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UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

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MIDWEST ENERGY EMISSIONS CORP.  
and MES INC.,

Plaintiffs,

v. CIV. No. 1:19-cv-01334-CJB  
ARTHUR J. GALLAGHER & CO., ET AL.,  
Defendants.

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VIDEOTAPED DEPOSITION OF  
PHILIP J. O'KEEFE, P.E.  
VOLUME 2



DATE: March 3, 2023  
TIME: 9:00 a.m.  
PLACE: Express Suites  
Riverport Conference and Event Center  
900 Bruski Drive  
Winona, MN 55987

JOB NO.: NY 5775935

REPORTED BY: Dawn Workman Bounds, CSR

Page 197

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25 (APPEARANCES CONTINUED ON NEXT PAGE)

Page 199

1           I N D E X

2 WITNESS: PHILIP J. O'KEEFE, P.E.                   PAGE

3 EXAMINATION BY DR. GLANDORF..... 202

4 EXAMINATION BY MR. DYESS..... 343

5 EXAMINATION BY MR. NEMUNAITIS..... 399

6 EXAMINATION BY DR. GLANDORF..... 411

7 CONFIDENTIAL DESIGNATION: By Mr. Nemunaitis

8 EXHIBITS MARKED/REFERRED TO

9 No. 10: United States Patent 10,343,114 B2..... 210

10 No. 11: 4700. Hydrogen Bromide document..... 215

11 No. 12: United States Patent 10,668,430 B2..... 226

12 No. 13: United States Patent 10,596,517 B2..... 226

13 No. 14: United States Patent 10,589,225 B2..... 227

14 No. 15: Provisional Application  
 ME2C-RC-00055866..... 237

15

16 No. 16: Full Scale Evaluations of Mercury Control  
 Technologies PowerPoint - Sjostrom..... 246

17 No. 17: IPR Declaration of Inventor John Pavlish  
 IPR2020-00926..... 263

18

19 No. 18: Declaration on Behalf of Salt River Project  
 Restricted - Attorneys' Eyes Only  
 ME2C-RC-00279507..... 316

20

21 No. 19: Declaration on Behalf of DTE Electric Co.  
 Restricted - Attorneys' Eyes Only  
 ME2C-RC-00279493..... 324

22

23

24

25

Page 198

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Page 200

1 (EXHIBITS CONTINUED)

2 No. 20: Defendants NRG Energy, Inc.'s, NRG Texas Power  
 LLC'S, Midwest Generation EME, LLC'S, and  
 3 Midwest Generation, LLC'S First Supplemental  
 Response to Plaintiffs Midwest Energy Emissions  
 4 Corp. and MES Inc.'s First Set of Common Coal  
 Plant, Interrogatories to Vistra, AEP, NRG,  
 5 and Talen (NOS. 2-6)  
 Restricted - Outside Attorneys' Eyes Only  
 6 ME2C-RC-00078219..... 389  
 7

8 PREVIOUSLY MARKED EXHIBITS REFERRED TO:

9 No. 2: Rebuttal Expert Report of  
 Philip J. O'Keefe, PE  
 Regarding Patent Validity..... 255

10

11 No. 3: Expert Report of Philip J. O'Keefe, PE  
 in Reply to Defendants Rebuttal Reports... 387

12 No. 5: United States Patent 8,168,147 B2..... 203

13

14 (Original exhibits attached to original transcript;  
 copies to counsel as requested. Previously marked  
 15 exhibits referenced not attached.)

16

17 REPORTER'S NOTE: All quotations from exhibits are  
 reflected in the manner in which they were read into the  
 record and do not necessarily indicate an exact quote  
 18 from the document.  
 19  
 20  
 21  
 22  
 23  
 24  
 25

Page 201

1 PROCEEDINGS  
2 THE VIDEOGRAPHER: Good morning. We're  
3 going on the record at 9:00 a.m. on March 3, 2023.  
4 Please note this deposition -- please note that the  
5 microphones are sensitive and may pick up whispering and  
6 private conversations. Please mute your phones at this  
7 time. Audio and video recording will continue to take  
8 place unless all parties agree to go off the record.  
9 This is media unit 1, volume 2 of the  
10 video-recorded deposition of Philip O'Keefe taken by  
11 counsel for the defendants in the matter of Midwest  
12 Energy Emissions Corporation and MES, Incorporated versus  
13 Arthur J. Gallagher and Company, et al., filed in the  
14 United States District Court for the District of  
15 Delaware, case number 119-01-334.  
16 This deposition is located in Winona,  
17 Minnesota. My name is Dave Young. I'm the videographer.  
18 Our court reporter today is Dawn Bounds. We are  
19 representing Veritext Legal Solutions. I am not related  
20 to any party in this action, nor am I financially  
21 interested in the outcome.  
22 If there are any objections to this  
23 proceeding, please state them at the time of your  
24 appearance. Will counsel now state their appearances and  
25 affiliations for the record beginning with the noticing

Page 202

1 attorney.  
2 DR. GLANDORF: My name is David Glandorf  
3 of Gibson Dunn. I'm here with my colleague Ina Kosova,  
4 and also on the line is Joseph Evall. We are with Gibson  
5 Dunn and are representing the Gallagher and DTE  
6 Defendants.  
7 MR. DYESS: Jeff Dyess with Bradley Arant  
8 firm. Also joining online today will be Paul Sykes and  
9 Ben Wilson, also with the Bradley firm; and we represent  
10 the CERT, C-E-R-T, Defendants.  
11 MR. NEMUNAITIS: Justin Nemunaitis with  
12 Caldwell Cassady Curry representing the Plaintiffs.  
13 THE VIDEOGRAPHER: Will the court reporter  
14 please reswear the witness, and then we can proceed.  
15 PHILIP O'KEEFE, P.E.,  
16 having been first duly sworn, testified as follows:  
17 EXAMINATION  
18 BY DR. GLANDORF:  
19 Q. Good morning, Mr. O'Keefe.  
20 A. Good morning. Well, before we get started, I'd  
21 like to go back to the '147 patent to clarify some  
22 things.  
23 Q. Okay. Let's do that in a moment, if we could.  
24 So hold on to that, and we'll come back to that in a  
25 moment.

Page 203

1 Let me ask you first, did you speak with  
2 your attorney about the substance of your deposition?  
3 A. No.  
4 Q. Did you speak with anyone about your deposition  
5 testimony yesterday?  
6 A. No.  
7 Q. Okay. Let's open the '147, and I'll give you a  
8 chance to speak to me in a minute, but I have a few  
9 questions of my own first, if that's okay.  
10 A. Okay. Sure.  
11 Q. Let's go to the '147. What exhibit is that?  
12 5, I believe.  
13 So you can go to it in your notebook.  
14 It's also on the -- on the computer.  
15 Do you have the '147?  
16 A. Yes.  
17 Q. Oh, you have it in front of you already. Okay.  
18 Great.  
19 Well, let's go back to claim 17, because I  
20 did have a couple of clarification questions I wanted to  
21 ask. So if you go to claim 17.  
22 And claim 17 is a dependent claim,  
23 correct?  
24 A. Correct.  
25 Q. And it depends on claim 1, correct?

Page 204

1 A. Correct.  
2 Q. And do you agree that there is a reaction that  
3 we looked at -- a specific reaction that we looked at in  
4 claim 1?  
5 A. Yes.  
6 Q. And could you identify for me what that  
7 specific reaction is?  
8 A. Bromine and mercury in conjunction with  
9 activate carbon.  
10 Q. Well, let's -- I think -- let's look at the  
11 claim language because I think we want to be a little  
12 more specific than that, so let's look at 1A, if we  
13 could.  
14 If you could find in there where it says  
15 "chemically reacting."  
16 Do you see that phrase?  
17 A. Yes.  
18 Q. Okay. So that -- what follows there is a  
19 description of a chemical reaction, correct?  
20 A. I think so, yes.  
21 Q. What is the chemical reaction between?  
22 A. Bromine and mercury.  
23 Q. I'm sorry, Mr. O'Keefe. I need you to look at  
24 the claim language. There's no mention of mercury in  
25 this -- in this first portion here, right?

Page 205

1 Let me read it into the record, and then  
2 I'll ask you to comment on it again.  
3 "Chemically reacting the sorbent material  
4 with a bromine containing promoter to form a promoted  
5 brominated sorbent."  
6 Did I read that correctly?  
7 A. Yes.  
8 Q. There's no mention of mercury there, correct?  
9 A. Right.  
10 Q. Okay. So let me -- let me just reask my  
11 previous question, which is: What is the chemical  
12 reaction that's described that?  
13 A. You're brominating activated carbon.  
14 Q. Thank you.  
15 So there is a reaction between the bromine  
16 containing promoter and the sorbent material; is that  
17 correct?  
18 A. Yes.  
19 Q. Okay. And now if we go down further to where  
20 it -- I'm going to look at the end of line 41 where it  
21 says, "and." "And wherein the activated carbon."  
22 Do you see that?  
23 A. Are you saying 41?  
24 Q. At the end of 41, there is an "and."  
25 A. Yes.

