 14-3 cable?
Q. What was its function?
A. It's my understanding that this was the alarm circuit.
Q. All right. And was that made up of a number of different types of wires?
MS. MACLEOD: Objection to form.
A. I'm sorry, the overall circuit or the --
Q. (By Mr. Ellis) The 14-3 cable itself, was it made up of a number of different wires?
A. Well, 14-3 cable have four wires in it, three that are considered conductors.
Q. And one which is what?
A. Would be the ground.
Q. The original report says that, "On a section of the 14-3 cable that was near the origin area, evidence of arcing through char was found,"

Page 110

correct?
A. Correct.
Q. How near the area of origin was this section of the 14-3 cable?
A. From the -- the evidence that I have seen, several feet.
Q. And we're talking about the specific arcing artifact that appeared on the 14-3 cable --
MS. MACLEOD: Objection, form.
Q. -- or something else?
A. No, the arcing artifacts. There were actually two on that ground wire.
Q. What does "arcing through char" mean?
A. Okay. Bear with me.
In a fire -- after a fire we will normally see two types of arcing evidence. One results from direct contact between two conductors or a conductor and a -- two wires. That is commonly called "parting arc" and other terms. I call it a "direct contact arc" because I believe that's more descriptive. It results when two wires come in direct contact. After they come in direct contact, then they separate again, and that's where we get the parting arc. It all is initiated by direct contact between two wires.

Page 111

The second type of arcing artifact that we often see is generically commonly called "arcing through char." This is arcing that does not result from a direct contact and it's really -- any arcing that is not a result of a direct contact will look like arcing through char.
Q. In other words, "arcing through char" to you means any nondirect contact between two wires?
A. Yes. That's one way to put it. It means an arcing event occurred but the two wires were not touching. It was separated by some medium, and that's why the events are electrically and physically different. It means the current is going through a resistance.
Q. In looking at page 6, Photo No. 6 of your original report, you label that as, "Shows arcing through char on a conductor of the 14-3 NM electrical cable." Correct?
A. Correct.
Q. And what was it about the appearance of Photo 6 that led you to believe that this was arcing through char?
A. Primarily two things. The first is there are no sharp divots, no sharp lines of demarcation between areas on the wire. And the second is the

Page 112

very -- I'm going to use the term "soft spreading" of copper material. It's almost like it was poured in places. A sharp divot, a sharp demarcation in the material is usually evidence of a direct contact arc and the soft smearing of copper material is usually indicative of arcing through something.
Q. If you would, have you got a pen over there?
A. I have a pencil.
Q. Okay. Let me let you borrow my pen here. And if you would, please, just circle what you've just described as the soft spreading of copper material.
A. (Witness complies.)
Q. Now, draw a line to the outside of that and label it as "B."
A. (Witness complies.)
Q. And you say you're not seeing any sharp divots here at all. Is that right?
A. Not in this photograph.
Q. What other arcing artifacts, if any, do you see on Photo No. 6?
A. Well, there is a -- there is a bubble, but we can't call that a bead.
Q. What's the bubble from?

Page 113

A. It's just an artifact of arcing. Again, with a direct contact arc, we will often get beads. You can get beads from both but -- and a bead is a much more spherical formation.
Q. You say that -- well, let's back up just a second. Using my pen there, would you mark that artifact that we're talking about now as "A"? Just circle it and put an "A" to the outside.
A. (Witness complies.)
Q. And you're not calling that a bead. Is that right?
A. Correct.
Q. You're calling that, what, a bubble?
A. I call it a bubble.
Q. And what produced the bubble?
MS. MACLEOD: Objection, form.
A. It's -- again, it's produced by arcing.
Q. (By Mr. Ellis) Why are you reluctant to call it a bead?
A. A bead is a much more spherical object.
Q. Can I have my pen back? Thank you.
Are these pictures which you took yourself, Photo No. 6?
A. These may have -- Photo No. 6 may have been. I have to look back.

Page 114

Q. Do you believe Photo 6 is one that you took?
A. It looks like one that I would have taken, yes.
Q. Would you have taken it under the microscope?
A. Under a microscopic lens and it may have been on one of my cameras that has a -- has a microscopic lens.
Q. In your original report you conclude that the 14-3 cable did not sustain a failure such as a short circuit prior to the start of the fire. Is that right?
A. Correct.
Q. And what led you to that conclusion?
A. The electrical anomalies, the arcing was only on the ground wire -- I'm sorry. Were you asking about the original report?
Q. Yes.
A. In the original report, we had not yet confirmed that this was the ground wire but we had -- I was able to apparently confirm that we had arcing on only one wire.
Q. And that led you to the conclusion that the 14-3 cable did not sustain a failure prior to the start of the fire?
A. Yes. If you're going to have a failure -- an arcing event that is a result of a failure, it's going to be between two -- two wires. You have to have a source of a current and a return.
Q. In your original report you determined that the 14-3 cable was energized when attacked by fire. Is that correct?
A. That it was -- the 14-3 was energized?
Q. Uh-huh.
A. Did I say that?
Q. Page 5, the paragraph next to the bottom. Did you make the statement, "We can conclude that the 14-3 cable was energized when attacked by fire"?
A. The --
Q. First of all, answer my question. You made that statement, right?
A. Yes.
Q. All right. What was the basis for that conclusion?
A. Well, the basis for that was we, at that point, had no information that this could have been a very unusual event, which was that it was energized by the -- that the arcing event was from the lightning. And so any time you have an arcing event,

Page 116

you know that the cable was energized. The cable, indeed, was energized. But at this point all we're saying is that it was energized.
This seems to imply that it was energized and that the arcing was from the house current, but that's really not what I was intending to say. All I'm saying is that we know that it was energized. We had an arcing event and, therefore, there was energy available.
Q. No, that's not what you're saying. You're saying here, "We can conclude that the 14-3 cable was energized when attacked by fire." Right?
A. That is what it says, yes.
Q. And you changed that, didn't you?
A. Didn't explicitly change it.
Q. Is your opinion still that the 14-3 cable was energized when it was attacked by fire?
A. My opinion now is that it probably was not.
Q. So you have changed it?
A. I didn't explicitly change it in the report. You asked me if my opinion now is -- and I didn't specifically state that in this report, but my opinion now is that it probably was not energized when it was attacked by fire.
Q. And what is it about your present opinion

Page 117

that leads you to believe that the 14-3 cable was not attacked by fire?
MS. MACLEOD: Objection to form.
A. I think you meant another question, Mr. Ellis. It was attacked by fire. But I think you meant another question.
Q. Well, yeah, okay. Why is your opinion changed from what you gave in the original report that the 14-3 cable was energized when attacked by fire?
A. We now -- based upon the examination at Mr. Goodson's facility, we now have information that tells us that the -- that -- if you want to call it the damage on the ground wire of this 14-3 cable was the result of current from lightning. We did not have that information prior that would allow us to make that determination.
Q. You didn't have the information beforehand?
A. Correct. We didn't know for sure that this was the ground wire that had the arcing on it.
Q. Why didn't you know that?
A. Because we hadn't been able to strip the wires back all the way.
Q. What difference would that have made to you?

Page 118

A. If I had known --
MS. MACLEOD: Objection, form.
A. -- it was the ground wire?
Q. Yes.
A. Then I would have a different opinion. The -- if you have arcing on a ground wire and no arcing anywhere else, it's not going to be the result of house current -- being energized by house current.
MR. ELLIS: Why don't we take a -- well, let's see. It's 12:00 noon. Let's go off the record.
THE VIDEOGRAPHER: Going off the record at 12:05 p.m., ending tape 3.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 12:47 p.m., beginning tape 4.
Q. (By Mr. Ellis) Mr. Simmons, before we broke for lunch, you had made a distinction between direct contact arcing and arcing through char. Do you remember that?
A. Yes.
Q. Do you have any references that you would rely upon to establish that distinction?
A. This is discussed in many different texts or different books that have been published on fires.

Page 119

NFPA 921 is certainly one. The Fire Ignition Handbook is another. Again, this is a real -- it's a very commonly discussed subject, and I can't quote every reference that I've ever looked at.
Q. But at least those two you say draw a distinction between arcing through char and arcing through direct contact?
A. Or parting arc, yes.
Q. All right, sir. Isn't it true that you were always in a position where you could determine that the arcing artifacts were on one wire of this circuit, namely the ground wire?
A. No, I did not believe so.
Q. Why weren't you able to do that? You had the physical evidence in front of you, right?
A. The -- to really confirm that required some level of destructive examination. I knew that there was going to be a more detailed evidence examination later. I elected not to do any level of destructive examination.
Q. You wouldn't have to destroy the evidence to put it under an x-ray, for instance, right?
A. We do not have an x-ray in our facility.
Q. You don't. But you could have, couldn't you?

Page 120

A. I could have -- I'm not sure I could have because that level of examination needs to be witnessed by all parties, and so the -- the proper decision was to conduct that sort of examination when all parties could be present such as we did at the Goodson facility.
Q. Was the breaker for this circuit tripped?
A. Which circuit, Mr. Ellis?
Q. The fire alarm.
A. It was reported to me that that breaker was tripped.
Q. What tripped it?
A. You're asking me now?
Q. Yes.
A. Now I believe that it was tripped by current from lightning.
Q. But before you thought it was what?
A. Before I didn't know for sure.
Q. You didn't have an opinion?
A. Well, the only information that I had available would suggest that it was from house current.
Q. So you thought it was a hot wire?
A. That was the assumption -- the reasonable assumption at that time.

Page 121

Q. And your opinion changed?
A. Additional information has become available that allowed me to refine my opinion.
Q. You've now reached the opinion in the new report that there was arcing from the radiant barrier sheathing to the 14-3 cable. Is that correct?
A. Yes.
Q. All right. Show me on any photograph in your new report the physical evidence demonstrating that there was an arc from the RBS to the 14-3 cable.
A. There is no photograph in my report that would show that.
Q. Did you see any photograph that shows that which is not in your report?
A. The photograph and the evidence is of the arcing on the ground wire, and that includes photographs and SIM analysis performed at Mr. Goodson's lab.
Q. Just to be clear, though, you have not seen any photograph which would show that there was arcing from the RBS to the 14-3 cable?
MS. MACLEOD: Objection to form.
A. I believe that the photographs I just referenced show that.
Q. (By Mr. Ellis) And the photographs you're

Page 122

referring to is Photo 5 on page 5 of your amended report which just shows the ground wire from the 14-3 cable?
A. And all the photographs that were taken at Mr. Goodson's lab which are on a diskette in my file.
Q. Again, just of the 14-3 cable, correct?
A. I'm sorry. Are you asking if --
MS. MACLEOD: Objection, form.
A. -- all the photographs are just of the 14-3 cable?
Q. Right.
A. I believe there are other photographs of the 14-2 cable.
Q. We're talking about the 14-3 cable arc at this point, okay?
My question to you is: Do you have any photographs of the radiant barrier sheathing which shows some physical damage, some physical information, some physical evidence that you would rely upon to demonstrate that the arc came from the RBS to the 14-3 cable?
A. Radiant barrier in that immediate vicinity was consumed in the fire, no longer existed after the fire. The evidence is on the wire itself.
Q. Is the answer to my question that you don't

Page 123

have a photograph, then, of the RBS which shows any arcing from the RBS to the 14-3 cable?
MS. MACLEOD: Objection, form.
A. Of course, no one has that photograph. The material no longer existed after the fire.
Q. (By Mr. Ellis) Is the answer no? I mean, why is it so hard just to say no, there's no evidence of it?
A. That was not your question, Mr. Ellis. You asked if I had any photographs that showed that and I believe I have photographs that show it. But now you want to refine it to evidence -- to a photograph of the RBS material.
Q. That's what I asked you. And you apparently have trouble saying that there's no photograph of the --
MS. MACLEOD: Objection.
Q. (By Mr. Ellis) -- RBS which would help support your theory that there was arc from the RBS to the conductor.
MS. MACLEOD: Objection, form.
A. May I have -- I may have misunderstood your question that was a fairly long question that involved evidence of the arcing, which is also -- which is on the wires. But specifically about the

Page 124

RBS material in the location where those arcs occurred, that RBS material did not exist after the fire.
Q. Are you able to -- was that part of the RBS consumed during the fire, to your knowledge?
A. To my knowledge, the foil on the material was consumed, the laminate, what I'm calling the lamination on the OSB.
Q. Do you know whether or not that portion of the radiant barrier sheathing was removed and destroyed after the fire?
A. I don't know that, of the OSB, if that was removed.
Q. Are there any photographs that you're aware of which would show the location where the section of the 14-3 conductor which is depicted in Photo 5 existed at the time of the fire?
A. There are photographs taken by Mr. McGraw that show that wire after the fire. Whether it's in the exact position that it was during the fire, almost certainly not. But how much it may be displaced, I don't know.
Q. And you've examined those photographs by Mr. McGraw, correct?
A. I have viewed them, yes.

Page 125

Q. Tell me what you believe the distance was from the RBS to the 14-3 cable when this arcing event took place.
MS. MACLEOD: Objection to form.
A. Ask your question again, Mr. Ellis.
Q. (By Mr. Ellis) Tell me what you believe was the distance between the RBS and the 14-3 conductor when it took -- when the arcing event took place.
MS. MACLEOD: Objection, form.
A. I have not formed an opinion of exactly how close it was. It would have been within inches.
Q. How far could the arc have traveled from the RBS to the 14-3 cable to create this arcing artifact?
A. Arcing due to lightning voltage could have traveled a great distance.
Q. What distance is that?
A. Theoretically, lightning can arc many feet. In this environment it would have been, for my opinion, it is -- would be measured in inches probably.
Q. But it could have gone several feet?
A. Theoretically.
Q. All right. When the wire was examined either in your laboratory or Mr. Goodson's, was any

Page 126

evidence of aluminum deposits found on the arcing artifact of the 14-3 cable?
A. No.
Q. Would you have expected to see any deposits of aluminum on the 14-3 cable?
A. Given all the rest of the information, no, would not have expected to see it.
Q. What's all the other information that leads you to believe that you would not have seen an aluminum deposit on the wire?
A. Information that tells us that this was arcing from the RBS material to the -- to the ground conductor of this cable, based upon the fact that it's -- only a single wire and only the ground wire has arcing, that tells us that this arcing was through insulation. This was arcing through insulation, which is very similar to -- arcing through char is actually arcing through insulation. It's just whether -- how much it's been charred before the arcing occurs.
But the fact that it was arcing through insulation tells us that any aluminum is going to be embedded in that insulation sheathing and would not have made it to the wire.
Q. Turn to page 7 of your new report,

Page 127

Photograph No. 9. Here you say, "Photos," plural, "such as Photo 9 show conclusive evidence of arcing at the joints between radiant barrier sheets along the path between the fireplace chimney and the dryer vent." Do you see that?
A. Yes.
Q. What specifically on the photograph shows that?
A. I want to make sure I'm answering the "that" that you're talking about, Mr. Ellis. So you're saying that shows that there was arcing?
Q. Shows the conclusive evidence of arcing at the joints between radiant barrier sheets along the path between the fireplace chimney and the dryer vent?
A. The damage pattern on the foil -- a damage pattern such as that I have -- is not caused by mechanical damage, No. 1. It's a very irregular pattern and it is completely consistent with what electrical -- the type of damage that electrical arcing generates. There is evidence of melting along the fine edges. There is --
Q. Let me stop you there because what I'd like for you to do is to mark these pieces of evidence for us.