Page 206

1 Q. And then following that, I wanted to focus on  
2 chemical reaction that's following that.  
3 A. "And wherein the activated carbon contains  
4 graphite sheets -- graphene sheets having carbon species  
5 edge sites which react with bromine containing promoter."  
6 Q. That's the same reaction that we just mentioned  
7 above, correct?  
8 A. Correct.  
9 Q. This is just adding more detail to it; is that  
10 fair?  
11 A. I think so, yes.  
12 Q. And so, again, we see that the  
13 bromine-containing promoter needs to have a chemical  
14 reaction with the activated carbon, correct?  
15 A. Yes.  
16 Q. That reaction, in fact, has to happen  
17 specifically at the carbene species edge site?  
18 A. That's what it says.  
19 Q. Okay. Is that your understanding --  
20 A. Yes.  
21 Q. -- of it?  
22 And what I'd -- what I'd like to know from  
23 you is how would a person of skill in the art know that  
24 that specific reaction is happening in a particular power  
25 plant?

Page 207

1 A. Well, it's described in the exam -- examples.  
2 Q. What do you mean it's described in the  
3 examples?  
4 A. How they brominate the activated carbon.  
5 Q. So if -- to make sure -- to -- for this -- let  
6 me make sure I understand.  
7 For a PO -- is it your testimony that for  
8 a POSA to understand that this reaction is happening,  
9 they have to follow one of the specific examples in the  
10 patent?  
11 A. Well, the examples provide a guide on how to  
12 brominate the carbon, activate carbon.  
13 Q. And is it your testimony, then, that if a  
14 person followed one of these specific examples, they  
15 would know that the reaction is occurring as being -- as  
16 described here?  
17 A. I think so, yes.  
18 Q. And if they chose to add -- if they chose to  
19 create the promoted brominated sorbent in a different  
20 way, how would they then know whether or not this  
21 specific reaction is happening?  
22 A. I don't know.  
23 Q. They wouldn't be able to know?  
24 A. I don't know. I haven't given it any thought.  
25 Q. You haven't -- okay. You haven't -- okay.

Page 208

1 Would they have to perform some kind of  
2 analyt -- chemical -- an -- let me start again.  
3 Would they have to perform some kind of  
4 analytical technique to determine whether or not this  
5 reaction is happening?  
6 A. I don't know. I would assume it would take  
7 some sort of testing.  
8 Q. And is that something a person of skill in the  
9 art in this case could do?  
10 A. No.  
11 Q. Okay.  
12 A. Can I say what I have to say now?  
13 Q. Sure.  
14 A. Okay. We were talking about the examples in  
15 the 4 -- '147 patent.  
16 Q. Yes.  
17 A. Examples 1 through, I think, 12.  
18 And some of those examples talk about  
19 activated -- making brominated activated carbon. Okay.  
20 And I think you asked me yesterday -- and I got a good  
21 night's sleep tonight -- or last night, and I was  
22 thinking about it this morning.  
23 I -- I think I testified that the process  
24 of making brominated activated carbon in the example --  
25 some of the examples is an in-flight reaction. In other

Page 209

1 words, you're taking activated carbon powder and mixing  
2 it with bromine gas, and I think I testified -- correct  
3 me if I'm wrong -- that that's in-flight reaction.  
4 Q. I don't have the record in front of me, but  
5 that does sound consistent with -- to me, but...  
6 A. I seem to remember that.  
7 Q. Yes.  
8 A. Okay.  
9 Q. I do recall we went through the examples, and I  
10 asked you a series of questions.  
11 A. Yes.  
12 Q. And one of the questions I asked each time was,  
13 is this an example of in-flight -- in-flight promotion --  
14 I'm sorry -- an in-flight reaction?  
15 A. It is not.  
16 Q. So sitting here today, it's your testimony that  
17 none of the examples are -- disclose in-flight reaction?  
18 A. Right.  
19 Q. Okay. And so you were mistaken yesterday when  
20 you said that?  
21 A. Yes.  
22 Q. Okay. Okay. I understand that.  
23 Let's go ahead and open the '114 patent,  
24 if we could.  
25 A. Okay.

Page 210

1 Q. And if we could turn to the claims of that.  
2 DR. GLANDORF: What exhibit is this, Ina?  
3 I'm sorry.  
4 (Exhibit No. 10 marked.)  
5 BY DR. GLANDORF:  
6 Q. Ina tells me that it's Exhibit 10.  
7 Okay. Let's look at claim 1 of the '114  
8 patent, if we could.  
9 A. Okay.  
10 Q. And yesterday we looked at the '147 patent,  
11 which, if you recall, requires the injection of the  
12 brominated containing promoter into a gas stream?  
13 A. Well --  
14 Q. Among other things.  
15 A. Yes.  
16 Q. In this -- let's look now at the '114 and see  
17 how the bromine is added.  
18 Go ahead and take a moment to read claim  
19 1, and then let me know -- I'll reask my question.  
20 My question is going to be how the bromine  
21 is required to be added.  
22 A. Okay.  
23 Q. According to the '114 patent, what are the  
24 requirements for how a halogen or halide promoter is to  
25 be added?

Page 211

1 A. Well, it says upstream of the combustion  
2 chamber, so that would be in the coal coming off of the  
3 coal pile or before it enters the pulverizer or even  
4 after it leaves the pulverizer but before it enters the  
5 combustion chamber.  
6 Q. And the specific promoters being called out  
7 here comprise Br<sub>2</sub>, HBr, Br-, or a combination thereof; is  
8 that fair?  
9 A. Correct.  
10 Q. Is it your opinion in this case that the power  
11 plants accused of infringement add one of those promoters  
12 to the -- in the way claimed here?  
13 A. Yes.  
14 Q. Which promoter is that?  
15 A. Br<sub>2</sub>.  
16 Q. Your testimony is that the power plants accused  
17 of infringement here add Br<sub>2</sub> as a promoter?  
18 A. Yep.  
19 Q. And how did that -- how do they add that Br<sub>2</sub>,  
20 in your opinion?  
21 A. I think they sprayed it onto the coal in the  
22 refining process.  
23 Q. They spray -- sorry. Let me reask that.  
24 It's your understanding that the power  
25 plants spray Br<sub>2</sub> onto the coal in the refining process?

Page 212

1 A. It's not the power plants. It's the refiners.  
2 Q. Thank you.  
3 A. They buy the coal from the power plant. They  
4 refine it by spraying on the bromide compound, and then  
5 they sell it back to the power plants to be ground in the  
6 pulverizers and sent to the combustion chamber.  
7 Q. Thank you for that correction. Let me reask my  
8 question.  
9 It's your opinion that the power plants --  
10 sorry. Let me rephrase.  
11 It's your opinion that the refined coal  
12 producers spray Br<sub>2</sub> onto the coal in -- in this case?  
13 A. Calcium bromide, which is CaBr<sub>2</sub>.  
14 Q. Oh, okay. So it's calc -- I'm sorry. Let's  
15 go -- let's correct it then.  
16 It's your opinion that calcium bromide is  
17 sprayed onto the coal at the -- before it's introduced to  
18 the accused power plants?  
19 A. Correct.  
20 Q. So again, if I look at the list here of Br<sub>2</sub>,  
21 HBr, and Br-, which of those three would include calcium  
22 bromide?  
23 A. The Br<sub>2</sub>.  
24 Q. Do any of the -- do any of the power plants add  
25 HBr to the coal?

Page 213

1 A. I don't think so.  
2 Q. Do you know what -- do you know what phase HBr  
3 is at room temperature?  
4 A. No.  
5 Q. And is it okay if I refer to HBr as hydrogen  
6 bromide?  
7 A. Yes.  
8 Q. I'll introduce a new exhibit here quickly,  
9 which is this one.  
10 DR. GLANDORF: Do you see this one?  
11 This is one of the ones that Joe sent.  
12 BY DR. GLANDORF:  
13 Q. All right. While we're getting it up, let me  
14 just -- let's continue. Let's look back again at claim  
15 1, if we could.  
16 Your understanding is that when refined  
17 coal is made, that calcium bromide is added to the coal;  
18 is that correct?  
19 A. I'm sorry. Can you ask that again.  
20 Q. Sure. Your understanding is that when refined  
21 coal is made, the calc -- calcium bromide is added to the  
22 coal?  
23 A. Yes.  
24 Q. And I believe we looked at three -- a list of  
25 three different bromine species in this claim, which was

Page 214

1 Br<sub>2</sub>, HBr, and Br<sup>-</sup>, correct?  
2 A. Correct.  
3 Q. And which of those three, again, corresponds to  
4 calcium bromide?  
5 A. Br<sub>2</sub>.  
6 Q. And what -- what is Br<sub>2</sub>?  
7 A. It's bromide.  
8 Q. Do you know the formula of calcium bromide?  
9 A. CaBr<sub>2</sub>.  
10 Q. So a POSA would understand Br<sub>2</sub> to mean any  
11 bromide, including calcium bromide?  
12 A. Well, I think the important word there is  
13 "comprises."  
14 Q. Okay.  
15 A. So that can include Br<sub>2</sub>.  
16 Q. I see.  
17 So a POSA would understand that phrase to  
18 mean a compound comprising Br<sub>2</sub>?  
19 A. As long as it has Br<sub>2</sub> in it.  
20 Q. So, for example, for sodium bromide, which I'll  
21 represent it's formulated NaBr, that would not comprise  
22 Br<sub>2</sub>; is that correct?  
23 A. NaBr?  
24 Q. Yes.  
25 A. NaBr-?