Page 128

MR. ELLIS: Skye, have you got a pen that you can loan to Mr. Simmons so we can do this?
(Discussion off the record)
Q. (By Mr. Ellis) All right, sir. Now, what I want you to do is to describe for me what this conclusive evidence of arcing is. And when we do so, what we'll do as we describe it is mark it with this location on Photograph No. 9 with circles and with letters off to the side. So tell us what you're doing as you go along and mark it for us.
A. You'll have to tell me what you want me to mark, Mr. Ellis. I'll tell you --
Q. It's the same thing that I asked you to do before, which is to show us the conclusive evidence of arcing at the joints between the radiant barrier sheets along the path between the fireplace chimney and the dryer vent.
A. Based upon that question, I'm going to circle this whole photograph. I think you want me to be more precise than that.
Q. Yeah. Show us the evidence on the photograph. What is it?
A. First piece of evidence is the irregularity of the damage pattern that is not consistent with any known mechanical damage but it is consistent --

Page 129

completely consistent with electrical damage.
Q. All right. Anything else?
A. Do you want me to circle that?
Q. Well, that sounds like a general comment about the whole photograph again, so --
A. It's about the damage pattern, Mr. Ellis.
Q. All right. Then circle what it is about the damage pattern that helps you with that.
A. (Witness complies.)
Q. Okay. Take a -- draw a line out to the side of that and put a "C" next to it.
A. (Witness complies.)
Q. Anything else other than the irregularity of the pattern?
A. It's difficult to see in this photograph in this report. On a computer screen you can see it much -- there is evidence of melted aluminum.
Q. Where are you seeing that?
A. Again, in this photograph it's difficult to see. I believe that in the far left side of the damage pattern, there's a couple little points right here that I believe have it. But again, on this paper printed photograph, it's difficult to see. You have to look at it on a computer screen to really be able to see it.

Page 130

Q. Do your best with this photograph.
A. Okay. I believe --
Q. Circle the ones that you're talking about and we'll mark those with a "D" out to the side.
A. Okay. So difficult in this photograph.
Q. All right, sir. Any other conclusive evidence of arcing of the joints?
A. The black sooting that you see on the material behind the aluminum.
Q. All right. Would you circle that and mark it with an "E"?
A. It's actually in pretty much the whole picture. It's here, it's here, it's here, it's here.
Q. Just put circles around these areas and then connect them with an "E."
A. They're going to include some other areas.
Q. Are you done?
A. Again, I could -- I could circle the whole -- the whole...
Q. Is there any other conclusive evidence of arcing on this photo?
A. The fact that it occurs on two adjacent pieces of the foil, same pattern, actually extends across two adjacent pieces of foil at a joint is evidence in and of itself.

Page 131

Q. Anything else?
A. That's what comes to my mind right now.
MS. MACLEOD: Neal, before we go on, should we label that joint "F"?
MR. ELLIS: I don't mind if he goes ahead and does that.
Q. This area that's identified by Photo No. 9, do you know where it was in relationship to the area of fire origin?
A. I believe this was immediately -- if you're looking up at the roof, immediately to the right of the portion of the RBS material that had been removed and replaced.
Q. Page 17 indicates that there are photos which show conclusive evidence of arcing at the joint. What other photos other than Photo No. 9 show this?
A. These are part of Mr. McGraw's photograph package, and there were several. I can't tell you off the top of my head. This was produced as a representative sample.
Q. You didn't put those in your report, though, did you?
A. I did not put every one, no.
Q. Just Photo No. 9, sir?

Page 132

A. Right. There would have been many. Too many.
Q. Are the -- let me ask you to turn to page 8 of your amended report.
In the middle of the second paragraph you say, "The clearly visible localized black soot deposits seen in photos leave no doubt that combustion occurred in some of those locations and that the heat effects included combustion, paren, burning." Do you see that?
A. Yes.
Q. Now, have you identified for us on Photo No. 9 what you believe were the localized black soot deposits?
A. These are examples of the localized black soot deposits.
Q. And you marked those with what letter?
A. Those are "E."
Q. All right. Neither you nor Mr. McGraw took any action to sample these localized black soot deposits and determine whether they were, in fact, soot, did you?
MS. MACLEOD: Objection to form.
A. I'm not sure what Mr. McGraw did. I did not.

Page 133

Q. But that is something that you could have done in order to confirm that what you were looking at was, in fact, soot, correct?
A. It was not something I could have done. I had no access to this material.
Q. You don't think that if you had asked Mr. Taylor to have access to his house, he would have said yes? Is there any doubt in your mind that he would have allowed you access?
MS. MACLEOD: Objection to form.
A. It's my understanding that when I was working on this, that the house had been repaired. I had no knowledge that this house was still in the condition -- in this condition.
Q. (By Mr. Ellis) And you never made any effort to try and ask Mr. McGraw whether or not he would do that, namely, take a sample of what you are now calling soot deposits to examine and confirm that they were, in fact, soot rather than something else, right?
A. Again, it's my understanding that Mr. McGraw had already completed his examination and that this house had probably been repaired and that this material was no longer available.
Q. But you never did anything to try and

Page 134

confirm that, did you, by asking Mr. McGraw whether or not he still had access to the material and whether or not what you have told us are black soot deposits could be examined and confirmed as black soot deposits?
A. Mr. Ellis, in an investigation like this, you only do things that are deemed reasonable. If there's a reasonable reason to pursue some additional action, then you might consider requesting it. But in this case it's my opinion that there was no reasonable reason to further sample that or to -- but again, in addition, it was my understanding that this material was no longer even available. It wasn't possible to do.
Q. Let's go back to the first part of your answer. So confirmation that these were, in fact, soot deposits would not have been a reasonable request for you to make. Is that right?
A. There was no reason to believe that they could have been anything other than that, Mr. Ellis. There's no information at all that suggested that that -- the black deposits could have been anything other than soot.
Q. The answer to my question is, though, that you did not deem it reasonable to go back and try to

Page 135

confirm it?
A. In this particular case, based upon the information that I had, that's correct. I did not deem it reasonable.
Q. Page 9 of your amended report, sir -- before we do that, let's go to page 9 of your original report.
What does Diagram No. 1 show?
A. This is a pictorial of a structure with a fireplace chimney and a dryer vent and a dryer and a path that electrical current from a lightning strike would very likely take in this case.
Q. Does it illustrate, as you've indicated on page 9, the roof's electrical environment?
A. It indicates a portion of it.
Q. And have you indicated here that everything in red is a potential electrical current path for lightning? Is that right?
A. Yes.
Q. So there were a number of other paths to ground, were there not, than the one that you've illustrated in Diagram No. 2 of your amended report. Is that right?
A. I'm going to answer no. There were only two identified reasonable paths.

Page 136

Q. What were the two identified reasonable paths to ground?
A. This path and the path to the ground wire of the 14-3 cable.
Q. So by "this path" you mean the path from the fireplace chimney through the dryer vent to the dryer?
A. Yes.
Q. And the other path would have been through the ground wire of the 14-3 cable?
A. Yes.
Q. And you don't recognize that there are any other potential paths to ground?
A. Electrical current flows through the path of least resistance to its destination. And lightning always goes to ground and it can take many paths, but it prefers -- as electrical current always does, it prefers the path of least resistance, the most direct path. There were very probably small amounts of current that flowed in other locations, but this would have been the predominant path of the electrical current.
Q. Do you recognize that there were other possible paths for the current to take, for instance, through the gutters, piping in the attic and through

Page 137

other means to get to ground or not?
A. I have no information that those were connected to ground, and there has to be a direct connection to ground or through a path. We know for sure that the dryer was connected to ground. We know for sure that the dryer vent was connected to the dryer.
Q. If you look at Diagram No. 2 on page 9 of your amended report, sir, what does that show?
A. This is a top down view representative of a roof section with a fireplace chimney and a dryer vent.
Q. All right. And it's a depiction of the north-facing roof. Is that correct?
A. Yes.
Q. And what are you depicting as the electrical current path here?
A. The red line.
Q. And that shows a path that goes from the fireplace chimney to the dryer vent. Is that right?
A. An approximate path, yes.
Q. And this path, according to you, would have gone diagonally across the north-facing roof through what you say is the fire origin to the dryer vent. Is that right?

Page 138

A. Yes. These drawings and shapes, of course, are very approximate. They're just representative. No dimensions on here at all.
Q. I understand that. But what you're depicting is a line that goes diagonally down from the fireplace chimney to the dryer vent, right?
A. Generally, yes. We have photographs of arcing evidence around the chimney. We have photographs of arcing evidence around the dryer vent. We have photographs of arcing evidence generally along this path. And I saw no photographs of arcing evidence anywhere else.
Q. I know you didn't look at the nails in the roof, correct?
A. I'm sorry. When you say "look at," look at in photographs or do an examination?
Q. You didn't physically examine the nails in the roof, right?
A. No, of course not. Nobody does.
Q. Did you see any physical evidence based upon the photographs that the nails had been energized by lightning?
A. Yes.
Q. What was that?
A. The somewhat circular arc damage patterns

Page 139

around the nails, along with the fact that those nails were directly connected to the flashing of the fireplace chimney, which we know was energized by lightning.
Q. Let's turn to page 9 of your report under the section that is entitled "Testing Performed." Do you see that?
A. Is this the amended report?
Q. Yes. About halfway down through the first paragraph there, your sentence says, "This testing has confirmed sheet resistance of the radiant barrier sheathing material such that when the current density in the material exceeds approximately 300 amps per square millimeter, resistive heating within the material generates temperatures higher than the ignition temperature of common material such as paper, glue and light plastics." Correct?
A. Correct.
Q. In your original report what you said was that the resistive heating within the material "always generates temperatures higher than the ignition temperature of common materials," right?
A. When the current density exceeds a certain level, yes. Either of those -- both of those statements are correct.

Page 140

Q. Why did you delete the "always" in the statement which appears in the amended report?
A. I don't recall explicitly deleting that. It was just an editorial variation that both of those statements are equally true.
Q. In the next sentence it says, "As a result, when the current density exceeds this level, the paper and glue layers and other light combustibles in contact can easily ignite in flame." Do you see that?
A. Yes.
Q. In your original report you said it would always ignite in flame. Why did you change that?
A. Again, I -- that was just an editorial verbiage change. There's no specific reason. I don't even explicitly recall making the change. Again, the meaning is the same. There's no difference in the --
Q. So both statements would have been true, the one that appears in the original report and the one that appears in the amended report. It would always ignite in flame, in other words?
A. Let me...
Q. It's page 10, the original report, second sentence from the bottom.

Page 141

A. In the testing that we had performed that these determinations were based upon, it always ignited in flame. That's where that came from. Actually, at the time of this report, we had conducted additional testing.
Q. And what did that show, that it always ignited in flame?
A. That there -- we were actually able to generate -- up until this point, every time we energized the material, the paper and glue always ignited in flame. Subsequent to that we were able to, in certain cases -- not very often -- to -- well, to have a situation where only the aluminum foil ignited in flame.
Without a very detailed analysis of the paper, we can't tell -- and the glue -- we couldn't tell how much of the glue burned. I'm quite sure that the glue on top of the paper burned away, but we weren't able to confirm that. It required much too detailed of an analysis. But at least in one case, part of the paper remains.
Q. All right. So it didn't always ignite in flame?
A. Subsequent -- in testing that we performed subsequent to this original report.

Page 142

Q. In subsequent testing after this original report, then the paper did not always ignite in flame, correct?
A. Correct. There was one event where it -- the paper did not -- the glue did appear to but the paper did not. And the aluminum foil did ignite in flame.
Q. In the testing which you performed, what was the current and what was the duration of the current that was applied to the RBS?
A. Which testing, Mr. Ellis? We've done many tests.
Q. What record do you have of your tests?
Let me ask you, first of all, how many tests have you performed?
A. So many I couldn't count them. We probably cumulatively have spent more than a hundred hours testing this material.
Q. And what's the shortest duration period that you've applied?
A. The shortest one that we were able to record was a rise time of 1 microsecond -- less than 1 microsecond, well less than 1 microsecond, a duration of 20 milliseconds, but that is at a current level hundreds, thousands of times less than

Page 143

lightning can provide.
Q. For somebody who's not an electrical engineer, define for me what you mean by "rise time."
A. That's how long it takes the voltage to go from zero to whatever the level it's going to be to. Technically it's the 10 to 90 percent point but...
Q. And duration is something different than the rise time?
A. Duration is how long the electrical energy is applied.
Q. And the shortest period of duration that you applied is 20 milliseconds. Is that correct?
A. Shortest we were able to record. We know there was some shorter than that, but we didn't capture them on the subsequents. But again, this was at a current level probably thousands of times less than what lightning can provide.
Q. Thousands of times less?
A. Yes.
Q. What current level?
A. They was between 1 and 200 amps.
Q. What did you use to energize the RBS?
A. This was actually an automotive battery.
Q. A battery that was taken out of a vehicle?
A. Purchased separately.

Page 144

Q. Sir?
A. It's an automotive battery, but it didn't come out of a vehicle. It was new.
Q. But it was an automotive battery?
A. Yes, it was an automotive battery.
Q. And when you did the test that lasted a duration of 20 milliseconds, what was the result?
A. Radiant barrier material erupted in flame.
Q. Did the flame go out or did it continue to burn?
A. Since there was no other light combustibles in the area, of course, after a few seconds, it went out.
Q. So it sustained a flame for a few seconds?
A. We didn't precisely measure how long the flame sustained. It was certainly long enough that it would have ignited any nearby combustible material.
Q. Just to be sure, though, you didn't measure how long that was, did you?
A. No, but you can estimate in those time -- in those time frames you can estimate pretty closely. So it was a crude measurement, but it was measured.
Q. All right. And did you record how long the flame lasted?

Page 145

A. It was written on a piece of paper that was there at the time. It wasn't recorded in a report or anything like that.
Q. Okay. When you do these tests, what kind of record do you make of the tests?
A. Depends upon the test. There's a whole gamut -- there's a whole range of types of testing that you do when you're -- initially you're doing what you call discovery testing, which is you don't know what you're going to see, you're just putting it through some paces to see if there's anything more to look at.
Then you will begin to do much more characterization type testing to refine what you think that you have learned in a discovery testing and then you'll move on to where you're actually documenting the test, where you're taking photographs, we have a video camera running. So we've done all of the above.
In the early cases, there's no residual record when we were just discovering. Later and for certain tests, the -- we have documented them through photographs, through video. Some of them -- some of the results have shown up in the charts and graphs in our reports, in our articles.

Page 146

Q. What kind of record do you have of the tests that you just described, the one that lasted for 20 milliseconds?
A. You have a video of it.
Q. Is the current that you applied continuous current?
A. Yes. This is DC from an automotive battery.
Q. So it's not transient current like you might experience in a lightning strike, right?
A. No, sir, it is transient current like you might experience in a lightning strike.
Q. It is transient?
A. Lightning -- there's a difference between continuous current and transient current. Transient currents are continuous. Lightning is unidirectional. It's DC. It's not alternating current.
Q. Were you trying to replicate lightning in this test?
A. Not at all.
Q. What were you trying to do?
A. Just to document the response of the material to a short impulse, a fast rise time, short impulse. It's not reasonably possible to duplicate

Page 147

lightning.
Q. It's not possible reasonably to replicate a lightning strike?
A. Correct. What it is possible to do is to demonstrate fundamentals of how something responds that are the same regardless of the source of electrical current. Lightning is just one of many sources of electrical current.
There's nothing magic about lightning. There's nothing that's greatly different. Once it becomes -- once it gets into a conductor and becomes electrical current, it behaves exactly the same as current from any other sources.
Q. You told us that it wouldn't be reasonable to try and replicate the current from a lightning strike. So I want you to tell me in what ways your test, the one that we've just been talking about, differs from a lightning strike.
A. The only significant difference is the amount of current available.
Q. What do you mean by "the amount of current available"?
A. A lightning strike can generate -- can deliver hundreds of thousands of amps. We were able to deliver maybe a hundred amps.

Page 148

Q. I'm sorry. How many?
A. We were able to deliver a little over a hundred amps. The lightning can deliver hundreds of thousands of amps.
Q. So how many orders of magnitude difference is there between the magnitude of a lightning strike and what you delivered, which was just over 100 amps?
A. Well, that would have been something over three orders of magnitude.
Q. Something over three orders of magnitude?
A. Yes, a thousand times more is three orders of magnitude.
Q. It's a lot more than just a thousand times, isn't it?
A. A hundred thousand versus a hundred is a thousand times.
Q. And what would be the range of current in a lightning strike?
A. It's a very, very wide range and people don't -- if you look at the STRIKEfax and that sort of thing, they will give you an estimate of how many kiloamps the strike was. This is only a gross estimate, but they can range anywhere from tens of kiloamps to, you know, hundreds and thousands of kiloamps. But those are not precise measurements at

Page 149

all.
Q. All right. You said that your test lasted for approximately 20 milliseconds. Is that correct?
A. Yes, this particular one.
Q. And what is the duration range for a lightning strike?
A. Big variable. Typically people talk about in a range of 100 microseconds, but it can be much longer. Also, there are types of lightning strikes that -- there's different terminology used, but they're basically continuous. You'll get multiple lightning strikes that really all act as one. There are also many other phenomenon in a -- electrical phenomenon get involved in determining how long the current -- the current from a lightning strike continues to flow. There are capacitance effects, there are inductive effects. There are many things in a total environment that will affect how long that current flows. Generally it flows much longer than just the duration of the lightning strike itself.
Q. You told us that there were such things as continuous lightning strikes --
A. That's a -- that's a term that I'm pulling off of my head. It's a descriptive term. It's probably not the actual term that's used. But there

Page 150

are, yes.
Q. Is there any evidence of what hit the Taylor home was a continuous lightning strike?
A. I have no evidence of that.
Q. But typically what you say is is that a lightning strike has been said to have a duration of approximately 100 micro seconds?
A. No, I said that typically people speak of lightning strikes in terms of hundreds of microseconds, in the 100-microsecond range.
Q. In orders of magnitude, how is that different than your 20-millisecond duration?
A. That's a couple of orders of magnitude, in that range. However, Mr. Ellis, higher current levels -- or lower current levels to generate the same amount of heating will require longer. Higher current levels will have the same effect, same result in a much shorter time. So trying to equate a hundred amps to tens, hundreds of thousands of amps, there's not a linear relationship there at all.
Q. What's the formula for determining energy?
A. Well, in this case the power from electrical current -- P equals I squared R, power equals the current squared times the resistance. For a given level of current -- sorry. For a given level

Page 151

of resistance, a ten times increase in the amount of current will result in a 100 times increase in the amount of power delivered and, therefore, the amount of heat generated. It's a logarithmic relationship.
Q. The amount of energy is a direct function of both the amount of current and time applied, correct?
A. Yes. I want to be careful about the direct relationship. It is a function of, yes.
Q. All right.
A. The more current applied, the less time required to generate the same heat. And to clarify just a little bit more why the testing that we do is valid in assessing the effects of lightning, when it has been demonstrated that something can be heated to a certain level with a small amount of heat applied, that is sufficient proof that it can be heated to that same level with a larger amount of heat applied. If you can heat -- if you can ignite something with a match, you can ignite it with a blow torch. So if we could generate with a very short impulse, we could ignite this material with 100 amps.
Q. Do you know what the result would have been if you had done your same test but instead of applying it for 10 milliseconds --

Page 152

A. 20 milliseconds.
Q. Sir?
A. 20 milliseconds.
Q. 20 milliseconds. Instead of a duration of 20 milliseconds you had applied it for 10 microseconds, do you know what the result would have been?
A. With that amount of power?
Q. Right.
A. No.
Q. You don't know?
A. Not with that amount of power, no.
Q. You indicated just a little bit ago that there was one test where the paper did not burn?
A. Yes.
Q. Was that this test?
A. No.
Q. What test was that?
A. It was a test where we were testing the battery connections to make sure that we had a good, balanced setup.
Q. By "battery connections," you mean the tests were performed with the auto battery?
A. Yes.
Q. And when you were testing it, then, do you

Page 153

know what the length of time was that you applied the current to the RBS?
A. It wasn't recorded exactly. I know it was longer than 20 milliseconds. On an oscilloscope the trace goes across the screen and how long it represents depends on what scale you have it adjusted to. If it goes off the screen, then you don't know exactly how far it went off the screen, so you don't get an exact reading. So I know that it was longer than the duration of it.
Q. On page 9 --
A. Which report, sir?
Q. Page 9 of the amended report. The items that you're referring to there that -- let's see. Let me just try to get it exactly.
Nine lines down you see the words "paper, glue and light plastics"?
A. Yes.
Q. You had "wood" in there in your original report. Why did you change that to "plastic"?
A. Light plastics were involved in this particular fire. Wood was as well, of course, but light plastics were involved. So it seemed like the appropriate thing to do to include that.
MR. ELLIS: Let's go ahead and switch

Page 154

tapes.
THE VIDEOGRAPHER: Going off the record at 1:45 p.m., ending tape 4.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 1:53 p.m., beginning tape 5.
Q. (By Mr. Ellis) Mr. Simmons, do you consider yourself an expert in lightning?
A. I consider myself an expert in one particular aspect of lightning.
Q. What's that?
A. That is its behavior in conductors in structures -- after it has become current in conductors and structures.
Q. Do you consider yourself an expert, then, as to that part of lightning when it gets into a conductor in a structure?
A. Yes, when it becomes current in a conductor, it's at a structure.
Q. When it becomes current in a conductor?
A. Yes.
Q. In a structure. All right, sir. Can you tell me what amount of current in a lightning strike is necessary to ignite TechShield?
A. It's not a function of the amount of

Page 155

current. It's a function of the current density. If the current density in TechShield foil exceeds a certain minimum of amount -- and it's going to vary somewhat from specimen to specimen -- it's in the range of 300 amps per square millimeter. When the current density exceeds that level, the material will heat to and beyond the melting point.
It's not dependent upon any specific amount of current. It's not dependent upon the source of current. The source of current can be lightning. The source of current can be a pen light battery. It's strictly a function of the current density.
Q. What amount of current in a lightning strike is necessary to damage TechShield without bringing about ignition of the TechShield?
A. Totally depends on your definition of "damage," Mr. Ellis. I don't know.
Q. What level of current is necessary in a lightning strike to ignite OSB without a radiant barrier?
A. I have not measured that. It also totally depends upon the current path.
Q. Can a house ignite that has OSB without -- without the aluminum and still burn?

Page 156

MS. MACLEOD: Objection to form.
A. Just so I understand, these are questions that are coming from Mr. Goodson, it appears. The --
Q. (By Mr. Ellis) I'm asking the questions.
A. Yes, sir.
Q. Can a house ignite that has OSB without the aluminum and still burn?
A. Of course. But now, ignite from what source and -- I mean, there's many -- it's open-ended. But yes, of course, a house with standard OSB can ignite and burn.
Q. All right. Tell me what you know about the lightning strike that hit the Taylor home. In other words, what was the duration, what was the polarity and what was the intensity in amps?
MS. MACLEOD: Objection to form.
A. I don't recall that off the top of my head. The specifics, I'd have to look back at the STRIKEfax data. But I recall that it was a relatively low intensity strike. It wasn't -- it was tens of kiloamps is what I recall. I could be wrong. And other than that, I don't -- I don't have any of the specifics and I did not research them in great detail because they were not significant.
Q. (By Mr. Ellis) But you were able to

Page 157

identify this particular strike on the STRIKEfax reports?
A. I recall seeing a report and I want to say it reported it at 40 kiloamps but I -- this is a vague recollection. Again, the exact amount of current is not significant.
Q. I'm going to show you what's been marked already in another deposition as Exhibit No. 34. That was a LightningTrax report that Mr. McGraw attached to his report. Can you, by looking at the LightningTrax report, identify the specific lightning strike that hit the Taylor home?
A. Uh-huh.
Q. Did you say yes?
A. I'm sorry, I'm just -- it's not -- from this report it's not possible to identify the specific one. Looks like it could have been one of several or it could have been several.
Q. Identify for me which of the several those would be.
A. It could have been any of the first six or seven or eight.
Q. On the last page of this exhibit?
A. Yes.
Q. Any one of the eight listed here for No. 1

Page 158

through 8. Is that right?
A. All right. Let's go over it. At least through 9.
Q. And why did you take it through 9?
A. Because it's pretty well known that STRIKEfax is not -- I have confirmed that a STRIKEfax that listed a strike at 9/10ths of a mile was a strike that hit a different house. So STRIKEfax, the distance in miles is approximate and also, this distance is measured from up in the atmosphere at some altitude. It is not measured where it impinges on the ground, where it actually strikes the ground.
So the exact distance on the STRIKEfax you cannot -- you can't go by. Even if it's 2 miles away, then you're pretty sure it was not involved but if it's anywhere within, like, a half a mile, it could have been involved.
Q. So you're willing to take anything up to about .6 of a mile because that's what No. 9 is, right?
A. Yes.
MR. ELLIS: Let's mark this one.
(Exhibit 42 marked)
Q. I'm showing you what's been marked as Exhibit 42.

Page 159

A. 42.
Q. Which was Attachment No. 6 to Mr. McGraw's report. Is that a STRIKEnet report?
A. Yes, this is a Vaisala report.
Q. By looking at this STRIKEnet report that was attached to Mr. McGraw's report, are you able to identify the specific lightning strike that hit the Taylor home?
A. I'm not sure where the Taylor -- from here I can't confirm where the Taylor home is relative to this center point of this track.
Q. Do you know whether or not Mr. McGraw would have placed the center point at the Taylor home?
A. I'm not sure. You would assume that he would have placed it there or near, but I can't confirm that.
Q. Is the answer, then, that you can't tell?
A. From just looking at this document, I can't tell for sure where this Taylor home was relative to the center of this track. But relative to the center of the track, we have some -- many strikes that are out miles and some that are within a half a mile. So you would assume that it has to be one of the closest one -- closer ones.
Closest one that I can identify is

Page 160

half a mile and it's minus 25 kiloamps. But I don't know how that corresponds to the exact time that anyone would have...
Q. You can put that exhibit aside. Other than the resistance calculation which you gave us earlier, can you tell me what other calculations you carried out for this case?
A. We carried out calculations to determine the current density levels, calculation to determine the size of a specimen of material that we needed to test to achieve a certain current density level with a known current source.
Q. Any others?
A. Those are the ones that come to my mind.
Q. What level of current was present in the lightning strike that hit the Taylor house?
A. Again, I don't know for sure. We looked at a STRIKEfax and you can't tell positively which of those strikes was the one that hit the house. But the one that I saw that looked most likely on that report indicated minus 25 kiloamps.
Q. What was the duration of the strike?
A. It's not measured on here, I don't believe, unless there's something new. No, it's not measured.
Q. How important was your testing and was it

Page 161

necessary to prove your hypothesis?
MS. MACLEOD: Objection, form.
A. I'm sorry, Mr. Ellis. Ask that again.
Q. (By Mr. Ellis) How important was your testing and was it necessary to prove your hypothesis?
MS. MACLEOD: Objection to form.
A. Which hypothesis are we talking about here, Mr. Ellis?
Q. (By Mr. Ellis) That the RSB -- or RBS caused the fire.
A. And I'm going to assume -- since you didn't bound it, I'm going to assume that it's the total body of the testing that we have performed, and the answer is that the knowledge that we've gained in our testing is very important in conclusions that we reach in these cases. Because it provides the fundamental knowledge of how this material performs under certain conditions when energized.
Q. Do you recognize a difference between hot and cold lightning?
A. I know that there is a differentiation, but I couldn't -- I couldn't give you the definition that you've probably read somewhere.
Q. Can you define "hot lightning"?

Page 162

A. No, I'm not going to try to define either one.
Q. Can you define "cold lightning"?
A. Again, I'm not going to attempt to define -- to generate a definition for either one.
Q. I understand you may not want to try to attempt it, but can you?
A. Okay. I can't.
Q. Do you know whether or not the lightning which struck the Taylor home was hot or cold lightning?
A. I have no information to that effect.
Q. Do any of your opinions or their underlying bases disagree with NFPA 921?
A. No.
Q. Did you make any use of ANSI standards as you performed your testing?
A. Just general methodology that is prescribed in ANSI -- in testing. But there are no ANSI prescribed tests or ASTM prescribed tests for what we were testing for. That's one of the big problems that we have is that no one has generated or created tests for what we need to be testing. So all of the tests that we have applied, we had to create.
Q. So similarly, you would say they didn't

Page 163

conform with IEEE C-62 standards. Is that correct?
A. IEEE C-62 standards do not apply.
Q. What about IEC series standards? Do they apply?
A. Not to my knowledge.
Q. And I take it from your earlier answer, then, there's no testing methodology in your view that does apply?
A. To the parameters that need to be tested here, correct. And we have contacted bodies such as ASTM and no one is interested in generating such testing at this point.
Q. You're aware of the fact that Mr. Goodson did a test of the purity of the TechShield aluminum, correct?
A. Yes.
Q. And his testing demonstrated that that aluminum was 100 percent pure, correct?
A. That's what I understand.
Q. Do you have any reason to dispute the findings of Mr. Goodson's testing of the purity of the TechShield aluminum?
A. I have no reason to dispute that.
Q. And you yourself did not chemically test the aluminum?

Page 164

A. That's correct.
MS. MACLEOD: Objection, form.
Q. (By Mr. Ellis) Have you seen Mr. Goodson's observation that then pieces of aluminum would be expected to ablate in circumstances like lightning strike? Do you remember seeing that in Mr. Goodson's report?
A. I remember seeing that.
Q. Do you agree or disagree with that?
A. I disagree.
Q. Why?
A. Circumstances that are experienced in a lightning strike vary widely. It's not uniform, the amount of current that flows through any path. The duration of the current flows will vary greatly, even during a single lightning strike. There's no way to make a generalization of what can be expected during a lightning strike.
Q. Page 19 you make the statement, "The testing has also demonstrated that when high voltage arcing occurs between roofing sheets with radiant barrier material, high current densities are not required for ignition to occur because of the high temperatures generated by the arcing." Do you see that?

Page 165

A. Yes.
Q. Did that testing which you referred to in this paragraph involve metal clips between the sheets?
A. No.
Q. Were the aluminum foil sheets of the RBS in contact with each other?
A. No.
Q. Turn to page 11 of your original report. Under the section that's entitled "The Role of Lightning in a Fire," do you see that?
A. Yes.
Q. You make the statement, "When an electrical appliance has failed and caused a fire, the electricity from the utility company provided the energy that ignited the fire, but we do not consider that the electricity caused the fire." Right?
A. Yes.
Q. What if you have a situation where lightning struck a house, an appliance fails and a fire results? Is the appliance detective (sic) in your view --
A. Is the appliance defective?
Q. Defective in your view, yes.
A. What you described --

Page 166

MS. MACLEOD: Objection, form.
A. -- there was no evidence of a defect in the -- you gave no indication of a defect in the appliance. I can only go based on what you just told me.
Q. (By Mr. Ellis) I'm not telling you that there's any defect in it. I want you to tell me whether or not if the appliance fails because of the lightning strike and a fire results, is the appliance defective?
MS. MACLEOD: Objection to form.
A. Is it defective simply because it failed -- it's defective after the fire.
Q. Is it defective -- because of the fact that the lightning struck it, it fails and a fire results because of the fact that it's failed, is the appliance defective?
MS. MACLEOD: Objection to form.
A. Is it defective because it failed as a result of the lightning striking it?
Q. (By Mr. Ellis) And the fact that a fire then ensues because of the failure of the appliance?
MS. MACLEOD: Objection.
Q. Would you --
A. This --

Page 167

Q. -- label the appliance as defective?
A. That's not a valid question, Mr. Ellis. I think what you're trying to ask is simply the fact that a fire ensued after lightning struck, is that evidence that the appliance was defective.
Q. The failure of the appliance has caused the fire to ensue?
MS. MACLEOD: Objection.
A. If the failure of the appliance was a result of a lightning strike, then the appliance was not defective before the lightning strike. If the failure of the appliance was not the direct result of a lightning strike, then possibly the appliance was defective. It requires more investigation. If the lightning strike caused the failure in the appliance, then the appliance -- there's no basis to assume it was defective.
Q. Let's take a different scenario. Lightning strikes a roof at a nail head, the nail head splits off, is so hot that it causes a house fire. Is the nail head defective?
A. Is the nail head -- no, the nail head -- I would not define the nail head as being defective. If this were an aluminum nail used where steel normally is and every time it's struck by lightning

Page 168

it overheats and ignites, then the nail is defective as it is being used.
Q. Turn to page 10 in the section that is entitled "The Role of Lightning in the Taylor Fire."
A. Is this the original report, Mr. Ellis?
Q. The new one. There in the second sentence you say that, "Recent field experience indicates that there have been more lightning involved structure fires in recent years because of new products being used in home construction." Do you see that?
A. Yes.
Q. And what is the basis for your statement that there are more lightning involved structure fires in recent years because of new products?
A. Our own observations at McDowell Owens Engineering over the last several years.
Q. Have you done any statistical comparisons?
A. We have attempted to -- we -- statistics in a database, the typical places that lightning data is reported and is recorded is not available. No one -- no one is reporting radiant barrier involved fires as radiant barrier involved, and it's very difficult to even find a CSST fire reported as such. So the data does not yet exist in a database -- in databases where it needs to be. Let me continue to answer the

Page 169

other question.
Our own observations --
Q. Just a second. Just to make sure that we're clear on this, your answer is that there's no data to support your statement that there's more lightning involved structure fires in recent years because of new products?
MS. MACLEOD: Objection, form.
A. We have our own local data. The number of fires that we investigate, number of structure fires, and the number of structure fires that involve new products such as CSST and radiant barrier, it's very limited data, but it's what we have available to us.
We have also spoken with a number of first responders and different fire professionals, and they relate to us the same impression. Again, they don't have a volume of hard data, but we have been told by multiple individuals that they're seeing more structure fires and their characterization of it is that the homes involved all fit the same profile. They don't specifically know that these homes include radiant barrier or CSST, but they're all newer homes built in high lightning areas and in a lot of these high lightning areas, it's simply not possible to build a home that doesn't include radiant barrier.