Page 215

1 Q. Just NaBr.  
2 A. I'm not sure.  
3 Q. Okay. I think we're ready with that exhibit.  
4 I think we are up to 11. This one, unfortunately, we  
5 only have electronically. It's only one page -- oh, no,  
6 it's not. It's three pages.  
7 THE WITNESS: I'll let you handle that.  
8 (Exhibit No. 11 marked.)  
9 A. Okay.  
10 BY DR. GLANDORF:  
11 Q. And I don't know if you're able to scroll  
12 through the three pages here. The title page of this  
13 book is on the third page.  
14 A. Well, let's see...  
15 Yeah, I guess I can scroll through.  
16 Q. Okay.  
17 A. What am I supposed to be looking at?  
18 Q. Let's look at the third page.  
19 A. Well, the third page looks like it's an index  
20 or a title page.  
21 Q. Correct. What is the title of this -- that's  
22 the title of this book, I will tell you.  
23 A. The Merck Index.  
24 Q. Yes. Are you familiar with this book?  
25 A. I've heard of it. I might have looked at it in

Page 216

1 the past.  
2 Q. And I'll represent to you that it has  
3 information on various chemical species?  
4 A. Yes.  
5 Q. And if you go now up to the first page, you  
6 will see that there is an entry for hydrogen bromide.  
7 A. Okay.  
8 Q. And we were discussing that earlier --  
9 A. Yes.  
10 Q. -- do you recall?  
11 A. Yes.  
12 Q. And the chemical formula is -- for hydrogen  
13 bromide is HBr?  
14 A. They have BrH.  
15 Q. It is interesting, they have BrH.  
16 If you look farther across the line, they  
17 also say HBr.  
18 A. Oh, yeah. Okay.  
19 Q. But you're right, I agree, it indicates both  
20 BrH and HBr, correct.  
21 A. Okay.  
22 Q. And HBr is one of the three options for the  
23 bromine species in claim 1 of the '114 patent, correct?  
24 A. Okay. Yeah.  
25 Q. And I asked you what -- what phase it is at

Page 217

1 room temperature.  
2 And my question is, again, whether it's  
3 solid, liquid, or gas.  
4 A. I don't know.  
5 Q. Fair enough. I think we can find the answer  
6 here.  
7 A. Okay.  
8 Q. If we look down in the last paragraph, do you  
9 see, first of all, the description that it is a  
10 colorless, corrosive, nonflammable gas?  
11 Do you see that?  
12 A. Yeah. But it's unclear as to what they're  
13 talking about. It's hydrogen bromide, so it's HBr, BrH.  
14 Okay. So they're talking about that it's  
15 a gas.  
16 Q. Correct. And, in fact, let's -- if you look  
17 down a few more lines, you'll see there's an indication  
18 of the melting point and the boiling point.  
19 Do you see those?  
20 A. Yes.  
21 Q. And what's its melting point?  
22 A. Melting point is minus 86.9 degrees, and I  
23 would assume that's Fahrenheit.  
24 Q. I believe that is Celsius.  
25 A. Celsius, okay.

Page 218

1 Q. Yep. And do you see the boiling point?  
2 A. It is minus 66.8 degrees Celsius.  
3 Q. So again, does that inform your understanding  
4 of what -- whether HBr is a solid, liquid, or gas at room  
5 temperature?  
6 A. Well, I guess it would be a gas.  
7 Q. So let's go back now to the '114 patent, if we  
8 could.  
9 A. Okay.  
10 Q. Oh, I'm sorry, one -- one more thing from  
11 Exhibit 11.  
12 That paragraph we were looking at with the  
13 melting point and boiling point, do you see the first  
14 line in that paragraph indicates that it is a corrosive  
15 gas?  
16 A. Yes.  
17 Q. If we go back to the '114 and we go to line 55  
18 of column 33, so in claim 1, line 55.  
19 A. Okay.  
20 Q. And it says that the coal comprises added B2,  
21 HBr, Br-, or a combination thereof added to the coal  
22 upstream of the combustion chamber.  
23 Do you see that?  
24 A. Yes.  
25 Q. Are -- do you understand that refined coal is

Page 219

1 ever made with HBr added to the coal?  
2 A. Not that I'm aware of.  
3 Q. If a person of the skill in the art wanted to  
4 add HBr to the coal upstream of the combustion chamber,  
5 how would a person of skill do that?  
6 A. I don't know.  
7 Q. HBr is a gas at room temperature, correct?  
8 A. Right, and it's corrosive too. So it's not  
9 very good for the pulverizer or the boiler combustion  
10 process.  
11 Q. Where in the process would a person skilled in  
12 the art be able to add HBr?  
13 A. Well, it says it's added to the coal, but I  
14 don't know how.  
15 Q. That's what I'm asking you. As an engineer,  
16 what -- what challenges do you see to adding HBr to the  
17 coal upstream of the furnace?  
18 A. Well, it's a gas so it's difficult to handle,  
19 so I haven't given it much thought.  
20 Q. Do you -- you understand that -- do you know  
21 how the coal is transported from the pulverizer to the  
22 furnace?  
23 A. It's usually blown in with primary air from the  
24 exhauster.  
25 Q. That's how it gets blown in.

Page 220

1 What about being actually moved from  
2 the -- where the pulverizer to the furnace?  
3 A. It's done with primary air. It's blown in.  
4 It's blown out of the mill.  
5 Q. Out of the mill. Okay.  
6 A. At a pulverizer, yeah.  
7 Q. Do you understand that when coal is moved  
8 around at a power plant, that it usually is moved along  
9 conveyor belts?  
10 A. Well, yeah, that's, you know, the raw coal  
11 before it's processed. But it's actually ground into  
12 fine powder in the pulverizer.  
13 Q. And then -- understood.  
14 And so if you added HBr to the raw coal,  
15 would you expect the HBr to remain on there as the coal  
16 is being transported along conveyor belts?  
17 A. I really don't know.  
18 Q. Would a person of skill know how to add HBr to  
19 coal?  
20 A. I suppose if they give it some thought, but I  
21 haven't given it any thought.  
22 Q. Now, if I go back to line 53 of this -- again,  
23 I'm in the '114 patent -- do you see it references a  
24 halogen or halide promoter?  
25 A. Line 53?

Page 221

1 Yeah, I do.  
2 Q. And that halogen or halide promoter comprises  
3 HBr or Br- here, correct?  
4 A. Right.  
5 Q. Now, do you understand that word "promoter" to  
6 be an indication that the halogen or halide, it needs to  
7 promote the activated carbon?  
8 A. Well, it has to promote the bonding of mercury.  
9 Q. That's right.  
10 And as we saw on the '147, for example,  
11 the way it promotes it is through the reaction between  
12 the bromine species and the activated carbon?  
13 A. Well, that's later on in the flue gas.  
14 Q. Let me ask you this.  
15 That reference to the word "promoter"  
16 is -- in the '114 patent, is that same promotion that's  
17 happening in the '147 patent?  
18 A. Well, the '147 patent discloses adding a  
19 promoter and a halided -- or an activated carbon together  
20 into the flue gas. It doesn't talk about anything added  
21 to coal.  
22 Q. But is the promotion reaction the same in the  
23 end?  
24 A. Well, as long as you have bromine in there and  
25 activated carbon, yeah, I guess the reaction would be the

Page 222

1 same. It wouldn't be as effective, but it would be the  
2 same.  
3 Q. Both patents are talking about the same  
4 promotion though, correct?  
5 A. Well, they want to remove mercury from the flue  
6 gas before it goes up the stack.  
7 Q. And both patents are requiring it to go through  
8 the same promotion reaction?  
9 MR. NEMUNAITIS: Objection, scope.  
10 A. Basically.  
11 BY DR. GLANDORF:  
12 Q. Well, turning back to the '147 again, the 1A.  
13 A. All right. Let me get there.  
14 Q. Yeah, we'll be going back and forth between  
15 these two a little bit, so...  
16 A. Could I -- could I ask for a bookmark of some  
17 sort?  
18 Q. Yeah. We have these.  
19 A. Yeah, that's fine. Just one sheet.  
20 Q. Oh, okay.  
21 A. That will help me out quite a bit.  
22 Okay. We're going to claim 1A. Yes.  
23 Q. So we looked at 1A earlier this morning,  
24 and it's talking about promotion, correct?  
25 A. Yes.

Page 223

1 Q. And it's talking about a reaction that forms a  
2 promoted brominated sorbent.  
3 Do you see that?  
4 That's in line 39, for example.  
5 A. Yes.  
6 Q. So going back now to the '114 where it has a  
7 reference to halogen or halide promoter.  
8 A. Now we're looking at claim 1?  
9 Q. Yes.  
10 A. Okay.  
11 Q. Do you understand that reference to a promoter  
12 to be a reference to a substance that performs the  
13 promotion reaction that is described back in the '147,  
14 claim 1?  
15 MR. NEMUNAITIS: Objection, scope.  
16 A. Basically.  
17 BY DR. GLANDORF:  
18 Q. Are there any differences between the two?  
19 A. I haven't given it much thought. I don't know.  
20 Q. Let's open the '430 patent, and let's look at  
21 claim 20, if we could.  
22 A. Okay. You want know read it, or...  
23 Q. Sure, but nice and slow for the reporter.  
24 Yeah, that'd be great.  
25 A. Well, I'll just read it to myself.