Page 170

It's not allowed. So we know for sure that many of these newer homes include radiant barrier.
Q. Let me ask you, first of all, about your statement that the data that you're relying upon is local data. By "local data" do you mean the experience of McDowell Owens?
A. It means data that we have and the data that we gather from talking with other fire professionals in the Texas area, in the Houston area.
Q. I want to segregate it out from McDowell Owens, and then we'll talk about other Houston area fire professionals. Okay?
A. Okay.
Q. The local data that you're talking about at McDowell Owens, in what form is that data?
A. We have a running record of all cases that we investigate.
Q. So you're just talking about the cases that McDowell Owens is asked to investigate then. That's the local data?
A. That's the hard data that we have.
Q. All right. You're not talking about any other cases that any other fire investigation professionals have been involved with, just McDowell Owens investigated cases?

Page 171

A. We don't have the exact numbers from other sources, but we have gotten summaries of their analysis of their data. So it's not just McDowell ones. McDowell ones, we have hard numbers we can prepare. Other people have described to us what they feel that they're seeing in their records, and then we have other people who have described to us just their general impressions, like fire first responders.
Q. Who is the "they" that have these summaries of other data?
A. Off the top of my head, I can't give you names. We talk to people at fire scenes usually is where these sort of conversations occur.
Q. You're talking about first responders?
A. No, I was -- I believe that you were talking about other local fire investigators that we talk to.
Q. That's really what I was asking about.
A. I thought so. Those people we normally speak to at fire scenes, and we -- we discuss different things that are going on. Those are ones. I'd have to go back and dig to get exact names. But these are people in the local area who do the same thing that we do and have some of the same

Page 172

impressions. The first responders include people like, you know, firemen, fire chiefs, fire marshals. Excuse me.
MS. MACLEOD: You want to go off the record?
THE VIDEOGRAPHER: Going off the record at 2:23 p.m.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 2:25 p.m.
Q. (By Mr. Ellis) So the summaries of data that you referred to in answer to an earlier question are held by other fire investigators that you meet at scenes of fires, but you can't give me the names of any of those?
A. Not off the top of my head. Sorry.
Q. And you've never seen the summaries of the data that they hold?
A. I've never seen anything, but yes, correct.
Q. And with respect to the McDowell Owens data that you're referring to, you haven't produced a tabulation of that?
A. I have not.
Q. This is all off the top of the head stuff, right?

Page 173

MS. MACLEOD: Objection to form.
A. It's more than that.
Q. (By Mr. Ellis) Well, have you reduced it to writing? Have we got a list somewhere that shows this increase in fires that are due to new housing products?
A. We do not have it right now. I can produce it.
Q. It doesn't exist now, does it?
A. At this moment it does not exist. The data exists. It's just a tabulation of it does not exist, a tabulation of it separately that I can produce to you.
Q. All right. We can't get any names of the other fire investigation professionals from you, so let me ask you about the fire professionals, fire marshals, fire chiefs, first responders that you mentioned in answer to an earlier question. What are their names?
A. Billy Westerson is one of them, who's a fire chief in Austin, Texas.
Q. I'm sorry. Say that again.
A. His name is in at least one of the articles that we published. Bill -- in the newspaper it was printed as Billy Westerson (phonetic).

Page 174

Q. Westerson. Okay.
A. Don't quote me on that spelling.
Q. But he's the fire chief of Austin, Texas?
A. I believe at the time that he made his report, his statement was he was the assistant fire chief. I believe now he is the fire chief of Austin or one of the little burbs just north of Austin.
Q. And you've talked to Chief Westerson?
A. I have not personally. We did this from a newspaper article that was printed and published.
Q. So when you say you did this, you mean that you read some sort of article that may have quoted Chief Westerson?
A. Yes.
Q. So have you actually talked to any other fire professionals, fire marshals, fire chiefs?
A. We have -- one of the members of our staff is a volunteer fireman in this area, and he has spoken with people. He knows everyone in the fire community, and that's where that comes from. That's where part of that comes from.
Q. Somebody in your office who's a member of the fire department?
A. Yes. Nestor Camara is the -- but again, this is all informal conversations that occur, but it

Page 175

all becomes a part of a body of information, a body of evidence. And when you get enough of it and it all seems to point and suggest something in the same direction, then you have to be -- you have to begin to pay attention to it.
Q. So this is the kind of stuff, evidence, that you would rely upon to reach the kind of conclusion that's in your report that there's an increase due to new materials being used in homes?
MS. MACLEOD: Objection to form.
A. To answer your question directly, no.
Q. (By Mr. Ellis) Well, I've tried to exhaust all of the possibilities for support for that conclusion. You can tell me any others. You got any others?
A. Excuse me just a moment.
That was not a conclusion. This was a statement that there is evidence that indicates. It's not a conclusion. And the answer is no, I would not use such information to reach a conclusion in a report of a case such as this.
Q. That's good to hear.
Let's go to page 11. In the section that's entitled "The Role of Radiant Barrier Material in the Fire," do you see that?

Page 176

A. Yes.
Q. Your report says that, "Metal components in buildings are common, but they're not as thin and as easily ignited as RBS."
A. Correct.
Q. So is the thinness of RBS the basis for your opinion that RBS is easily ignitable?
A. Yes, it is part of the basis for my opinion.
Q. What about the thinness of RBS helps you with that opinion?
A. The thinness of the aluminum foil on the RBS is what creates the sheet resistance property characteristic. It's what gives it a relatively high sheet resistance. Resistance is what generates heat when current flows through it. So it is the thinness of this material that creates the relatively high sheet resistance. And this was all part of our early reports.
Q. The comment about the thinness was a part of your original report?
A. Yes, the relationship between the -- between the physical structure of the material and the physical properties, the sheet resistance, the conductivity -- I'm sorry, articles. I said -- used

Page 177

the term "reports." But in our early articles, we published this and made this very clear, this sort of thing.
Q. So when you refer to "articles," you're referring to your publications but not reports that you rendered in this case?
A. Yes. I apologize. I misused the term.
Q. Is the first point at which your reference to the thinness of the RBS as a factor in fires this report right here?
MS. MACLEOD: Objection to form.
A. I'm sorry. I didn't understand the question.
Q. Yeah. Is the thinness of the RBS as a factor in causing fires, does that first appear here in your amended report on page 11, or does it appear somewhere else?
MS. MACLEOD: Objection to form.
A. I have written it so many times that it's hard for me to remember for sure where the --
Q. (By Mr. Ellis) Let's just go to "The Role of Radiant Barrier Material in the Fire" on page 11.
A. That's what I'm looking at, sir.
Q. And compare that with page 11 of your original report and tell me whether or not thinness

Page 178

as a factor was something you identified in your original report.
A. I did not.
Q. All right.
A. However, that's fundamental electrical engineering and knowledge.
Q. It's fundamental, but it wasn't in your original report, was it?
MS. MACLEOD: Objection to form.
A. Our articles have been included as attachments to this report, so in my opinion that information was included.
Q. So are you saying that the articles that have been attached to your reports are a part of your opinions?
A. They provide information that establishes the basis for our -- my opinion, yes. A topic like this is very technical and can get very complex, Mr. Ellis. To include a complete dissertation of all the fundamentals involved in a report is just not -- not normally done, or it's not practical.
Q. Do you know whether or not the lightning strike to the Taylor home was a direct strike?
A. Depends on your definition of a "direct strike." I know that lightning energy directly

Page 179

impinged upon the chimney. Now, did that lightning strike a tree somewhere else and then deflect over to the chimney, I have no knowledge of that. But I know that the lightning current directly impinged upon that chimney.
Q. But you don't know whether or not the lightning first struck some other object before it hit the chimney of the Taylor home?
A. Some other object such as a tree?
Q. I don't know. That's what I'm asking you. Do you know whether or not it hit something else before it hit the chimney of the Taylor home?
A. I don't know if it hit some other object such as a tree. I can be quite certain it didn't first strike some other object on the house because that's not what lightning does. Lightning doesn't bounce back up.
Q. Do you recognize any difference between negative and positive lightning?
A. Yeah, there is a difference. In one case current is going one way, in another case current is going another way. And --
Q. Which is which? Let me stop you there.
A. The negative lightning is lightning where the lightning originates in a source of electrons.

Page 180

And that is generally in the cloud.
Q. All right. That's negative. What about positive?
A. Positive would be the opposite. It would be lightning that originates in a source of positive charge which is on the ground usually -- generally. Not always but generally.
Q. What struck the Taylor house, negative or positive?
A. What I saw in the STRIKEfax indicated it was a minus 25 kiloamps.
Q. Which would be negative lightning?
A. I'm going to have to confirm that because there is -- there are different conventions for identifying the direction of current flow. The conventional current versus majority carrier current -- and I don't want to go off on the deep end here, but it's not as simple as you might think. And in almost all cases it makes no difference, but if you want to split hairs, then I'm going to have to confirm what convention that they're using in the STRIKEfax to refer to direction of current. I'm not trying to be evasive here, I'm just telling you you're getting into some real technical detailed areas here.

Page 181

Q. Can you tell us what the likelihood of a lightning strike to the Taylor home would be in terms of strikes per year? For instance, could you tell us that the likelihood of a strike to the Taylor home would be once in ten years, once in 20 years, once in 30 years?

MS. MACLEOD: Objection, form.

A. I have no idea. I'd have to research the strike density of this particular area. And that was not anything that had any bearing on this -- on this case at all in my investigation or my conclusions.

Q. (By Mr. Ellis) It's not something you did -- not something you're able to offer an opinion about?

A. Correct. I did not research it at all.

Q. If the Taylor house had been struck by lightning and no radiant barrier had been installed in the Taylor house, what damage would you expect?

A. Damage to electronic equipment, possibly damage to -- in fact, I would expect damage -- possibly damage to the fixed wiring system. That's what I would expect.

Q. Can you say, Mr. Simmons, that if the same lightning strike had struck the Taylor house, same conditions but no radiant barrier had been installed

Page 182

on the house, that no fire would have resulted?

MS. MACLEOD: Objection to form.

A. Two issues there. First of all, it's my opinion that without the presence of the radiant barrier, it's entirely possible that the lightning would have struck a different location on the house. So assuming that you simply removed the radiant barrier and everything else is the same is not necessarily a valid assumption.

Okay. Now, having said that, the -- based on my analysis of data -- and the data is not real clear -- that just because lightning strikes a house, there's no guarantee that there's going to be a fire. There's a very good -- more times than not, there is not a structural fire as a result of a lightning strike to a house, according to my analysis of the data. There is usually some sort of damage usually in electronic equipment and that sort of thing. But it's more likely than not that there will not be a structure fire as a result of a lightning strike to a house without radiant barrier or CSST or something like that.

Q. That's not a complete answer, though, to my question. I want you to take as givens for the question that we're dealing with the same lightning

Page 183

strike which hits the chimney cap of the Taylor house, same conditions, no radiant barrier in the house. Got it so far?

A. Okay. So you want to assume that that's where it's going to strike.

Q. Okay. Can you tell us that a fire would not have resulted, assuming the radiant barrier had not been installed?

A. I can tell you that my analysis of the data indicates that more likely than not, a fire would not have occurred. The number of lightning strikes to homes versus the number of lightning-caused fires to homes is a big difference.

Q. Do you know what a skin effect is, Mr. Simmons?

A. Absolutely.

Q. You do?

A. Yes.

Q. How does the skin effect apply in this case, if it does at all?

A. I do not believe that it applies. Skin effect is a high frequency phenomenon.

Q. First of all, define for me what the skin effect is.

A. Skin effect is when electrical current

Page 184

flows on the outside of a conductor.

Q. Why doesn't it apply to this case?

A. Skin effect is a high frequency phenomena primarily.

Q. Isn't that what lightning is?

A. No. Lightning is not high frequency. Lightning is DC. High frequency is when you have an alternating current that reverses direction.

Q. So in your opinion the skin effect wouldn't apply in this case at all?

A. That is correct.

Q. And would not apply to radiant barrier sheathing in the Taylor home?

A. That's my opinion.

Q. I want to go back to the hypothetical that we talked about before, which was the same lightning strike to the chimney cap of the Taylor house on the evening in question, no radiant barrier installed in the home. Got it?

A. Yes.

Q. Okay. What path to ground would the lightning have taken?

A. Not possible to determine it. That's part of why I opined that more likely than not, the lightning would not have struck there because I

Page 185

didn't see a path to ground on that chimney. Not saying it wasn't there but I didn't see one. Because I'm quite sure if there had been a viable path to ground, that the current would not have gone across the radiant barrier to the dryer vent. So I can't -- based on the information I have available, I can't tell you what the path to ground would have been.
Q. Can you tell me what the possible path to ground would have been?
A. If it had struck that fireplace chimney?
Q. The chimney cap, right.
A. I am aware of no possible path to ground. That's why, again, my opinion that more likely than not, without the radiant barrier providing the path ground, it probably would not have struck that chimney cap. It would have struck somewhere else, somewhere where there was a viable path to ground.
Again, people don't want to believe that lightning isn't magic or something but it's just like any other current, it wants a path to ground. It's going to find one. And if there's a good path to ground available, it's going to take that over other paths that are not good paths. That's an unfortunate situation with a radiant barrier. It always provides a path to ground, or essentially all

Page 186

the time. Never seen a case where it didn't.
Q. Has a part of your work and analysis in connection with this case involved a determination as to whether or not there's any alternative design available?
A. I have not intentionally set out to explore that, but I have wound up exploring it.
Q. So you have explored it?
A. Yes.
Q. And what have you concluded?
A. There are viable alternatives. There are alternatives. I'm not going to define them as viable. Someone else will have to determine that.
Q. Is what you just said that there are alternatives but you're not sure that they're viable?
A. I'm not going to define them as viable because there are going to be many factors that would go into defining them as viable. Based on what I have -- the limited amount that I've seen so far, I would have to believe that it's entirely -- if they're not viable now, it's entirely possible for them to be. But as they exist right now, I'm not going to say that they're viable.
Q. What are the alternatives?
A. One is a product called SOLEC that was sent

Page 187

to me by the president of the company.
Q. How do you spell that?
A. S-O-L-E-C.
Q. And tell us about this SOLEC product.
A. It is a radiant barrier product. All of the exact characteristics and properties and all that I don't know. All I know is that I performed certain electrical tests on it.
Q. And what were the results?
A. I got virtually no conductivity, no heat generated, no current flow.
Q. And what sort of material is it made of?
A. I'm not going to -- it was on a piece of -- looked like OSB to me, but what the material was, I don't know.
Q. You don't know what the material is?
A. I don't know what the material was.
Q. All right. Do you have any other alternative designs in mind?
A. Again, my efforts in this direction were not necessarily intentional and they were primarily focused on understanding if there -- if there probably were viable alternatives, not focused on trying to actually design a viable alternative. And I can tell you that based upon the testing and the

Page 188

results that we have, I believe that if the backing on the aluminum foil was something other than very flammable glue and paper, that that would be beneficial.
Q. Any other alternatives?
A. That's all I'm prepared to talk about.
Q. Those two?
A. That's not saying that there aren't more. Again, I have not made a concerted effort to redefine or redesign the product but simply to understand if there was a reasonable possibility that there would be a viable alternative.
MR. ELLIS: Let's take a break, then, while this is changed.
THE VIDEOGRAPHER: Going off the record at 2:50 p.m., ending tape 5.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 3:03 p.m., beginning tape 6.
Q. (By Mr. Ellis) Mr. Simmons, can you tell me whether or not you have taken any continuing education courses that are devoted to lightning?
A. I have not. I'm not aware of any that are devoted to lightning. Wish I could find some.
Q. Sir?