Page 224

1 Q. Oh, I see. I was -- no, let's go ahead and  
2 read it into the record.  
3 A. Okay. Sure. "The method of claim 1 wherein  
4 the sorbent injected into the mercury-containing gas is a  
5 sorbent attained by contacting a sorbent with a halogen  
6 or halide promoter prior to injection of the sorbent into  
7 the mercury containing gas."  
8 Q. So that claim has the phrase "a halogen or  
9 halide promoter."  
10 Do you see that?  
11 A. Yes.  
12 Q. That's a reference to the same promotion  
13 reaction we looked at in the '147 patent, claim 1,  
14 correct?  
15 MR. NEMUNAITIS: Objection, scope.  
16 A. No, not necessarily.  
17 BY DR. GLANDORF:  
18 Q. What are the differences between the promotion  
19 reaction here and the reaction that's happening in claim  
20 1 of the '147?  
21 A. Well, it sounds like the halogen promo --  
22 promoter is injected separately.  
23 Hold on a second.  
24 Q. Sure.  
25 A. Okay. It's a little confusing, but my

Page 225

1 interpretation is you would be injecting the halide  
2 promoter prior or separately prior or separately from  
3 injecting the sorbent into the gas.  
4       So in other words, it could be injected on  
5 the coal. It could be injected over the fireball in the  
6 furnace, or it can be injected in the gas duct prior to  
7 injecting the activated carbon, for example.  
8       Q. Regardless of the way that it is introduced  
9 into the system -- let me rephrase that.  
10       Regardless of the way the bromine species  
11 is introduced into the system, do you agree that the  
12 promotion reaction that occurs is still the same reaction  
13 that is described in the '147, claim 1?  
14       A. Well, you're bonding mercury to the bromine,  
15 and then you're enhancing the reaction with activated  
16 carbon, so...  
17       Q. So is that the same reaction?  
18       A. Well, basically, in a different way.  
19       Q. And how is it different?  
20       A. Well, like I said, you're injecting the bromine  
21 prior to injecting the activated carbon like upstream in  
22 the gas or the coal.  
23       Q. So the difference that you're identifying is a  
24 difference in the way the bromine and the activated  
25 carbon is introduced into the system?

Page 226

1       A. Yes.  
2       Q. But is there any difference in the reaction  
3 that occurs after the addition of those into the system?  
4       A. I don't think so.  
5       Q. Let's look at the '517 patent.  
6       A. Okay.  
7       Q. And we're going to go to claim 23.  
8       A. Okay.  
9       Q. Actually, I'm sorry. Let's go to claim 30, if  
10 we could.  
11       A. Okay.  
12       Q. You can read claim 30. Why don't you take a  
13 moment just to read claim 30 to yourself, but then I'm  
14 going to direct you to a particular part for our  
15 questions.  
16       MR. GLANDORF: Just for the record, while  
17 he's looking, I think we have labeled on the system the  
18 '430 patent as Exhibit 12 and the '517 patent as Exhibit  
19 13.  
20       (Exhibit Nos. 12-13 marked.)  
21       A. Okay.  
22 BY DR. GLANDORF:  
23       Q. So going to claim 30 -- and I'm going to focus  
24 on the first kind of major paragraph there that starts  
25 "Combusting coal in a combustion chamber."

Page 227

1       Do you see that?  
2       A. Yes.  
3       Q. And again, it says, "The mercury-containing gas  
4 comprises a halogen or halide promoter."  
5       Do you see that?  
6       A. Excuse me. Yes.  
7       Q. So that's the same language that we saw earlier  
8 in the '114, that there is a halogen or halide promoter,  
9 that phrase?  
10       A. Yes.  
11       Q. And so as with the '114 and the '430, do you  
12 understand this reference to a promoter to be a reference  
13 to that same promotion reaction?  
14       A. Yes.  
15       Q. Okay. Let's look now at the '225 patent, and  
16 so this will be Exhibit 14.  
17       (Exhibit No. 14 marked.)  
18       MR. NEMUNAITIS: I would object that --  
19 outside the scope on that one.  
20       Give me a second to get in objections  
21 before you answer.  
22       THE WITNESS: I'm sorry.  
23 BY DR. GLANDORF:  
24       Q. Yeah, your counsel is just saying when I ask  
25 you a question, just pause so he can object.

Page 228

1       A. Well, I understand that --  
2       Q. Okay. Yeah, great. Yeah.  
3       A. -- what he said, but can you repeat your  
4 question.  
5       Q. No. I don't feel the need to repeat my  
6 question. We already went through that.  
7       A. Okay.  
8       Q. You've already answered my question. There's  
9 no question pending.  
10       A. All right.  
11       Q. He's just -- he just means for future  
12 questions.  
13       A. Okay.  
14       MR. NEMUNAITIS: Which patent were you  
15 asking about?  
16       DR. GLANDORF: '225.  
17       MR. NEMUNAITIS: '225.  
18       DR. GLANDORF: Yeah, and I think we're  
19 going to mark that as Exhibit 14.  
20       A. Okay.  
21 BY DR. GLANDORF:  
22       Q. So Exhibit 14 is the '225 patent.  
23       Do you see that up --  
24       DR. GLANDORF: Is that up on the screen,  
25 Justin? Can we --

9 (Pages 225 - 228)

Page 229

1 THE WITNESS: No.  
2 DR. GLANDORF: -- reload the latest  
3 exhibit.  
4 THE WITNESS: Okay.  
5 BY DR. GLANDORF:  
6 Q. Okay. We're going to go ahead and turn to  
7 the -- if you could just confirm for me that Exhibit 14  
8 on the screen is the '225 patent.  
9 A. Yes, it is.  
10 Q. Okay. And you have a paper copy of it there?  
11 A. Yes.  
12 Q. Okay. One moment, please. I'm sorry.  
13 Let's look at claim 22, if we could.  
14 A. Okay.  
15 Q. Do you see in 22 there is that same phrase "a  
16 halogen or halide promoter"?  
17 A. Yes.  
18 Q. Again, my question is: Is that the same  
19 language we saw previously in the '430 and the '517  
20 patents?  
21 MR. NEMUNAITIS: Objection, scope.  
22 A. I don't know.  
23 BY DR. GLANDORF:  
24 Q. Do you agree that it's the same -- same words,  
25 "a halogen or halide promoter"?

Page 230

1 A. Well, yeah.  
2 Q. Do you understand that to -- do you understand  
3 the reference to a promoter to be a reference to the same  
4 promotion reaction that we discussed in the '147 patent  
5 claims?  
6 A. I think so.  
7 Q. Let's go to claim 1 of this patent, if we  
8 could.  
9 A. '225?  
10 Q. Yeah, the '225.  
11 A. Okay.  
12 Q. Let's take a moment and break down the  
13 requirements of this claim, if we could.  
14 So go ahead and read through that whole  
15 claim, and then I'll direct you to some specific  
16 questions.  
17 A. Okay.  
18 Q. Let's start at the last part of this claim, if  
19 we could.  
20 One of the requirements of claim 1 is  
21 adding a particulate sorbent material comprising  
22 activated carbon into the mercury-containing gas,  
23 correct?  
24 A. Correct.  
25 Q. So this claim requires adding activated carbon

Page 231

1 sorbent into the flue gas?  
2 A. That's what it says.  
3 Q. You agree with my characterization?  
4 A. Yes.  
5 Q. So that's one requirement, is adding activated  
6 carbon.  
7 This also -- let's look at some of the  
8 other requirements earlier in the claim.  
9 It requires you combust a mixture.  
10 Do you see that?  
11 A. Yes.  
12 Q. One of the things in that mixture is coal,  
13 correct?  
14 A. Correct.  
15 Q. One of the things in that mixture is pyrolysis  
16 char?  
17 A. Correct.  
18 Q. And then one of those things in that mixture is  
19 an additive comprising some type of bromine?  
20 A. Hydrogen bromide.  
21 Q. Hydrogen bromide, a bromide compound, or a  
22 combination thereof?  
23 A. Right.  
24 Q. So you agree the combustion mixture must have  
25 at least three things: Coal, pyrolysis char, and then

Page 232

1 some type of bromine listed here?  
2 A. Yes.  
3 Q. And then -- so in a way, there's really four  
4 requirements here. There's coal, pyrolysis char, some  
5 type of bromide compound, and then at the back end,  
6 there's activated carbon?  
7 A. Right.  
8 Q. What is your understanding of what role the  
9 pyrolysis char in the claims plays in treating a  
10 mercury-containing gas?  
11 A. I don't know.  
12 Q. Are you familiar with pyrolysis char?  
13 A. Yes.  
14 Q. Is it combustible?  
15 A. Yes.  
16 Q. If you're combusting a mixture of coal and  
17 pyrolysis char, would you expect pyrolysis char in the  
18 mixture to combust?  
19 A. Yes.  
20 Q. What would be a POSA's understanding of the  
21 role of pyrolysis char in treating a mercury-containing  
22 gas?  
23 A. I don't know.  
24 Q. What kind of a technical background would you  
25 need to determine whether the pyrolysis char played any

10 (Pages 229 - 232)

Page 233

1 role in removing mercury?  
2 A. I don't know.  
3 Q. Is there any way for a person to know how  
4 pyrolysis char might interact with mercury in the flue  
5 gas?  
6 A. It contains carbon.  
7 Q. It does contain carbon.  
8 Now, if you recall, it's introduced into  
9 the combustion zone, correct?  
10 A. Right.  
11 Q. So where might it react with mercury?  
12 A. Well, in the coal.  
13 THE WITNESS: You know what, can we take a  
14 little break?  
15 DR. GLANDORF: Sure.  
16 THE VIDEOGRAPHER: We are going off the  
17 record. The time now is 9:49.  
18 (Recess 9:49-9:55.)  
19 THE VIDEOGRAPHER: We are back on the  
20 record. This is the start to media number 2. The time  
21 is 9:55.  
22 BY DR. GLANDORF:  
23 Q. Just continuing on, on '225, claim 1.  
24 How would a person of skill in the art  
25 know whether there is any pyrolysis char in the mixture

Page 234

1 that was being combusted?  
2 A. Whenever you combust coal you create pyrolysis  
3 char.  
4 Q. It's always there whenever you combust coal?  
5 A. Right. It depends, you know, whether it's  
6 completely turned into ash or not, you know, by the  
7 combustion process.  
8 Q. It's an inherent result of combusting coal --  
9 sorry, let me rephrase that.  
10 Pyrolysis char is an inherent result from  
11 the combustion of coal; is that correct?  
12 A. Correct. Correct.  
13 Q. Now, does claim 1 require any particular amount  
14 of pyrolysis char?  
15 A. No.  
16 Q. How would a person with skill in the art know  
17 if there was enough pyrolysis char to accomplish the  
18 goals of claim 1?  
19 A. Well, during combustion there's always  
20 pyrolysis char.  
21 You know, the question is whether it's  
22 entirely burned off or not during the combustion  
23 process.  
24 Q. And how would a person of skill determine  
25 whether or not it's entirely burned off?

Page 235

1 A. Well, you would analyze the coal hopper -- or  
2 ash hopper samples to see if there's any particles of  
3 uncombusted coal or pyrolysis char in the fly ash.  
4 And I used to have to do that in order to  
5 determine whether or not the pulverizers were working  
6 correctly.  
7 Q. And looking at claim 1, is it important to know  
8 whether the pyrolysis char was all combusted or not?  
9 A. No.  
10 Q. Let's go back to the '114 patent again, if we  
11 could. I want to go back to that list on line 55, if we  
12 could, where it says the coal comprises added Br2, HBr  
13 and Br-.  
14 A. Okay.  
15 Q. Your testimony is that in the accused power  
16 plants, the coal comprises added Br2; is that right?  
17 MR. NEMUNAITIS: Objection, mis --  
18 A. Define coal.  
19 MR. NEMUNAITIS: Objection,  
20 mischaracterizes testimony.  
21 BY DR. GLANDORF:  
22 Q. Let me ask -- let me -- thank you. Let me fix  
23 that.  
24 Your testimony is that the refined coal  
25 used at the accused power plants comprises added Br2; is

Page 236

1 that right?  
2 MR. NEMUNAITIS: Objection,  
3 mischaracterizes testimony.  
4 A. Correct.  
5 BY DR. GLANDORF:  
6 Q. And that is because the coal comprises added  
7 CaBr2; is that right?  
8 A. Well, the -- during refined coal process,  
9 calcium bromide is added to the coal, so that's where the  
10 Br2 comes in. It's a bromide compound.  
11 Q. The formula for calcium bromide is CaBr2; is  
12 that correct?  
13 A. Correct.  
14 Q. And CaBr2 comprises Br2; is that right?  
15 A. It's comprising Br2, yes.  
16 Q. What does "comprising" mean in the patent  
17 context?  
18 A. That means it can include --  
19 Q. And so --  
20 A. -- as opposed to consisting of, which is all of  
21 the contents of the substance.  
22 Q. And this one is comprises, not consisting?  
23 A. Right.  
24 Q. Your testimony, then, is that CaBr2 comprises  
25 Br2?

11 (Pages 233 - 236)

Page 237

1 A. Yes.  
2 Q. Because there's the Br and there's the 2, the  
3 two Brs that are part of the CaBr2 formula?  
4 A. Correct.  
5 Q. And the CaBr2 -- sorry.  
6 So the CaBr2 qualifies as Br2 listed here  
7 in claim 1?  
8 A. Well, as long as it comprises Br2.  
9 Q. And does CaBr2 comprise HBr?  
10 A. No.  
11 Q. Docs CaBr2 comprise Br-?  
12 MR. NEMUNAITIS: Objection -- well, I  
13 guess you can answer.  
14 Are you asking about what's in his report?  
15 BY DR. GLANDORF:  
16 Q. Does CaBr2 comprise HBr?  
17 A. No.  
18 Q. Does CaBr2 comprise Br-?  
19 A. No.  
20 Q. Okay. Let's go to the Provisional Application  
21 and mark it as a new exhibit.  
22 So we're going to make this Exhibit 15.  
23 (Exhibit No. 15 marked.)  
24 A. Okay.  
25 Q. Have you seen Exhibit 15 previously?

Page 238

1 A. Yes.  
2 Q. What is Exhibit 15?  
3 A. It's a Provisional Application.  
4 Q. And let's go now -- and again, you may have to  
5 use a bookmark here, but we're going to go to the '114  
6 patent.  
7 A. Yeah, we were on that. Yeah. Okay.  
8 Q. We're actually going to go to the front of the  
9 patent.  
10 A. Oh.  
11 Q. Not to the claims.  
12 A. Okay.  
13 Q. Let's go to column 1, which is -- after the  
14 drawings is when the text starts, so you have to kind of  
15 page through the drawings. It's about halfway through  
16 the document.  
17 Let me know when you've found column 1.  
18 A. Okay.  
19 Q. Do you see in column 1, the first kind of full  
20 paragraph, there is a long list of patent applications?  
21 A. Yes.  
22 Q. I'll draw your attention to the very last one  
23 cited, the last -- you know, starting kind of line 20  
24 where it says "And."  
25 A. Yes.

Page 239

1 Q. It says there that "And 60/605,640 are hereby  
2 incorporated herein by reference to the extent  
3 appropriate."  
4 Do you see that?  
5 A. Yes.  
6 Q. And I read that sentence in the middle, but  
7 that's indicating that there's a few different patent  
8 application numbers that are incorporated herein by  
9 reference to the extent appropriate, correct?  
10 A. I think so.  
11 Q. And the last one in the list is the number I  
12 read, 60/605,640.  
13 A. Yes, that's the Provisional Application.  
14 Q. That last number listed there is a reference to  
15 the Provisional Application that is now Exhibit 15; is  
16 that correct?  
17 A. Correct.  
18 Q. Have you reviewed this Provisional Application?  
19 A. Yes.  
20 Q. And if you would look in it and refer to figure  
21 2.  
22 A. Okay.  
23 Q. Do you recall looking at this figure?  
24 A. Yes.  
25 Q. Did you -- do you have an opinion on whether or

Page 240

1 not this figure is important in this litigation?  
2 A. Yeah, I think it is.  
3 Q. Why so?  
4 A. It shows where the additive is injected into  
5 the process.  
6 Q. Did you review the third expert report of Dr.  
7 Niksa?  
8 A. Yeah.  
9 Q. You read it --  
10 A. Yes.  
11 Q. -- in detail?  
12 A. Yes.  
13 Q. Is figure 2 essential material for the patents  
14 at issue in this case?  
15 A. Well, I think so.  
16 Q. And to the extent there are any descriptions of  
17 this figure in this provisional are -- those descriptions  
18 would also be essential material for the patents in this  
19 case?  
20 A. I'm sorry. Can you ask that again. It was  
21 kind of --  
22 Q. It was a muddled --  
23 A. -- confused.  
24 Q. -- question, yes.  
25 You indicated that figure 2 is essential

12 (Pages 237 - 240)

Page 241

1 material for the patents in this case.  
2        Would that also be true for any text  
3 descriptions of that figure in the provisional.  
4    A. Text descriptions?  
5    Q. Yes, if there's any descrip -- there are some  
6 descriptions -- I'll represent to you there are some  
7 descriptions of the figure in the provisional.  
8        Would those also be essential material?  
9    A. Yes.  
10   Q. Now, going back to the '114 paragraph where it  
11 has the language about "incorporation by reference."  
12   A. Yes.  
13   Q. That incorporation by reference statement  
14 doesn't direct you to any particular page of the  
15 prescription provisional, correct?  
16   A. Correct.  
17   Q. It doesn't direct you to any particular figure  
18 or paragraph in the provisional?  
19   A. No. It just references the whole application.  
20   Q. And that statement about "incorporation by  
21 reference" doesn't indicate why any material would be  
22 essential, correct?  
23   A. Why -- why should it?  
24   Q. It doesn't say, for example, that the person  
25 reading it should refer to that Provisional Application