Page 189

A. I wish I could find some.
Q. Did you study it in college?
A. Lightning?
Q. Yes.
A. No. To my knowledge, lightning is not -- maybe in environmental sciences but in engineering it isn't.
Q. I'm going to ask you a series of questions here, and I would like for you to tell me whether or not you agree with this statement, disagree with this statement or tell me that you don't know.
First one is, lightning strikes 40 to 50 times a second worldwide for a total of 1.4 billion flashes per year.
A. I don't know the exact number. That sounds a little high to me.
Q. Next one, data from the National Lightning Detection Network shows that over the continental U.S., an average of 20 million cloud-to-ground flashes occur every year?
A. In the U.S. or over the U.S? Did I understand that correctly?
Q. Continental U.S.
A. Again, I don't know the exact numbers. That's not things that you carry around in your head.

Page 190

It sounds a little high.
Q. Your answer is "I don't know"?
A. I don't know the exact number.
Q. Next, an average bolt of lightning carries an electric current of 30,000 to 10 -- I'm sorry. An average bolt of lightning carries an electric current of 30,000 to 100,000 amperes at millions of volts and transfers 15 coulombs electric charge and 500 megajoules of energy?
A. I agree with that.
Q. Large bolts of lightning can carry up to 120 kA and 350 coulombs?
A. I don't agree with the 350 coulombs. And actually, they can carry more than that current.
Q. So you disagree with saying that it can carry more current?
A. No.
MS. MACLEOD: Objection.
A. My information is that it can carry more current than that, but 350 coulombs I disagree with that. It sounds too high.
Q. (By Mr. Ellis) An average bolt of positive lightning carries an electric current of about 300,000 amperes?
A. I don't know.

Page 191

Q. During 2004 to 2008, U.S. fire departments responded to an estimated annual average of 24,600 fires started by lightning?
MS. MACLEOD: Objection to form.
A. Mr. Ellis, as I understand your question, each of those requires me to agree with a specific number, a very specific number. Those are not numbers that anyone carries around in their head, so the way you've asked the question --
Q. You can very easily just answer it by saying "I don't know."
A. I'm going to say I disagree.
Q. You disagree with that?
A. Uh-huh.
Q. Is your figure higher or lower?
MS. MACLEOD: Objection to form.
A. My number would be somewhat lower.
Q. (By Mr. Ellis) Of the 24,600 fires started by lightning during the period from 2004 to 2008, of these, 4,400 of reported lightning fires occurred in homes?
A. I don't know.
MS. MACLEOD: Objection to form.
A. The bounded time frames and all that are -- are not -- is not numbers that we carry around in our

Page 192

head. I don't know.
Q. An average of 11,400 of reported wildland fires were started by lightning per year?
MS. MACLEOD: Objection to form.
A. I don't know.
Q. You do know that forest fires are caused by lightning?
A. Yes.
MS. MACLEOD: Objection.
MR. ELLIS: You objected to that?
Q. How does a forest fire get started by lightning?
A. That's a question to me, sir?
Q. Yes.
A. Different ways. It depends on what the lightning strikes.
Q. Well, tell me what the different possibilities are. Say it hits a tree?
A. Generally when it hits a tree, the current will flow through a moist -- through moisture in the tree. That's what makes it -- in a real high voltage situation, it makes it somewhat a conductor. And as it's going through the moisture, it will super heat the moisture and turn it into steam and you'll get a steam explosion and it will sometimes blow out small

Page 193

embers, if you will, or hot material that will ignite some other light combustible. The tree itself doesn't usually directly ignite, but something like that.
Q. There were 392 lightning strikes within a 5-mile radius of the Taylor home between 4:24 and 5:53 on the day of the fire?
A. I don't know that detailed information.
Q. You don't know? Do you know how many homes within that 5-mile radius were struck by lightning?
A. No.
Q. Do you know how many of the homes that were struck by lightning had radiant barrier sheathing?
A. No.
Q. Do you know how many homes within the 5-mile radius that had radiant barrier sheathing were not struck by lightning?
MS. MACLEOD: Objection to form.
A. No, I don't know those things because I didn't research them at all. They're not germane in this investigation.
Q. Do you know how many of the homes that were struck by lightning which had radiant barrier sheathing had a house fire?
MS. MACLEOD: Objection to form.

Page 194

A. No, I don't know. Didn't research it. It's not important, not significant.
Q. There were five other house fires apparently caused by lightning in the vicinity of the Taylor home on the day of the Taylor fire. Is that right?
A. Is that a question, sir?
Q. I asked you a question. Is that right?
A. I didn't -- you didn't have the "Is that right" first. I don't know.
Q. Do you know how many of the five other homes had RBS in them?
MS. MACLEOD: Objection to form.
A. I don't know.
Q. (By Mr. Ellis) And in your view, that's of no consequence, what happened in the five other homes?
A. In this investigation it does not bear upon the investigation in any way.
Q. Sir, I couldn't hear what you said.
A. I said in this investigation, that does not bear on the investigation in any way.
Q. Have you been asked to investigate any cases where a home was struck by lightning, radiant barrier was present and no fire resulted?

Page 195

A. Yes.
Q. How many times has that happened?
A. Again, I can't tell you off the top of my head. We investigate many, many fires every year, hundreds.
Q. And you have had situations, then, where radiant barrier was present, lightning struck and no fire resulted. Is that right?
A. Not where lightning struck and -- and actually impinged upon a radiant barrier. I think with one exception I believe that the lightning current got on a radiant barrier. But if lightning struck a home but did not get on the radiant barrier, the -- we have seen those, and I can't tell you how many.
Q. So you have seen situations, then, where radiant barrier was present in the homes, lightning strikes it and no fire results?
MS. MACLEOD: Objection to form.
Q. Right?
A. Yes.
Q. But you can't tell me how many times you've seen that happen?
A. No, not off the top of my head. Where it strikes a home but doesn't get into a structure,

Page 196

the -- it's not very often, but I can't tell you. You asked me if I had ever seen any and, yes, I have. Been very few but I can't tell you exactly how many.
Q. Have you seen situations where lightning strikes a home where radiant barrier's been installed, radiant barrier was energized and no fire resulted?
A. I believe there was one where a structure fire did not result. Let me qualify that. There was evidence of very localized burning but didn't progress into a full structure fire.
Q. Do you know what the term statistical significant -- "statistical significance" means?
A. Yes.
Q. What does it mean?
A. Means you have enough data to create a statistically valid sample. Statistically valid is a relationship between the number of samples you have and the total body of data that you're trying to compare to.
Q. And what is the significance of having a statistically significant sample?
A. Ask the question --
Q. What is the significance of having a statistically significant sample?

Page 197

A. The more statistically significant your sample, the more confidence that you can have in the data, that any conclusions that you draw from that data are, indeed, valid. So it relates to the confidence level.
Q. In fact, you would want, wouldn't you, a statistically significant sample before you drew conclusions about the incidence of fire induced by lightning in homes having radiant barrier sheathing?
A. Can you define what you mean by "incidence"?
Q. Well, let's define it as broadly as you have in your reports by saying occasionally that there are more home fires where radiant barrier is installed.
MS. MACLEOD: Objection to form.
A. I'm sorry. I did not understand that.
Q. Let's define it as broadly as you have where you made conclusions about the level of incidents of fires caused by lightning in homes where radiant barrier is present.
MS. MACLEOD: Objection, form.
A. I don't recall that I have made that conclusion.
Q. (By Mr. Ellis) So in your judgment there

Page 198

really is no increase in the number of fires caused by lightning in homes with radiant barriers?
A. In my judgment there is, but I'm not offering that as a conclusion.
Q. Coming back to my question, then, before you ever offer that as a conclusion, you recognize, don't you, that you would have to have a statistically significant sample size?
A. Of course. That's why we have not yet offered it as a conclusion. It's an observation -- we report data that's observed but it's not -- we do not have yet enough data to call that a conclusion and won't get such data until things get reporting -- get reported accurately in enough detail. Right now that's not happening. So data is not being generated.
Q. Let's come back to lightning strike on the Taylor house. And let's assume that we don't have radiant barrier sheathing in the home.
A. Okay.
Q. Also they were talking about the same lightning strike that hit the Taylor home on the night of August 29, 2011. In other words, one that hits a chimney cap. Got it?
A. Okay. I think so. Trying to follow.

Page 199

Q. Does the electrical current have to go to ground?
A. Yes.
Q. As it goes to ground in a zone that does not have the radiant barrier sheathing in it, is it your opinion that no fire could have been caused along the way?
A. Could have been?
MS. MACLEOD: Objection.
Q. Right.
A. Again, Mr. Ellis, it's my opinion that more likely than not, it would not have been. That's not the same as saying it could not have been.
Q. And that was my question to you, whether or not a fire could have been caused by the same lightning strike on this house in the absence of RBS?
MS. MACLEOD: Objection to form.
A. And again, we're limiting it to a strike on that chimney cap?
Q. (By Mr. Ellis) Same strike on the chimney cap.
A. Of course, I cannot say it's -- that it's impossible. In the engineering world we don't deal in absolutes. There are no such things as absolutes. We deal in probability. So no, I cannot say that

Page 200

it -- I cannot say that it's impossible that a fire would not occur.
Q. All right. To put it differently, then, a fire could have resulted as a result of the same lightning strike to the chimney cap of the Taylor house in the absence of RBS in the home?
MS. MACLEOD: Objection, form.
A. I believe that the answer in that form mischaracterizes -- I would say it is possible. It's not impossible that a fire could have occurred.
Q. It's possible that it could have occurred without the RBS in it?
MS. MACLEOD: Objection to form.
A. Many things are possible, so yes, it's possible.
Q. All right, sir. Never visited the Taylor home?
MS. MACLEOD: Objection, form.
A. Is that a question, Mr. Ellis?
Q. Yes.
A. I have never visited the Taylor home.
Q. Never personally saw the site of the fire?
A. Only in photographs.
Q. How many times have you issued a report on fire causation without actually visiting the scene of

Page 201

the fire?
A. Again, I can't tell you that number off the top of my head, but several.
Q. On what occasions would you have issued a report on fire causation without actually visiting the scene of the fire?
A. If it's not possible or extremely difficult to visit the fire and if the available evidence is sufficient to validate a conclusion.
Q. Were all of those cases where you issued a report on fire causation without actually visiting the fire cases that were in litigation?
A. No, not that I recall.
Q. What does NFPA 921 say about issuing a fire report without actually visiting the scene of the fire?
A. I would have to refer to it to give you the exact verbiage, but basically it says that it's highly desirable. If reasonably possible, you should visit the scene. It does not say that it's not possible.
Q. Was it possible for you to visit this scene?
A. According to my understanding, to visit the scene as it existed in the photographs, that that was

Page 202

not possible.
Q. If you had been contacted by State Farm at the same time that Mr. McGraw was contacted by State Farm, you would have had an opportunity, wouldn't you, to see the scene of the fire?
MS. MACLEOD: Objection to form.
A. I assume.
Q. (By Mr. Ellis) Have you been asked to do any additional work in connection with the Taylor house fire?
A. Additional other than is represented in these reports?
Q. I mean other than the reports which you've already done and your appearance here today.
A. All of the work that I have been requested to do is -- has resulted in this report and my deposition here today. There's nothing that I have been asked to do that is not represented in that time sheet.
Q. Are you aware of any other engineer or expert who's given an opinion that radiant barrier sheathing is hazardous in the event of a lightning strike other than yourself?
A. Other than -- other than people within McDowell Owens, I'm not personally aware of them.

Page 203

Q. All right. Have you sent the papers which you've written about lightning and radiant barrier sheathing to insurance carriers or lawyers that represent them?
A. I believe our office has -- that requests have been made to our office for some of these publications.
Q. Have you sent them without a request to insurance companies or their attorneys?
A. I personally have not, but I can't say that our office has not.
Q. Have you had conversations with attorneys from firms other than Ms. MacLeod's about this matter?
A. About this matter, the Taylor case?
Q. The Taylor home fire.
A. The Taylor fire?
Q. The Taylor fire.
A. I don't recall any.
Q. Have you spoken with attorneys from the Cozen O'Connor firm?
A. Yes.
Q. Which attorneys have you spoken with?
A. Not about this particular case or about certainly any details. I may have made them aware

Page 204

that I have a case -- in fact, I'm pretty sure that I did, that there is a case that is slated to go to -- to go to court. But no details. Marcos Hazan-Cohen is the gentleman at Cozen O'Connor that I've spoken with.
Q. But not about this case?
A. Not about any details. Just the fact that the case exists.
Q. You attached RIMA International Technical Bulletin 108 to your report. Is that right?
A. I believe so.
Q. And what relationship does that technical bulletin have to this case?
A. Just that it is a technical bulletin that's published by the radiant materials industry, and it does mention lightning in a precautionary statement.
Q. I guess I'm asking you: What's the reason? Why did you attach this technical bulletin to your report? What does that have to do with this case?
A. It is a technical bulletin from the radiant barrier industry, radiant material industry, and it talks about installation.
Q. What does it have to do with this case?
A. It is very specific about radiant barrier and the installation of radiant barrier and

Page 205

precautions that need to be taken in the installation of radiant barrier. That's -- it's not about anything else. It's about this -- the installation of radiant barrier and the fact that lightning is a concern.

(Exhibit 43 marked)

Q. (By Mr. Ellis) I'm showing you what's been marked as Exhibit No. 43. Can you identify what that is?

A. This appears to be a copy of a paper that we prepared.

Q. Were you the principal author on the paper?

A. I'm sure I was.

Q. And when you say "we," you mean yourself, Mr. Benstock and McDowell Owens Engineering. Is that right?

A. Yes.

Q. And how was this paper presented?

A. This paper was published in the proceedings of the ISFI.

Q. ISFI is International Symposium on Fire Investigation?

A. Yes.

Q. When did that occur?

A. October of this year.

Page 206

Q. October of 2012?

A. Yes.

Q. Did you just present the paper, or did you make an oral presentation as well?

A. We made an oral presentation as well.

Q. Was the oral presentation illustrated in any way?

A. Define "illustrated," sir.

Q. Sure. Were you using PowerPoint or slides?

A. Yes, it was a PowerPoint.

Q. I'd ask you to turn to page 589.

There's a paragraph there that's captioned, "What is the evidence that RBS attracts lightning?" Is that right?

A. Yes.

Q. And the first sentence says, "Generally, the initial reaction to this suggestion the radiant barrier sheathing attracts lightning is that it sounds outrageous."

Did you make that statement?

A. I believe that was my statement.

Q. And is it true?

A. Is it true that that's the general reaction?

Q. Right.

Page 207

A. I would say so.

Q. In the next sentence you say, "At first the idea seemed farfetched to the investigators at McDowell Owens as well."

Did you make that statement?

A. Yes.

Q. And did it seem farfetched to the investigators at McDowell Owens?

A. It did.

MS. MACLEOD: Objection.