Page 242

1 for a description of how the bromine is added?  
2    A. Well, it refers to the whole application --  
3    Q. It's just --  
4    A. -- by reference.  
5    Q. It's just a general reference to the entire  
6 Provisional Application?  
7    A. Yeah. And it would be assumed at the -- if a  
8 person wants to check the reference, that they would read  
9 the whole document.  
10   Q. A person would have to have access to the  
11 reference, though, correct?  
12   A. Well, yeah, and that's readily available.  
13   Q. Do you have an understanding of when  
14 provisional applications are published?  
15   A. I don't know how long after they're submitted  
16 they're published. I can't remember. I used to know.  
17   Q. Are provisional applications published in the  
18 United States?  
19   A. Yes, they are.  
20   Q. Always?  
21   A. I think so. I'm not a patent attorney.  
22   Q. Okay. Let me pause a little bit and ask you a  
23 little bit about your experience with patent litigation.  
24        How many -- we talked about this a little  
25 bit yesterday, but you've have done a number of patent

Page 243

1 litigation cases; is that correct?  
2    A. Quite a few, yes.  
3    Q. Do you consider yourself to have expertise in  
4 patent law?  
5    A. No.  
6    Q. You're not a patent litigation expert?  
7    A. I'm not a lawyer.  
8    Q. You're not --  
9    A. I'm an engineer.  
10   Q. Have you taken any legal courses?  
11   A. No.  
12   Q. No legal seminars?  
13   A. I attended some seminars.  
14   Q. What seminars?  
15   A. I can't remember.  
16   Q. Okay. When would that have been?  
17   A. At least 10 years ago --  
18   Q. Okay.  
19   A. -- maybe more.  
20   Q. Do you recall where those seminars were held?  
21   A. I think Chicago.  
22   Q. Okay. And what was the subject of those  
23 seminars?  
24   A. General, like, patents and patent prosecution  
25 and protecting intellectual property.

Page 244

1    Q. You're not here today to offer opinions on what  
2 the law should be?  
3    A. Oh, no.  
4    Q. You're not here today to offer opinions on the  
5 legal standards that should be applied?  
6    A. Oh, no. Well, I -- as far as my reports are  
7 concerned, I talk about the legal standards, but I am not  
8 a lawyer.  
9    Q. And so the legal standards that you apply in  
10 your report, what was your basis for applying those  
11 standards?  
12   A. Well, my discussions with the attorney that  
13 retained me.  
14   Q. Okay. And again, I don't want to get into any  
15 details of those discussions.  
16   A. Okay.  
17   Q. Is it fair to say that to the extent you offer  
18 any opinions on what the appropriate legal standard would  
19 be, that would be something that you would have learned  
20 from counsel?  
21   A. Right.  
22   Q. Now, you understand that in this case there is  
23 a dispute as to whether or not the patents at issue can  
24 claim priority back to the Provisional Application?  
25   A. Yes.

13 (Pages 241 - 244)

Page 245

1 Q. And is it your opinion that the patents at  
2 issue can claim priority back to the Provisional  
3 Application?  
4 A. Oh, yes, that's what they do.  
5 Q. And again, focusing on the legal standard,  
6 whose burden is it to show that the patents can claim  
7 priority back to the Provisional Application?  
8 A. Well, I think it's a validity issue, so that  
9 would be the defendants.  
10 Q. And do you know what their burden would be?  
11 A. I -- you know, I'm not a lawyer. I'd have to  
12 look it up. I think I mentioned it in one of my reports.  
13 "The defendants have the burden of proof  
14 to invalidate a patent. Invalidity must be proven by  
15 clear and convincing evidence."  
16 Q. What is your understanding of what that phrase  
17 means "clear and convincing evidence"?  
18 A. Well, it has to be clearly stated that it's  
19 invalid and it has to be convincing.  
20 Q. Going back to the question of the priority  
21 dispute, do you understand there to be any burden on the  
22 patent holder?  
23 A. Well, the only burden is -- in my  
24 understanding, the only burden of a patent holder, the  
25 plaintiffs in this case, would be to show that the

Page 246

1 products or methods or whatever is disclosed in the  
2 patents-in-suit are infringed by the defendants.  
3 Q. That's true.  
4 But is there also any requirement of the  
5 patent holder with regard to the question of whether it's  
6 proper to claim priority back to the Provisional  
7 Application?  
8 A. I don't know.  
9 Q. That's not something you considered in writing  
10 your opinion?  
11 A. Well, I might have. I can't remember. This  
12 report's pretty voluminous. I'd have to look.  
13 I know that all the patents-in-suit claim  
14 priority to the provisional patent.  
15 Q. Do you disagree with Dr. Niksa's opinion that  
16 the priority claim to the Provisional Application is  
17 improper?  
18 A. No.  
19 Q. And who asked you to consider the pri -- well,  
20 let me -- let me scratch that.  
21 DR. GLANDORF: Let's look at Sjostrom.  
22 (Exhibit No. 16 marked.)  
23 BY DR. GLANDORF:  
24 Q. We're going to introduce a new exhibit at this  
25 point. It's going to be Exhibit 16. It's not one that I

Page 247

1 believe you have in your binder, so let me know when it's  
2 up on the screen.  
3 A. Full Scale Evaluations of Mercury Control.  
4 It looks like a PowerPoint slide.  
5 Q. Yes. Do you recognize this exhibit?  
6 A. I think I looked at it, yes.  
7 Q. And there's an author's name on the first page.  
8 Do you see that?  
9 A. Yes.  
10 Q. And I believe it's pronounced Sjostrom.  
11 Is that the name you see there?  
12 A. Whatever S-J-O-S-T-R-O-M is pronounced as.  
13 Q. Yes.  
14 And are you familiar with Sharon Sjostrom?  
15 A. No.  
16 Q. You see there's a reference here -- in the  
17 upper left, there's a reference to ADA-ES.  
18 Are you familiar with that company?  
19 A. No.  
20 Q. And then in the lower right-hand corner,  
21 there's a reference to EPRI.  
22 Do you see that?  
23 A. EPRI?  
24 Q. Yes.  
25 A. No, I don't see that.

Page 248

1 Q. You might have to kind of scroll down so you  
2 can see the whole slide.  
3 A. Oh, yeah, yeah. It's at the bottom right.  
4 EPRI, yeah.  
5 Q. Are you familiar with EPRI?  
6 A. Yes.  
7 Q. What EPRI do?  
8 A. Electronic Power Research Institute.  
9 I used to know when I worked for the  
10 utility, but I can't remember. I think we -- we had to  
11 do some testing based on EPRI's recommendations. I can't  
12 remember exactly.  
13 Q. Did any of those testings have to do with  
14 mercury control?  
15 A. No.  
16 Q. When you were at the power plants -- I'm sorry,  
17 scratch that.  
18 When you were with Com Ed, mercury control  
19 was not something that was being studied in the industry,  
20 correct?  
21 A. It wasn't required at our plant, I know that,  
22 or the plants that I worked at.  
23 Q. Do you recall when the government first -- the  
24 U.S. Government started implementing its first mercury  
25 control regulations?

14 (Pages 245 - 248)

Page 249

1 A. I really can't remember offhand. I'd have to  
2 look for it.  
3 Q. Do you know if it was before or after you were  
4 at the plant?  
5 A. It was after.  
6 Q. Let's go -- if you can scroll down in the  
7 document here, to slide -- do these have page numbers --  
8 they do -- slide page 4. If you look on the footer,  
9 there is an indication of the page number.  
10 A. Yep, I see it.  
11 Q. And you see this is a schematic of a power  
12 plant; is that correct?  
13 A. That's what it looks like.  
14 Q. So I just wanted to walk through this a little  
15 bit if we could.  
16 There is a yellow widget that says ESP or  
17 FF.  
18 Do you see that?  
19 A. Yes.  
20 Q. What is an ESP?  
21 A. Electrostatic precipitator.  
22 Q. And what is an FF?  
23 A. I think that's a fabric filter.  
24 Q. What is -- what is the role of those -- of  
25 those things?

Page 250

1 A. Particulate removal of the flue gas.  
2 Q. And then downstream of those, there is a  
3 representation of a smokestack, correct?  
4 A. Correct.  
5 Q. And it says HGCEM.  
6 Do you see that?  
7 A. Yes.  
8 Q. What is -- what is that a reference to?  
9 A. Continuous emission monitor for mercury.  
10 Q. And so moving now upstream, there is a sorbent  
11 injection being shown, correct?  
12 A. Correct.  
13 Q. Would you understand that sorbent injection to  
14 likely be activated carbon?  
15 A. Yes.  
16 Q. And then upstream of that, we get up to the  
17 furnace eventually.  
18 Do you see that?  
19 A. Yes.  
20 Q. Is there indication here of the fireball?  
21 A. Yes.  
22 Q. Where is that?  
23 A. It's in the lower part of the furnace.  
24 Q. It's indicated here by kind of a --  
25 A. Like a yellow-ish cloud.