Q. And by "investigators," were you referring to yourself?

A. Myself, Mr. Benstock, Mr. Camara, probably Mr. Bonyata. I don't -- it's just -- I don't remember specifically who made what comments.

Q. At the end of that paragraph you say, "The initial thoughts about the possibility that RBS might be attracting lightning were triggered by comments in a newspaper article," then there's a colon and some material in a box, right?

A. Yes.

Q. The material in the box says, "Firefighters in a central Texas city say that they've seen an increase in house fires caused by lightning. Round Rock Fire Department Assistant Chief Billy

Page 208

Wusterhausen says house fires caused by lightning strikes are becoming a lot more common. He can't explain why, but he did say all the homes fit the same profile." Do you see that?

A. Yes.

Q. Beneath that there's a citation that says, "Excerpt from article, Lightning Storms a Potential Cause for House Fires on KEYE TV website, www.weareAustin.com." Is that right?

A. Yes.

Q. Did this quotation from Chief Wusterhausen come from a newspaper article or from a website?

A. This was published in the Austin Statesman. It looks like this came from a website.

Q. When you say "published in the Austin Statesman," that's a newspaper?

A. Yes.

Q. Do you still have a copy of that?

A. I don't know.

Q. But you extracted this quoted material here from the newspaper article in the Austin Statesman?

A. This, I'm fairly sure, was extracted from the website because that's where -- this was extracted by a member of our staff. We have staff people that sometimes they do research. And so I

Page 209

would have to check for sure where she got it, but I believe she got it from the website. But this is -- this is what was published in the Austin Statesman.
Q. All right. Is the quoted material here that we're now looking at the same information and quoted material that you referred to some hours ago by somebody that you then were calling Chief Westerson?
A. Yes.
Q. So you now know we're talking about a chief that's named Wusterhausen, right?
A. Yes. At the time I made it very clear I did not remember his name and pronunciation exactly.
Q. All right. Turn the page. You make the following statement in this paper: "The comments by Chief Wusterhausen about 'homes with the same profile' caused McDowell Owens investigators to reflect on the fact that most (more than 90 percent) of the lightning involved house fires they had investigated over the last couple of years had been in houses with RBS roofing." Is that a quotation?
A. Yes.
Q. That's an accurate reading of what you say in the paper, right?

Page 210

A. As I heard it, yes.
Q. Did the comments by Chief Wusterhausen concerning homes with the same profile say anything about homes with RBS in them?
A. No.
Q. They did not?
A. No. I stated that before.
Q. Turn to page 592.
The middle of the page there you say, "In summary, there are five reasons that make us tend to believe RBS material attracts lightning." You see that?
A. Yes.
Q. The No. 1 reason below that, and I'll read it, is, "Independent fire investigators on the front line of structure fires such as Chief Wusterhausen have observed that there's been an increase in lightning caused structure fires in houses of similar and new construction." Correct?
A. Correct.
Q. Chief Wusterhausen never said anything about an increase in lightning caused structure fires due to RBS, right?
A. Correct. And I explained that before, Mr. Ellis, the fact that they are similar in newer

Page 211

construction.
Q. Why in the world would you make this your No. 1 reason underneath the conclusion that says, "In summary, there are five reasons that make us tend to believe RBS material attracts lightning"? Why?
A. That is not the No. 1 reason, Mr. Ellis, as you're using the term "No. 1."
Q. It's No. 1 right here, isn't it?
A. You are defining the order to be a priority. Many people make that mistake. That was the first --
Q. Let's take the order completely out of it. It is, nevertheless, a reason that you have cited for making McDowell Owens tend to believe that RBS material attracts lightning, right?
A. It's a reason that led us to look deeper. It is the reason that led us to look deeper.
Q. Go to the last paragraph on that page. You make the statement there, and I quote, "First and most desirable would be a statistically valid set of data containing properly adjusted numbers of lightning strikes to houses with RBS versus houses without RBS." Is that an accurate quotation?
A. Yes, it is.
Q. And so you agree that you would have to

Page 212

have a statistically valid set of data before you could draw conclusions about numbers of lightning strikes to houses with RBS versus houses without it, right?
A. Before --
MS. MACLEOD: Objection.
A. Before we could call it a conclusion, yes. The purpose of this paper was not to present conclusions, just to present a body of available evidence so that people who should be interested in it would have that available.
Q. (By Mr. Ellis) Let's go to page 595. Under the paragraph which is captioned "Summary" -- do you see that?
A. Yes.
Q. You say pretty far down the first paragraph, and I quote, "If a house with an RBS roof is struck by lightning, the probability of a resulting attic fire is estimated by McDowell Owens to be roughly 80 percent." Do you see that?
A. I do.
Q. Where did the 80 percent come from?
A. That's from data -- our own internal data over the last two to three years of lightning-involved structure fires.

Page 213

Q. Investigated by McDowell Owens?
A. Yes.
Q. No one else?
A. Data from no one else was part of this -- was a basis for this paper.
Q. I'm sorry. Data from no one else was the basis -- you lost me there. Say that again.
A. Data from anyone else was not a basis for this paper, was not included in this paper, was not reflected in this paper.
Q. I understand.
A. That doesn't mean it doesn't exist, that we didn't hear of it, but it was not data we could use.
Q. It's just data, then, about fires that McDowell Owens has been asked to investigate?
A. That's right.
Q. Correct? All right.
Obviously then, since you got an 80 percent figure here, you investigated some number of houses, then, where radiant barrier was installed, lightning hit them and no structure fires ensued, right?
A. That was a long question. Ask it again, Mr. Ellis.
Q. Obviously, because you used the figure

Page 214

80 percent here, that means even within your own data, namely the fires that McDowell Owens has been asked to investigate, there's some not insubstantial percentage of homes, 20 percent, where radiant barrier sheathing is on the house, lightning struck it and no fires ensued, correct?
A. No. As you stated the question, that's not correct.
Q. What's not correct about it?
A. You used the number 20 percent for houses struck where a fire did not ensue.
Q. I think I was just interpolating from your statement where you said, "If a house with an RBS roof is struck by lightning, the probability of resulting attic fire is estimated by McDowell Owens to be roughly 20 percent."
So if we assume that statement is correct, wouldn't it also be true that if a house with an RBS roof is struck by lightning, the probability of resulting attic fire not occurring is roughly 20 percent?
MS. MACLEOD: Objection, form.
A. No. This is an estimate, and this is a conservative estimate. So to extrapolate other data from that conservative estimate is not a valid

Page 215

process.
Q. By the way, was Exhibit No. 43, which is the one we were just talking about, peer reviewed, to your knowledge?
A. Peer reviewed in the same manner that our other papers were reviewed. This one was probably more stringently examined. This one had to be approved by the committee -- had to be accepted by the ISFI committee. I'm not sure how many people were on that committee, but this -- this one was almost certainly more thoroughly reviewed.
(Exhibit 44 marked)
Q. (By Mr. Ellis) I've handed you what's been marked as Exhibit No. 44. Can you identify Exhibit No. 44?
A. This looks like the very first article related to radiant barrier that we published.
Q. And that was during the summer of 2009?
A. I believe so, yes.
Q. And when you say you -- I'm sorry, when you say "we," you mean yourself, Eric Benstock and Rick Bonyata and Nestor Camara. Is that correct?
A. Yes.
Q. Are all four of those people still with McDowell Owens?

Page 216

A. Yes.
(Exhibit 45 marked)
Q. (By Mr. Ellis) I'm showing you what's been marked as Exhibit No. 45. Can you identify that, please?
A. This looks like the second paper that we did on radiant barrier.
Q. Is this paper entitled "Reflective Radiant Barriers, Good for Energy Savings - Bad for Fire Safety"?
A. Yes.
Q. Were you the author of this paper?
A. I was the principal author. Again, collaborative effort. The -- actually, Mr. Benstock and Mr. Camara are listed as coauthors on this.
Q. And about when was this prepared and published?
A. This was in 2010, I believe about midyear.
Q. How was it published?
A. This was posted on the National Association of Fire Investigators website.
Q. Was it peer reviewed?
A. Peer reviewed in the same way, peer reviewed by multiple engineers at McDowell Owens and by the committee, the team, whoever accepts papers

Page 217

for publication at NAFI.
Q. Turn to page 8. In the first paragraph there about six lines down, you make the statement, "Although we did not have the exact metal alloy composition analyzed, we can be virtually certain that the aluminum in these foils is not high quality 'pure' aluminum. We can be highly confident that there are impurities in the aluminum and that the impurities will have the effect of increasing resistivity." Have I quoted that correctly?
A. You quoted what's written there, yes.
Q. And you now know by virtue of the test that Mr. Goodson performed that at least as to the LP TechShield, we're talking about pure aluminum?
MS. MACLEOD: Objection, form.
A. That's what I'm -- I have heard reported. I've not seen that independently confirmed.
Q. You don't have any reason to dispute it, do you?
A. I have no reason at this point. And the fact is the exact composition is not -- is not germane. This was just -- addressing the fact that that can affect resistivity was just trying to be engineer -- complete from an engineering point of view. All that matters is the resulting sheet

Page 218

resistance property, which is a function of the material but also it's a function of the structure.
Another thing that we did not have was the exact thickness of this material, and we know -- but again, we estimated it to be -- what did we estimate it to be -- .01 millimeters. The -- I don't remember. But again, neither of those parameters are directly important. What's important is the sheet resistance that results. Because that's what generates heat. These could vary up and down. Doesn't matter.
Q. Let's go to that, then. Let's talk about the heat resistance. Go to page 10. You see a chart there that's captioned No. 1 which says, "Test strip resistance versus current density." Do you see that?
A. Yes.
Q. Is each dot along the blue line there a test result?
A. I believe that was, yes.
Q. I notice here that at least as to this chart, there is no duration for the test noted. Is that right?
A. Correct.
Q. Anywhere in this report do you note the duration of the test?

Page 219

A. I don't believe so.
Q. Do you know as you're sitting here what the duration of these tests was?
A. This duration was -- was many minutes because we were interested in -- we were interested in avoiding the effects of any transient conditions. We wanted to know statically what it was. If we had this much current flowing through a piece of metal for an unlimited amount of time, what's it likely to -- then what is the temperature likely to achieve.
Q. How many minutes?
A. The process here was to increase the current amount until the measurement stabilized. And it would -- and the exact duration will be different for each of these dots.
Q. What's the range?
A. The range is in single-digit minutes. I can't give you a range. Again, the process was to wait until the reading stabilized so that we knew we were getting a consistent reading and then record the reading.
Q. At the bottom of page 10 you say, "It should be noted that the material will ignite at current densities much less than this value, maybe

Page 220

50 percent less if enough time is allowed." Correct?
A. Where are you reading that from, sir?
Q. The very bottom of page 10.
A. It's not on my page 10. The text is on page 11 of the copy that I have here. "It should be noted that the material will ignite at current densities much less than this value if enough time is allowed," yes.
Q. I read that correctly then?
A. Yes.
Q. And the range of time allowance apparently was in single-digit minutes. Is that correct? So anywhere from one minute to nine minutes?
A. Say that again or ask the question again.
Q. The range of time allowed, the duration of the test was anywhere from one minute to nine minutes? Or can you more accurately tell us what single-digit range we're talking about?
A. The -- at the end of this test sequence that the chart is derived from, if you look back at the chart, Mr. Ellis, page 10.
Q. Right, 6.
A. Okay. You see how it -- the rise of the curve starts to get very steep and it is truncated because that's where it ignited. Once it ignited,

Page 221

then the readings go to zero. So we actually repeated this several times and the very last ones we had to make the readings quickly because it was in the process of igniting. We wanted to have the chart as complete as possible, to have it extend out as far as possible. But out towards the end, we had to -- we had to make the measurements much more quickly. We were not able to allow them to completely stabilize.

Q. Are we still talking single-digit minutes?

A. No, we're not, not out at the end.

Q. What duration are we talking about at the end?

A. This was -- this was in seconds. Only as much time as -- that we could get a reading because it ignited very quickly.

Q. Less than a minute, in any event?

A. Way less than a minute, out at the very end here. But again, exactly how long depends upon how far we are on the curve.

Exact values of many of these parameters that we've measured, people think are very significant. They're not. The fact is that at a certain current density, this material ignites. And depending upon a whole bunch of environmental

Page 222

conditions, the amount -- exact amount of time required will be different. The exact amount of current required will be different.

Q. If you did this test on wood for some period of time, wouldn't the wood ignite?

A. This test?

Q. Applying some current to the wood?

A. Current to the wood?

Q. Yeah.

A. Wood does not conduct current. Okay.

(Exhibit 46 marked)

Q. (By Mr. Ellis) I've handed you what's been marked as Exhibit No. 46. Can you identify that, sir?

A. This is a -- I'm going to call it a paper that we prepared very early on that was -- I believe this was posted on our website.

Q. Is Exhibit No. 46 a paper entitled "Reflective Radiant Barriers - Energy Saving Wonder or Disaster Waiting to Happen?"

A. I'm sorry?

Q. Is the paper as I just described it?

A. Is this --

Q. Is this exhibit, Exhibit No. 46, a paper entitled "Reflective Radiant Barriers - Energy Saving

Page 223

Wonder or Disaster Waiting to Happen?"

A. What I have with a 46 on it has that title, yes.

Q. Were you the author of this?

A. Probably.

Q. Is there some reason you don't know whether or not you're an author of this?

A. I am the author of most all of the material that I'm looking at. Whether it was edited by someone else before it was posted, I can't say right now for sure.

Q. Do you know what date this one was prepared?

A. I don't recall off the top of my head. This would have been after the first article in Fire Findings.

Q. Was this one published?

A. This was -- as I recall, this was posted -- only posted on our website.

Q. Was it peer reviewed before posting on your website?

A. It was peer reviewed by engineers at McDowell Owens.

Q. And can you define any better for us about when this was put on your website?

Page 224

A. I cannot at this time. It would have been after the Fire Findings publication because this one contains more information.

Q. Let's take a break so that --

THE VIDEOGRAPHER: Going off the record at 4:01 p.m., ending tape 6.

(Recess taken)

THE VIDEOGRAPHER: Back on the record at 4:12 p.m., beginning tape 7.

Q. (By Mr. Ellis) Mr. Simmons, it's a fact that you relied upon Mr. McGraw for identification of the area of fire origin, right? Subject to the fact that you confirmed it within your firm?

A. Yes.

Q. And you also relied upon Mr. McGraw's fire investigation through photographs and diagrams and other things that he provided to you, subject, of course, to your independent verification within your own firm?

A. Yes.

Q. And you do know that Mr. McGraw was not able to identify a specific first ignited building material?

A. Yes.

Q. And you know that he was not able to do

Page 225

that because materials had been removed from the site and destroyed, correct?
MS. MACLEOD: Objection, form.
A. I don't know that that's the reason that he could not identify it.
(Exhibit 47 marked)
Q. (By Mr. Ellis) All right. I've handed you what's been marked as Exhibit No. 47. Can you identify that?
A. This is a version of the paper that we prepared for ISFI.
Q. All right. Go ahead.
A. Yes, that's -- this is a version of that paper.
Q. All right. Is Exhibit No. 47 a paper that's entitled "Unusual Behavior of Radiant Barrier Materials in Fire Causation"?
A. Yes.
Q. And you were one of the authors, in fact, the lead author of this paper?
A. Yes.
Q. And you said, "This is a variation of the paper that was presented to the International Symposium on Fire Investigation." Is that correct?
A. That's correct.