Page 251

1 Q. Right, right.  
2 So also on this diagram are a couple of  
3 arrows indicating the addition of CL, BR, F, or I.  
4 Do you see that?  
5 A. Yes.  
6 Q. Do you know CL, BR, and F, and I to be  
7 halogens?  
8 A. I think so, yes.  
9 Q. And so according to this drawing, where are the  
10 various places that the halogens might be introduced?  
11 A. It looks like you can introduce them before the  
12 combustion process, after the combustion process in the  
13 furnace, or in the ductwork of the flue gas going to the  
14 ESP or FF.  
15 Q. And that last arrow would also include  
16 potentially adding the halogens directly to the sorbent;  
17 do you agree?  
18 A. I don't know.  
19 Q. And the first arrow would include adding the  
20 halogens to the coal, correct?  
21 A. I think so, yes.  
22 It doesn't show a pulverizer, but, you  
23 know, it would be coal entering the furnace for  
24 combustion.  
25 Q. And the pulverizer would be just kind of to the

Page 252

1 left of the drawing, correct?  
2 A. The what?  
3 Q. To the left of the drawing.  
4 A. What is to the left?  
5 Q. The pulverizer would be to the left of the  
6 drawing?  
7 A. Yes.  
8 Q. Where that first arrow is being shown?  
9 A. Yes.  
10 Q. You can set that to the side.  
11 DR. GLANDORF: You know, I think I would  
12 actually need a break right now. Would that be okay?  
13 THE WITNESS: Fine with me.  
14 THE VIDEOGRAPHER: We are going off the  
15 record. The time now is 10:24.  
16 (Recess 10:24-10:37.)  
17 THE VIDEOGRAPHER: We are back and the  
18 record. The time now is 10:37.  
19 BY DR. GLANDORF:  
20 Q. Welcome back, Mr. O'Keefe.  
21 A. Thank you.  
22 Q. Did you speak with your attorney about the  
23 substance of your testimony?  
24 A. No.  
25 Q. We're going to look back at the '114 claim one

15 (Pages 249 - 252)

Page 253

1 more time, if we could.  
2 A. Okay.  
3 Q. And if you go to claim 1, about line 55.  
4 A. All right.  
5 Q. And you see it refers there to Br2?  
6 A. Yes.  
7 Q. What is your understanding of what Br2 means?  
8 A. Bromide.  
9 Q. Are you familiar with the substance known as  
10 molecular bromine?  
11 A. Yes. It's in the periodic table under  
12 halogens.  
13 Q. The element bromine is in the periodic table --  
14 A. Yeah.  
15 Q. -- correct?  
16 A. Right.  
17 Q. You understa -- are you familiar with the  
18 substance known as molecular bromine?  
19 A. No. But I know what bromide is, Br2.  
20 Q. Br2 -- yes, that's -- you're familiar with the  
21 molecule Br2?  
22 A. Yes.  
23 Q. Do you know whether it is a solid, liquid, or  
24 gas at room temperature?  
25 A. I think it's a liquid.

Page 254

1 Q. Either, it can be.  
2 A. Okay. Well, that's good.  
3 Q. We have also a document showing it's an open  
4 point at blowing point, and I'll spare you going through  
5 that, but...  
6 A. Oh, good. Thank you.  
7 Q. That is -- do you -- do you call Br2 bromide or  
8 bromine?  
9 A. Bromide.  
10 Q. I'm sorry. With a D or an N?  
11 A. I-D-E, bromide.  
12 Q. Br2 is to you bromide?  
13 A. Yes.  
14 Q. Okay. And again, when we are speaking of Br2,  
15 do you understand that to be a stand-alone molecule of  
16 two bromines?  
17 A. I don't know.  
18 Q. Okay. Is the indication of Br2 there a  
19 reference to molecular Br2?  
20 A. It's referenced as Br2.  
21 Q. What do you mean by that?  
22 A. Well, I guess that would be a molecule of  
23 brom -- bromine.  
24 Q. And, again --  
25 A. It would be two bromine atoms.

Page 255

1 Q. The Br2 that's referenced there, does that have  
2 a charge?  
3 A. I don't know.  
4 Q. Could it have a charge?  
5 A. I don't know.  
6 Q. Is the Br2 that's indicated there a reference  
7 to the molecule you are calling "bromide"?  
8 A. Yes.  
9 Q. All right. Let's open up your first report, if  
10 we could.  
11 A. Okay.  
12 Q. I apologize, your second report, if we could.  
13 I think this is going to be Exhibit 2; is  
14 that right?  
15 A. The reply report or -- wait.  
16 Q. Yes, the repl -- or rebuttal.  
17 A. The rebuttal. That's where I address validity.  
18 Q. Yes, that's right.  
19 A. Yes.  
20 Q. And in this report, you review some laboratory  
21 work done by ME2C; is that correct?  
22 A. I believe so, yes.  
23 Q. Could you find that section of your report for  
24 me, if you could?  
25 A. What in particular are you looking for?

Page 256

1 Q. Well, I just want to identify for the record  
2 what -- what section that is.  
3 A. Well, I interpret that as conception reduction  
4 to practice. Is that what you're talking about?  
5 Q. Yes, that's right. Do you recall that that --  
6 A. So that would be on page 53.  
7 Q. Okay. Did you draft this section of your  
8 report?  
9 A. Yes.  
10 Q. And this refers to a lot of work done at -- at  
11 the -- by -- sorry. Let me rephrase that.  
12 This refers to a lot of work done at the  
13 EERC, correct?  
14 A. Correct.  
15 Q. Did you review the laboratory notebooks that  
16 are referenced here?  
17 A. Yes, I think I did.  
18 Q. And there are also some -- if we look at, for  
19 example, paragraph 121, there are some -- there's a slide  
20 shown there and some slides that follow it, correct?  
21 A. Correct.  
22 Q. Did you review those slides yourself?  
23 A. Yes.  
24 Q. The entirety of those presentations?  
25 A. Yes.

16 (Pages 253 - 256)

Page 257

1 Q. And then you summarized those presentations in  
 2 the text and prose here, correct?  
 3 A. Yes.  
 4 Q. These are your words?  
 5 A. Yes.  
 6 Q. Okay. Now, in doing so, you didn't connect any  
 7 of the work with specific claims, correct?  
 8 A. What do you mean by that?  
 9 Q. You didn't provide a table, for example, that  
 10 connected certain experiments on one side with the  
 11 asserted claims on the other side?  
 12 A. No.  
 13 Q. You didn't provide a map between the -- the  
 14 work that was done in these labs and the specific claims?  
 15 A. I don't think so, no.  
 16 MR. NEMUNAITIS: Objection,  
 17 mischaracterizes the report and the appendix to the  
 18 report.  
 19 BY DR. GLANDORF:  
 20 Q. And one moment. I'm going to introduce a new  
 21 exhibit here.  
 22 Do you discuss certain experiments done at  
 23 EERC by the inventors where they added bromine to coal?  
 24 A. I'd have to check. I think I did.  
 25 It talks about reduction to practice,

Page 258

1 so...  
 2 Q. Yeah, do you see any reference there to adding  
 3 bromine to coal?  
 4 A. Well, there's a lot of pages to go through. If  
 5 you don't mind, I'd like to go look at them.  
 6 Q. Because you don't recall if there was --  
 7 A. Well, I didn't memorize my reports.  
 8 Q. Fair enough. You know, okay. Let's pause  
 9 there. I'll ask you some questions, and we'll see if  
 10 we -- we need to go through it or not.  
 11 MR. GLANDORF: You know, I just sent you a  
 12 document. It will take while to go through.  
 13 One moment.  
 14 BY DR. GLANDORF:  
 15 Q. Let's look, if we could, at paragraph 143.  
 16 A. Okay. That's right where I was looking.  
 17 Q. Okay. Good.  
 18 And it says here that "they" - meaning the  
 19 inventors - "confirmed that the use of bromine additive  
 20 on the coal combined with activated carbon injection  
 21 downstream from the combustion chamber provided  
 22 significantly improved mercury capture as compared to  
 23 methods employing chlorine additive or activated carbon  
 24 without bromine addition."  
 25 A. Right.

Page 259

1 Q. Did I read that correct?  
 2 A. Correct.  
 3 Q. So is it your assertion here that the inventors  
 4 in this September 2003 time framed -- frame were looking  
 5 at the use of a bromine additive on coal?  
 6 A. Yes.  
 7 Q. Now, we looked at all the examples yesterday in  
 8 the patent, if you recall; and each time I asked you if  
 9 the example disclosed the addition of bromine onto coal.  
 10 Do you recall me asking you those  
 11 questions?  
 12 A. We're talking the '147 patent?  
 13 Q. That's correct. Although, again, I will  
 14 represent to you that the examples are the same in the  
 15 each of the patents.  
 16 A. Okay. We were talking about making brominated  
 17 activated carbon --  
 18 Q. That's correct.  
 19 A. -- and injecting that into the flue gas.  
 20 Q. That's right.  
 21 A. Okay.  
 22 Q. We looked at all those example, and one of the  
 23 questions I asked you each time was "Does this example  
 24 disclose the addition of bromine to the co -- to coal?"  
 25 A. Not in the '147 patent.

Page 260

1 Q. None of the examples in the '147 patent  
 2 specification disclose the addition of bromine to coal,  
 3 correct?  
 4 A. Not that I could see.  
 5 Q. My question for you is if in September 2003 the  
 6 inventors had confirmed the use of bromine additive to  
 7 coal, as you say here, why did they not include a  
 8 description of a single example in the specification  
 9 describing that?  
 10 MR. NEMUNAITIS: Objection, outside the  
 11 scope.  
 12 A. I don't understand your question.  
 13 Can you rephrase that?  
 14 BY DR. GLANDORF:  
 15 Q. Sure. You confirmed that none of the examples  
 16 in the '147 patent disclose the addition of bromine to  
 17 coal?  
 18 A. Right, and I said that.  
 19 Q. And you offer the opinion here in '143 that  
 20 September 2003, the inventors had confirmed the addition  
 21 of bromine to coal, correct?  
 22 A. Yes, when they were reducing the invention to  
 23 practice.  
 24 Q. Why then did the inventors not include a single  
 25 example among the 12 examples of adding bromine to coal?