Page 226

Q. And the one that we looked at earlier was entitled "A Strange New Source of Structure Fire Ignition." Is that right?
A. That's correct.
Q. So what we have in Exhibit No. 47 is just another version of that same paper?
A. Essentially, yes.
Q. Is it different in any way that you know of?
A. I don't believe so, but again, I'd have to go through it line by line. But the --
Q. It's appears to be the same?
A. Yeah. That "Strange New Source" title got tagged on, I guess, by ISFI. There was -- early on you had to submit an abstract, and that was something that was included in the very first abstract presentation and they stuck with it and so we wound up having to publish it with that. That wasn't the preferred title.
Q. Do you know about when Exhibit No. 47 was prepared?
A. It would have been in the early fall of this year, of 2012.
Q. Was this paper published independently of the paper that you submitted ISFI entitled "A Strange

Page 227

New Source of Structure Fire Ignition"?
A. No, I don't believe that this was published anywhere. This may be on our website.
Q. All right. Looking at your amended report, Photograph No. 7, do you have that?
A. I do.
Q. Is Photograph No. 7 a photo that's entitled "High current electrical burning around nails penetrating through chimney flashing"?
A. Yes.
Q. All right. Does that show the paper backing intact?
A. Can't tell from this picture.
Q. Looking at Photo No. 8, that's a photo which is labeled at the bottom, "Clear evidence of large amounts of lightning current from the radiant barrier foil into the dryer vent pipe." Is that right?
A. Yes.
Q. Is the paper backing intact there?
A. It is in places.
Q. Let's go back to Photo No. 7. You say you can't tell us from looking at the photo whether or not the paper is intact. Is that right?
A. Correct.

Page 228

Q. Do you know whether or not it was, in fact, intact?
A. No.
Q. How about from Photo No. 8?
A. Do I know if, in fact, it was intact, is that your question?
Q. Yeah, same question.
A. Do I know --
Q. Do you know whether or not the paper backing is, in fact, intact?
A. It is in places and in places it appears to not be.
Q. Can you take the pen there and mark for me where the paper is not intact. And then connect those to a letter "R" on the outside margin.
A. (Witness complies.)
Q. Let's turn to Photo 9. Looking at Photo 9, can you tell me whether or not the paper is intact there or not?
A. Same answer, it's very difficult to tell. There are places where it looks like that it could be intact and there are places where it looks like that it is not intact.
Q. All right. Take your pen and circle the places which you believe show that the paper is not

Page 229

intact and connect them with a line to the margin and put a letter "H" beside those.
A. (Witness complies.)
Q. Are there any other photos in your amended report, Exhibit No. 41, which depicts the RBS and show that the paper is not intact?
A. There are no photos that provide enough detail to be able to make that determination.
Q. All right, sir. Take a look at Exhibit No. 37. Look through Exhibit No. 37, which is your original report, at the photos and identify for me which photos show that the paper is not intact.
A. I do not have Exhibit 37.
Photo 5 shows the paper not intact.
Q. All right. That's on page 5?
A. Yes.
Q. All right. Take your pen, circle wherever it is that you believe the picture shows that the paper is not intact and connect it with a line to the letter "K" in the margin.
A. Okay.
Q. Let's go to the next one. Are there any other photos in Exhibit No. 37 which you believe show that the paper is not intact?
A. Photo 10.

Page 230

Q. That appears to be one of the same photos that's used in the amended report, right?
A. Yes.
Q. But if you wouldn't mind, why don't you go through the exercise on Photo No. 10 of circling the parts of this photograph which you believe show that the paper is not intact?
A. And what letter would you like me to use for that?
Q. Let's try "L" this time. We're going to run out of the alphabet probably.
A. (Witness complies.)
Q. Are you done?
A. Bear with me here.
Q. Did you connect it?
A. Sorry?
Q. Did you connect it to a letter "L"?
A. Yes.
Q. Thank you.
Your paper on page 8 indicates that a small remaining piece of the styrofoam vent channel can be seen under a staple in Photo 10?
A. Yes.
Q. Can you find that, circle it and connect it to a letter "M" in the margin?

Page 231

A. This is in the original report?
Q. Right.
A. (Witness complies.)
Q. All right, sir. Then any other photos in your original report which you believe show the paper not intact?
A. Again, Photo 9.
Q. All right. And on Photo 9, which I believe is a duplicate of something that we just looked at in your amended report, but if you will go through the exercise there on Photo 9 of circling the parts of that photo which you believe show the paper not intact and connect it to a letter "N" in the margin?
A. It's a little more difficult to see in this photograph. You said "N" as in November?
Q. Right.
A. (Witness complies.)
Q. Any other photos in the original report which show the paper is not intact?
A. No.
Q. Are you aware of any other photos that you've seen in connection with your investigation which show that the paper is not intact?
A. I believe my recollection is that there were other of Mr. McGraw's photos that showed it not

Page 232

intact, but there was many photos -- I can't tell you exactly which one right now. I'd have to go through them.
Q. I'm going to show you -- I'm showing you what was marked as Exhibit No. 31 in Mr. McGraw's deposition, which is his report dated August 22, 2012. I'd ask that you look through there at Mr. McGraw's photographs and see if you can find any photos which show that the paper is not intact?
A. None other than photos we have already discussed that I can find that I can confirm with the quality of these pictures, the reduced pictures.
Q. All right, sir. Can you hand that back to me?
A. (Witness complies.)
Q. I'm going to show you what was marked as a copy of Exhibit No. 33 in Mr. McGraw's deposition, which is a copy of his report dated November 7, 2012, and I'll ask you the same thing: Look through the photographs there and see if you see any photos which show that the paper is not intact.
A. So difficult to see in some of these photographs.
MS. MACLEOD: You just asked him to look at the photos attached to Rob McGraw's report

Page 233

and not the photos that came from the Taylors. You want him to look at those preconstruction photos from the Taylors?
A. Yeah, this looks like a bunch of preconstruction photos. I'm not sure.
Q. Yeah, right. The preconstruction photos you really don't have to look at.
A. I'm not sure where the line is between them. I assume it's this --
MR. ELLIS: This is out of Goodson's file.
MS. MACLEOD: Okay.
MR. MURPHY: We make no representations that it's going to work.
A. Unless we spend a lot of time looking at this paper intact, it really doesn't make any difference.
Q. (By Mr. Ellis) Having looked at Exhibit No. 33, did you find any additional photos which you believe show that the paper is not intact?
A. None that I could confirm with the quality of the pictures. It's reduced on paper. Now, the page with the exhibit number on it, is that -- did we take it off there?
Q. What?

Page 234

A. That doesn't have an exhibit number on front, does it?
Q. No.
A. Okay. It didn't have one?
Q. No. This was Exhibit No. 33 in the earlier deposition.
A. Okay.
Q. It was his amended report.
A. All right. I just didn't see the exhibit number. I wanted to make sure I hadn't lost the page.
Q. The original exhibits are being kept by the court reporter, so we don't have those.
MR. ELLIS: You've already got a copy of this, don't you?
MS. MACLEOD: I don't know what it is.
MR. ELLIS: His file.
MS. MACLEOD: Who?
MR. ELLIS: His file.
MS. MACLEOD: His?
MR. ELLIS: Yeah. Do you need a copy of it?
MS. MACLEOD: No. I should say please, no.
(Exhibit 48 marked)

Page 235

Q. (By Mr. Ellis) Can you identify what I've handed you that's been marked as Exhibit 48?
A. This appears to be a copy of McDowell Owens -- material that was in the McDowell Owens file for this job.
Q. This would include your papers as well as anybody else's papers that dealt with this fire?
A. It would include whatever was in the file.
Q. I'd ask you to turn to the drawing in the file that looks like that there.
A. Is there a page number, or how can I find that?
Q. These aren't numbered. If you want to, just use this one until you come to it.
A. Yes.
Q. Just hold that out in front of you then. Can you identify what that is, please?
A. That's a sketch that was made by myself while I was reviewing -- doing initial review of photographs.
Q. Was that made to illustrate the current path from the chimney cap down to the dryer vent?
A. This was made to illustrate what I was seeing and information I was extracting from photographs as I was going through them.

Page 236

Q. Did you do it on or around March 26th of 2012?
A. I believe I did.
Q. Flip to the next page. Is that the Franklin Times article that you pulled off the Internet?
A. It appears to be.
Q. Go to this part of your file which begins an engineering bulletin that says, "Role of IEEE."
My question to you is: What was the -- I'm sorry. You haven't got it yet, have you?
A. How far back in the stack is it?
Q. Looks like it's a third of the way back.
A. I fear I'm wasting too much time trying to thumb through these and find it, that page.
Q. I'll just show it to you.
A. Okay.
Q. Do you know what this part of your file is?
A. I do.
Q. What is it?
A. It's a summary of IEEE C-62 test standard.
Q. And why were you interested in putting this in your file?
A. Because it is believed by some that IEEE, C-62 describes the proper way to do the testing that

Page 237

we were doing. And IEEE C-62 is for testing surge protection devices on low voltage circuits. It has nothing to do with radiant barrier in any way.
Q. Let me ask you to turn to this part of your notes.
A. These are not organized, so I'm forced to fumble through every page.
Q. Yeah. I'm sorry. You guys could have numbered them to make it a lot easier for us.
MS. MACLEOD: I'm sure everything I got was numbered. I think this might be it.
THE WITNESS: Okay. Thank you.
Q. (By Mr. Ellis) Can you identify what that is for us?
A. These are some notes that I made to myself while reviewing expert reports.
Q. Of Mr. Goodson and Mr. Scardino?
A. Yes, these two are -- these are the two that are covered here.
Q. Flip to the next document.
A. That's not next in my order here in this stack. But again, you could just show me the document, Mr. Ellis, and I --
Q. Yeah.
A. This is just one of many sources of -- or

Page 238

things that were found by our staff that have to do with lightning.
Q. And was that the research from Wikipedia on lightning that y'all collected?
A. We didn't call information from Wikipedia research. It's just explanatory information. It's, again, our staff -- we ask them to do -- to do searches for information, and they invariably always come up with some stuff from Wikipedia. It's good -- it's illustrative and it's good for explaining things to other people, but we don't -- we don't necessarily take information from Wikipedia as authoritative. It's mine to coordinate with other information but if you get the same information from other sources, then you believe it. But Wikipedia is not considered an authoritative source by many.
Q. I'm going to show you that from your file. Can you identify what that is?
A. This is another page printed off by our staff, and this one addresses the autoignition equation.
Q. And that's another article from Wikipedia, correct?
A. Yeah. It is -- this is one where I'm familiar enough with this autoignition equation to

Page 239

know that this is -- for the purposes that we extracted it, this is valid.
MR. ELLIS: Let me take a few minutes with George here, and I'm going to see if we're able to wrap this up.
THE VIDEOGRAPHER: Would you like to go off the record, sir?
MR. ELLIS: Yes.
THE VIDEOGRAPHER: Off the record at 4:44 p.m.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 5:00 p.m.
Q. (By Mr. Ellis) All right. Mr. Simmons, you told us a little while ago that in connection with your presentation to the ISFI, you made a PowerPoint presentation. Is that correct?
A. A PowerPoint version of the presentation -- or the paper that was published.
Q. Would you mind making a paper copy of that and give it to your counsel so that she can produce it to us?
A. Certainly not. The -- I'm not sure that it's not -- the -- no, he's talking about a different one. It's just a subset of what is in the paper.

Page 240

(Exhibit 49 marked)
Q. (By Mr. Ellis) If y'all wouldn't mind sharing this one. I'm handing you what's been marked as Exhibit No. 49. Could you take a look at that, Mr. Simmons?
A. Yes, I recognize it.
Q. All right. What is it?
A. This is a paper version of a very short PowerPoint presentation that includes some video clips of the testing.
Q. And is this the test that we were talking about earlier where you energized a strip with the auto battery?
A. No. That is -- one of those is included in here, but there are several different video clips. I thought we were talking about the first one. Are we talking about the first one yet?
Q. Let's go back to the first page and start --
A. Okay.
Q. -- with each page. What does the first page show?
A. This is a brief overview of what is -- what appears on the second page of this paper copy, which is a high voltage test that we did on the radiant

Page 241

barrier.
Q. Have we already talked about that particular test today?
A. Only slightly. We talked about the fact that we have done high voltage testing without sheathing clips.
Q. All right. And the second page of Exhibit No. 49 is a photo that's taken from the video clip --
A. Yes.
Q. -- showing the high voltage testing. Is that right?
A. Yes.
Q. And that was 12,000 volts, correct?
A. Yes. 12,000 volts at 30 milliamps.
Q. And what was the duration of the test?
A. This one was maybe seconds. 20 seconds, 30 seconds.
Q. 20 to 30 seconds. What was the purpose of that test?
A. Simply to show that arcing from sheet to sheet occurs without the presence of sheathing clips and that high voltage, even at a very low current -- extremely low current, could ignite this material and subsequently ignite adjacent light combustibles.
Q. When did you do this?

Page 242

A. This one may have been done a year or more ago.
Q. Take a look at the last page of Exhibit No. 49. Does this describe the test that you performed using a 12-volt car battery?
A. This is one of the many tests that we did with a 12-volt car battery. This is one of the ones we talked about earlier.
Q. Rise time of less than 1 microsecond, correct?
A. Yes.
Q. And this would have been the one you talked about earlier that had a duration of about 20 milliseconds? Is that right?
A. Yes.
Q. When did you do this one?
A. This one was done recently. Within the last few weeks. And also, again, it stipulates that this does not duplicate lightning in any way. It's simply due -- to show that a fast rise time, short pulse will ignite this material.
Q. Let me ask you to look at Exhibit No. 38. Looking at Exhibit No. 38, can you tell us when you performed the test on the first few pages of Exhibit No. 49, namely the higher voltage 12,000-volt test?

Page 243

A. Okay. There was high voltage testing done in August, but I don't believe that's the one that was -- that's actually in this picture.
Q. All right. I think you said that you may have done the test that's in the picture and described in the first two pages of Exhibit 49 approximately a year ago?
A. Yeah, it's some time ago. Again, as I related to you, we have done a lot of testing on this material.
Q. By looking at Exhibit No. 38, can you tell us when you performed the test that's described on the third page of Exhibit 49?
A. That would be down in mid November, 11-13 and 14.
Q. So that's the testing that's described on Exhibit No. 38 at November 13 and 14 of 2012. Is that right?
A. Yes, that's one of the tests that would have been performed.
Q. And you apparently did a DVD with video clips of RBS testing on November 16th, 2012. Is that right?
A. Yes.
Q. Is that a video clip of the test that's

Page 244

described on the third page of Exhibit 49?
A. It's video clips of everything that's described in Exhibit 49.
Q. Is it a video clip of everything that's described in Exhibit 49?
A. Well, the PowerPoint that this was printed off from, I believe there are four or five tests in it. That's what these video clips are.
Q. So none of the testing you've done was intended to replicate lightning. Is that correct?
A. Correct. It's not possible -- not reasonable at all to try to replicate lightning. All of our testing demonstrates fundamental physics, electrical engineering and how they apply to this material and it demonstrates the fact that this material can be ignited by electrical current from virtually any source as long as the current density achieves a certain level.
Q. You weren't trying to replicate lightning and in your view it wouldn't be reasonable to do so, correct?
A. It's not reasonable, and it is completely unnecessary. Again, once you've proven that you can ignite something with a match, proving that you can ignite it with a blow torch is unnecessary.

Page 245

Q. If you would, get your report -- your original report and your amended report out. What I'd ask you to do is take a look through those reports and identify for me any photographs which you believe show sooting.
A. Exhibit 37 -- so this would have been the original report -- Photograph 4 is a photograph of most of the fire scene. There would be sooting in that photograph. Photograph 5 --
Q. Just a second.
A. Any time you have combustion, there -- almost any time there will be part of that combustions that is incomplete and that's what generates sooting. So any time this material does not completely burn --
Q. Let me ask you to look at the photographs where the RBS appears and show us on those where sooting appears.
A. Photograph 8, I can't tell from this reproduction, but I believe close examination in the original photos indicated some there. Photograph 9 --
Q. Just a second. Where on Photograph 8 are you seeing sooting?
A. I'm not -- you can't see it in this quality

Page 246

of the photograph. But what I recall is -- something that you can see in these photographs does not include flow rate but in my on-screen examination, I recall that I saw some sooting here. So just information for what it's worth.
But in this photograph you can't tell, the quality of the photograph. In this reproduction of the photograph. Photograph 9 shows sooting.
Q. Take your pen out, circle the sooting, attach it by a line in the margin to the letter "R."
A. (Witness complies.)
Q. Can you pin it down any more than just circling the entire photograph, Mr. Simmons?
A. There are many individual locations in this but they're connected, so it's not possible to separate.
Q. Try to draw a small circle around the ones that are connected and link it up with the letter that I just asked you to put in the margin.
A. In some cases we already have circles around this location, so -- but I'll draw another. And in many cases they overlap. I've done that on Photograph 9.
Q. What about 10?
A. 10 we have -- did we not do that on 10?

Page 247

Q. Take a look at the circles on 10. Are they circles that surround sooting already?
A. All of them do appear to include some sooting, but I'm going to draw one more circle and then I'll draw an "R" to them.
Q. Okay. Take a look through the rest of Exhibit No. 37 when you finish that and see if there are any other photos in here which show sooting.
You didn't find any more in that exhibit?
A. No.
Q. All right. Turn to Exhibit No. 41, then.
A. Now, remember we talked about Photograph 4 shows sooting but we didn't circle that. But that's -- that's the burn scene, so, of course, it's --
Q. Right. The rafters. Okay. Exhibit 41, find any photos that show sooting.
A. Again, we've got the same Photograph 4 of the rafters, but I assume we don't want to circle that one?
Q. No, we can skip over that.
A. Same Photograph 8, which is of the dryer vent. We've already done that.
Q. Right.

Page 248

A. Do you want me to do it again here?
Q. No. Don't do it again.
A. In Photograph 7, this is a little more clear than the copy in the other exhibit, and you can -- you begin to see some sooting. So I'm going to go ahead and circle it.
Q. You're on Photo 7 and you're circling areas which you believe are sooting and if you would attach those by a line to the margin and mark those as letter "S."
A. In Rob's big photograph stack, there were other photographs around this chimney but they're not here.
Photograph 9 definitely does, but we have so many circles on it already, I don't know how we can --
Q. Is Photo 9 one that we covered in the original report?
A. We must have.
Q. Is that the same as Photo 10 in the original report?
A. Yes.
Q. Are there any other photos which you say show sooting in your amended report?
A. No.

Page 249

Q. Are there any other photos that you've seen which you believe show sooting?
A. That I have seen in these reports or period?
Q. Period.
A. Again, in the couple hundred or several hundred photos that I received from Mr. McGraw, I recall that there were photos with sooting. But --
Q. Let's take a look at what is marked as Exhibit No. 33 in the McGraw deposition.
MR. ELLIS: Have you got a copy of that, Skye, here that you can share with him?
MS. MACLEOD: I do.
A. Again, this does not include all of the -- all of the photographs that Mr. McGraw took.
Q. (By Mr. Ellis) Yes, I understand. But I want you to look at the photos that Mr. McGraw attached to his report dated November 7, 2012 and tell me if any of those show sooting.
A. Photograph 1, of course, is going to show sooting.
Q. Again, you're looking at the burn material from the scene rather than RBS stuff, right?
A. Well, there is some RBS stuff here, but the -- this photograph shows sooting. How much of it

Page 250

is on what, hard to tell. Photograph 2, the same. Photograph 3, the same.
Q. Does Photograph 2 show any sooting on the RBS?
A. I can't tell. There's not enough -- this is too far --
Q. You couldn't tell on Photo 1 either, could you?
A. Right.
Q. All right.
A. Photograph 5, the same but can't tell if it's on RBS. And Photograph 6, the same.
Q. Again, you can't tell if there's any sooting on RBS from Photo 6, right?
A. It's not a close enough photo of the RBS. Most all these photos show sooting, but you can't tell if it's on the RBS.
Okay. None in this stack that clearly show sooting on the RBS.
Q. All right. That was McGraw's amended report. I'm showing you what was marked as Exhibit 31 in McGraw's deposition, which is his original report from August 22, 2012. Ask you the same question. Look through the photographs and identify for us what you believe show RBS sooting.

Page 251

A. Photograph 10 probably does but, again, it's so far away and out of focus that you can't tell. So what we really get into here is just the focus and the distance on the photographs.
THE VIDEOGRAPHER: About three minutes of tape left.
A. Photograph 17, almost certainly will but, again, it's the -- it's the -- the distance from the material is such that you can't -- you can't tell in this.
Q. All right.
A. Because it includes a number of locations of -- he's calling it scorched or melted aluminum foil, so it shows at least a half a dozen of those locations.
Photograph 23, which is one that we've seen in our other report several times, it's of the dryer vent pipe. Photograph 19, which is the --
Q. That's the same photo as Photo No. 9 in your amended report, right?
A. Yeah. We've addressed that one several times. Photograph 24 -- again, I'm sure does, but it's -- the distance from the subject in the photograph is too great.
Q. So you can't tell if there's any sooting

Page 252

there from the photo?
A. Correct.
Q. All right.
A. That photograph includes a portion of the vent pipe, I believe, that was -- it does. That is in Photograph 24, so I'm fairly certain that it has some but you just can't see it in this photograph. So they're either -- in this report they're either photographs that we have already addressed in other reports or where the distance of the camera from the subject is too great and you can't -- you don't have enough detail.
Q. To be able to tell whether there's sooting or not?
A. Correct.
Q. Thank you. That's all the questions we have for you.
EXAMINATION
BY MS. MacLEOD:
Q. Mr. Simmons, this morning when we began your deposition, you were asked to list your opinions that you'd be offering at trial. Are there opinions that you intend to offer that you've not been asked about today during the deposition?
A. Yes. There are opinions that stem from my

Page 253

report and I did stipulate that any opinions in my report would be opinions that I would be offering later.

Q. And what opinions would those be that you listed and/or were in your report that you have not discussed today?

A. One of the opinions has to do with the subject of testing. We did talk quite a bit about testing that McDowell Owens has performed, but we have not talked at all about testing that other people have or have not performed. And since the subject of testing has been made to be a fairly significant issue here in this case, my complete opinion about McDowell Owens testing is that it is completely appropriate and it definitely does demonstrate the characteristics of this material when energized. Further, no evidence whatsoever has been produced of testing on similar characteristics that have been performed by anyone else. And the fact that the proposal that I saw in other reports was that McDowell Owens should have used, for example, IEEE C-62 as the testing methodology, which has --

THE VIDEOGRAPHER: Excuse me. We have to switch tapes. I'm about to run out.

MS. MACLEOD: Sorry.

Page 254

THE VIDEOGRAPHER: Sorry to interrupt your answer.

A. And this has absolutely nothing to do with radiant barrier --

MS. MACLEOD: He was asking you to stop --

THE VIDEOGRAPHER: We're about to run off right now.

THE WITNESS: Oh, right now. I'm sorry. I thought you were just giving us a warning.

THE VIDEOGRAPHER: Time is 5:29. Off the record, ending tape 7.

(Recess taken)

THE VIDEOGRAPHER: Back on the record at 5:29 p.m., beginning tape 8.

Q. (By Ms. Macleod) We just switched out the videotape and we were in the middle of talking about testing that McDowell Owens has done in regard to radiant barrier products and you were also discussing testing that others have conducted or should have conducted. If you could continue with your answer in regard to what your opinions are in regard to the testing done by others.

A. So based upon information available to me and gleaned from proposals that were made in other

Page 255

expert reports, my opinion is that manufacturers of radiant barrier products have done no testing that is appropriate to address the problem and the issue that we're dealing with here in this case. Clearly the issue here is the behavior of this material when it's energized by electrical current, and I have -- from what I see, no testing of that issue -- those characteristics, those parameters of that behavior has been performed.

Q. Is it your opinion that that testing should have been conducted?

A. Absolutely. As a -- many years as a product development engineer, I can tell you for sure that safety evaluations of products, especially consumer products, are very, very important and absolutely should be part of the protocol in developing or releasing a product. And the fact that aluminum foil is a great conductor is basic engineering knowledge. Any engineer should know that.

The fact that thin metals, thin wires, small wires, when they conduct excessive amount of current, get hot is basic engineering knowledge. Any engineer should know that. The fact that the roof structure of a house is the most likely place that

Page 256

lightning is going to strike is common knowledge. That's even reflected in the RMI -- in the R-M-I, RMI bulletin. So testing that addresses obvious potential dangers of a product absolutely should be done.

Q. And do you have any opinions -- have you done any research to determine whether Louisiana Pacific did any of that testing on the TechShield product?

A. I have been able to find zero evidence of any testing. In all of the advertisements, the testing that is mentioned is ASTM E84 and similar tests which address surface burn characteristics of construction material, things like that. Do not address behavior when energized by electrical current, do not address the ability of electrical current to generate extreme heat that will ignite the material. I have seen absolutely zero evidence and I have looked, searched that that has been -- any of that testing has been performed.

Q. Again, going back to the list of opinions that you provided this morning, anything in addition to the opinions that you've just told us about that you intend to offer that you haven't been asked about or had an opportunity to talk about today?

Page 257

A. Yes. In my report I included opinions that this material -- the behavior of this material in the location that it is installed creates a hazard. And in effect, with the characteristics of this material combined with the location that it is installed, it creates an unsafe situation. It's an unsafe product as it is used.
Q. Is it your opinion that Louisiana Pacific should have been aware of this hazard?
A. Again, it's unimaginable that they could not have been aware. We're dealing with basic engineering fundamentals here that any engineer should be aware of. This is not rocket science. It's not magic. There's nothing to -- any engineer that would think about it for a few minutes would realize aluminum is a great conductor. It's listed as No. 2 in the common conductors. Any engineer knows that if a small wire or a small conductor carries excess current, it gets hot.
Any engineer knows that the roof structure of a house is where lightning is most likely to strike and so there's a very, very good probability that radiant barrier is going to get energized by it. So you start putting that stuff together, it is very obvious that this should have

Page 258

been recognized and some level of effort should have been taken to test this material.
Excuse me, I'll have to get some water.
MS. MACLEOD: Go off the record for a second.
THE VIDEOGRAPHER: Going off the record at 5:35 p.m.
(Recess taken)
THE VIDEOGRAPHER: Back on the record at 5:35 p.m.
Q. (By Ms. Macleod) All right. We had gone over the opinions that you offered -- you stated this morning that you'd be offering and hadn't been asked about, including hazards of the product as well as material construction of the product, or I believe you called it construction materials this morning. Are there any other areas or topics in which you intend to offer an opinion that you have not had the opportunity to talk about today?
A. There are many specific technical details that underlie these opinions that relate to current flow behaviors and that sort of thing. I intend to address all of those detailed underlying issues that directly relate to and explain my opinions that I've

Page 259

already stated.
MS. MACLEOD: I don't have any other questions at this time.
FURTHER EXAMINATION
BY MR. ELLIS:
Q. Mr. Simmons, you told us that you would offer an opinion at trial relating to testing that should have been performed by others and then you referred to the manufacturer. Is the "others" that you were referring to the manufacturer, or do you mean somebody more than that?
A. The manufacturer.
Q. In this case Louisiana Pacific?
A. Yes.
Q. Show me where in your original or amended reports you offer an opinion about testing that Louisiana Pacific should have performed.
A. In those reports I did not -- we dealt with the topic of testing primarily from the point of view of the testing that we performed. In my opinion it's implicit that anyone testing the behavior of this material would do those tests, that those are the tests that need to be -- those types of tests are what need to be performed.
Q. Do you anywhere, in either your original or

Page 260

your supplemental report, give an opinion that LP should have performed certain tests and did not do it?
A. In articles, papers that were attachments to my report, I have addressed testing by manufacturer.
Q. I'm talking about Exhibits 37 and 41, which are the reports that you gave on August 29, 2012 and November 21, 2012. In either of those expert reports, do you give an opinion that LP should have performed certain testing?
A. Again, sir, there were attachments that were included to this report. In my opinion those -- and as I've already discussed, many of the details of our technical -- of our testing were explained in those attachments well beyond what's explained in the body of the report. My opinion, those attachments were part of this report.
Q. The second thing that you just testified about, Mr. Simmons, was that there were certain opinions that you didn't list this morning that the material -- I guess you were referring to the RBS -- creates a hazard because of both its characteristics and the location in which it is placed. In other words, that it makes it an unsafe product as used.

Page 261

Show me where in either Exhibit 37 or 41 you offer that as an opinion.

MS. MACLEOD: Objection to form.

A. First part of my answer to that question, Mr. Ellis, is that, again, those things are addressed in some of the attachments to these reports, but I'm looking for specifics in the report itself.

In Exhibit 41, page 11, the bottom of the second to last paragraph I state, "Reports and articles previously published by McDowell Owens and are attached to this report clearly show how easy the material is ignited." So I am specifically referring to such -- to the attachments to this report.

Q. (By Mr. Ellis) So that's supposed to support an answer to my question where I asked you to identify where in your reports you opine that the material creates a hazard because of its characteristics and the location where it's placed?

A. The bottom sentence in the conclusion of Exhibit 41, "We conclude this fire was caused by the hazardous properties and hazardous behavior of the reflective radiant barrier material."

Q. Is that the opinion that you're talking about?

A. This is one part of a statement of that

Page 262

opinion.

Q. I don't think you understood my question.

Just a few minutes ago, in answer to Ms. MacLeod's examination, you said that you were going to offer opinions that this material, the RBS, creates a hazard because of its characteristics and the places in which it is used. In other words, that it is an unsafe product as it is used. So where in your expert report does that opinion appear?

A. Part of the opinion is here in this last sentence. Again, Mr. Ellis, this issue is -- involves some fairly complex technical issues. The -- to include in a simple statement everything that relates to an opinion about those issues is just not -- is not realistic. Can't do it.

The properties of the material, the behavior of the material, that is fairly specifically addressed here. And the fact that lightning is a factor, that's specifically addressed here. The fact that locating it on the roof puts it close to lightning, that is not specifically addressed here but it's -- that's -- it is addressed in other attachments. But that is obvious, the fact that locating something in a roof structure puts it close to where lightning is likely to strike --

Page 263

Q. Sir, it's not obvious as an opinion unless you specifically put it in your expert report and you didn't do it.

A. The things that I just mentioned are specifically in this report, and I specifically mention in this report that -- that much of the support for this is in the attachments. Again, the reason that those attachments were attached is because they contain technical details that is beyond what is reasonable to put in a report.

Q. The third and last item which you said you were going to offer an opinion about at trial that you hadn't been asked about today was that Louisiana Pacific should have been aware of the hazard. Where in your original or your supplemental report do you give an opinion that Louisiana Pacific should have been aware of the hazard?

A. That will be in the attachment, sir.

Q. It's not in the reports itself, is it?

A. That specific statement is not in the body of the report. And that's why I'm bringing it out now, so that you are aware.

Q. Well, trying to make us aware of things that you're going to opine about at trial that are not in your expert reports is a violation of the

Page 264

rules, sir.

A. My opinion is they are in the report, sir, because they are in attachments. Some of it is directly in the report, some of it is in the attachments that I specifically include as part of the report.

MR. ELLIS: We don't have any other questions.

MS. MACLEOD: I don't either.

THE VIDEOGRAPHER: Going off the record at 5:46 p.m., ending the deposition with tape 8.

(Proceedings concluded at 5:46 p.m.)

CHANGES AND SIGNATURE OF RONALD D. SIMMONS

PAGE	LINE	CHANGE	REASON

I declare under penalty of perjury that the foregoing is true and correct.

_____
RONALD D. SIMMONS

SUBSCRIBED AND SWORN TO BEFORE ME, the undersigned authority, by the witness, RONALD D. SIMMONS, on this the _____ day of _____, 2012.

_____
NOTARY PUBLIC IN AND FOR
THE STATE OF _____

My Commission Expires: _____

STATE OF TEXAS
COUNTY OF HARRIS

REPORTER'S CERTIFICATE
ORAL VIDEOTAPED DEPOSITION OF RONALD D. SIMMONS
November 30, 2012

I, the undersigned Certified Shorthand Reporter in and for the State of Texas, certify that the facts stated in the foregoing pages are true and correct.

I further certify that I am neither attorney or counsel for, related to, nor employed by any parties to the action in which this testimony is taken and, further, that I am not a relative or employee of any counsel employed by the parties hereto or financially interested in the action.

SUBSCRIBED AND SWORN TO under my hand and seal of office on this the 7th day of December, 2012.

Laurie Carlisle, CSR
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