17 (Pages 257 - 260)

Page 261

1 MR. NEMUNAITIS: Same objection.  
2 A. Example of adding the bromine to colon in the  
3 '147 patent specification?  
4 BY DR. GLANDORF:  
5 Q. Yes.  
6 A. I don't know.  
7 Q. If their invention was related to the addition  
8 of bromine to coal, don't you think they would have  
9 included an example saying that?  
10 A. I don't know.  
11 Is it really necessary as long as it's  
12 claimed?  
13 Q. Well, that's certainly a patent law question.  
14 Is it your understanding that the  
15 specification should -- should provide written support  
16 for the claims?  
17 A. I would assume so, but I'm not a patent  
18 attorney.  
19 Q. Do you recall identifying anywhere else, other  
20 than the examples in the patent specification, that  
21 discusses the addition of bromine to coal?  
22 MR. NEMUNAITIS: Objection.  
23 Are you asking him to look through his  
24 report?  
25 A. Did -- I'm sorry. Can you ask that again.

Page 262

1 BY DR. GLANDORF:  
2 Q. Sure. Do you recall identifying anywhere  
3 else -- let me -- let me rephrase.  
4 Do you recall identifying anywhere outside  
5 of the examples in the patent specification that discuss  
6 the addition of bromine to coal?  
7 A. Well, right here.  
8 Q. That's in the laboratory notebook?  
9 A. Right.  
10 Q. Okay. Let me -- let me -- let me rephrase my  
11 question again. I'm not asking good questions. I'll try  
12 again.  
13 Do you recall identifying anything in the  
14 specification of the asserted patents that discusses the  
15 addition of bromine to coal?  
16 A. Any -- I'm sorry. I'm not following.  
17 Q. Okay. Do you recall identifying anything in  
18 the specification of the '147 patent that discloses the  
19 addition of bromine to coal?  
20 A. No.  
21 Q. Do you recall identifying anything in the  
22 specification any of the other asserted patents that  
23 discloses the addition of bromine to coal?  
24 A. Yes.  
25 Q. Which patent is that?

Page 263

1 A. I can't remember offhand.  
2 Q. Okay. In this -- the other specification, how  
3 did the -- how did the authors identify the addition of  
4 bromine to coal?  
5 A. I'm sorry?  
6 Q. You just answered my question that you  
7 recall -- that you recall something from the  
8 specification of the other asserted patents that  
9 discloses the addition of bromine to coal?  
10 A. Yes.  
11 Q. Are you referring to the claims of those  
12 patents?  
13 A. I think it's in the claims and also in the  
14 specification, but I'm not sure. I'd have to look at the  
15 patents.  
16 Q. Do you recall it being an example in the  
17 specification?  
18 A. I don't recall.  
19 Q. Let's go ahead and introduce the next exhibit  
20 here, which I guess is Exhibit 17. Again, it's not one  
21 that I believe you have a paper copy of, but we have  
22 it -- we have it here.  
23 (Exhibit No. 17 marked.)  
24 BY DR. GLANDORF:  
25 Q. Go ahead and when it's up on the screen,

Page 264

1 page -- page through that.  
2 A. Okay. I just lost it. Okay, I got it. Okay.  
3 Q. It's long.  
4 A. Declaration of John Pavlish?  
5 Q. Yes.  
6 A. Yes.  
7 Q. Do you recognize this exhibit?  
8 A. Oh, yeah.  
9 Q. What is this document?  
10 A. It's the Declaration of Inventor John Pavlish.  
11 Q. Did you rely on this document?  
12 A. Yes.  
13 Q. Okay. And let's look, for example, at  
14 paragraph 16 of this.  
15 A. Okay.  
16 Q. And if we -- if you would go ahead and read  
17 that first sentence of paragraph 16 into the record.  
18 A. Okay. "By 2001, we had decided to focus on  
19 testing and evaluating various sorbents for use in  
20 mercury capture. However, PTC testing was relatively  
21 expensive, and thus we needed to obtain funding to  
22 perform in-depth testing. In December 2001, we held a  
23 project meeting at the EERC to discuss overall project  
24 strategy and funding. The overall project goals were  
25 memorialized in the slides below from that meeting."

18 (Pages 261 - 264)

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Page 265

1 Q. And then it refers the first slide shown here  
 2 is a slide titled "Background," correct? And it says,  
 3 "Mercury is an immediate issue."  
 4 Do you see that?  
 5 A. Yes.  
 6 Q. Just to point out here, it says here in  
 7 December 2000, EPA decides regulation will be required.  
 8 Do you see that?  
 9 A. Yes.  
 10 Q. Is that consistent with your understanding that  
 11 in December of 2000 is when EPA decided that there will  
 12 be a regulation?  
 13 A. Yes.  
 14 Q. And under that it says the regulations will be  
 15 proposed by December 2003.  
 16 Do you see that?  
 17 A. Yes.  
 18 Q. And then under that, it says there will be a  
 19 promulgation of regulations by December 2004.  
 20 A. Yes.  
 21 Q. Now, by December 2000, you were no longer  
 22 working at Com Ed, correct?  
 23 A. Correct.  
 24 Q. You were no longer working with -- for a power  
 25 plant or any power plants?

Page 266

1 A. Later on I was training at power plants.  
 2 Q. Yes, and we discussed that yesterday.  
 3 A. Yes.  
 4 Q. So you did some training seminars in --  
 5 A. Around 2010.  
 6 Q. Right.  
 7 Aside from those training seminars, you  
 8 were not involved in power plant work as -- after  
 9 December 2000, correct?  
 10 A. Right.  
 11 Q. Let's go now to your expert report, the second  
 12 one, which I think we had open -- maybe you still have it  
 13 open.  
 14 A. Yeah. The rebuttal report?  
 15 Q. Yes. And let's go to paragraph 121.  
 16 A. Okay.  
 17 Q. And again, if you wouldn't mind -- and I think  
 18 for the court reporter, it's always good to read slowly,  
 19 but if you could read paragraph 121 into the record.  
 20 A. By 20 -- "By 2001, the inventors had decided to  
 21 focus on testing and evaluation of various sorbents for  
 22 use in mercury capture. However, PTC testing was  
 23 relatively expensive, and thus they needed to obtain  
 24 funding to perform in-depth testing. In December 2001,  
 25 they held a project meeting at the EERC to discuss

Page 267

1 overall project strategy and funding. The overall  
 2 project goals were memorialized in the slides below from  
 3 that meeting."  
 4 Q. And again, then there is a reference to that  
 5 same slide we saw before that's entitled "Background,"  
 6 and it talks about mer -- that mercury is an immediate  
 7 issue.  
 8 Do you see that?  
 9 A. Right. Yes.  
 10 Q. These paragraphs are almost identical, correct?  
 11 A. They look like it.  
 12 Q. The only difference is that when Pavlish is  
 13 speaking, he's talking in the first person. He's using  
 14 "we," correct?  
 15 A. Yes.  
 16 Q. And in your report, it instead says "the  
 17 inventors," correct?  
 18 A. Yes.  
 19 Q. But otherwise, it's the same?  
 20 A. It's the same.  
 21 Q. So your opinion here is based on John Pavlish's  
 22 opinion of the work; is that fair?  
 23 A. Yes.  
 24 Q. Okay. And it's fair to assume that this IPR  
 25 declaration was the source of these paragraphs?

Page 268

1 A. Yes.  
 2 Q. Okay. And so we won't read it into the record,  
 3 but let's go to the next paragraph in your report, which  
 4 is 122.  
 5 And in this paragraph, you say, for  
 6 example, that they had already determined to focus on the  
 7 sorbent-based technology, and in particular carbon-based  
 8 sorbents.  
 9 Do you see that?  
 10 A. Yes.  
 11 Q. And the reference to "they" is a reference to  
 12 the inventors; is that right?  
 13 A. I would assume so, yes.  
 14 Q. Now let's go to that next paragraph in the  
 15 exhibit, which is paragraph 17 of Exhibit 17.  
 16 Again, we see that same sentence, but it  
 17 just has "we" instead of "they," correct?  
 18 A. It looks like it, yes.  
 19 Q. And so here was John Pavlish saying, "We had  
 20 already determined to focus on sorbent-based technology,  
 21 and in particular carbon-based sorbents," correct?  
 22 A. Yes.  
 23 Q. So as an example here, when you are offering  
 24 the opinion that they decided to focus on a particular  
 25 technology, you were adopting the opinion of the inventor

19 (Pages 265 - 268)

Page 269

1 as what -- to what he decided -- or what they decided to  
2 focus on --  
3 A. Yes.  
4 Q. -- is that fair?  
5 A. Yes.  
6 Q. That's his interpretation -- it's John  
7 Pavlish's interpretation of the experiments that they had  
8 a focus on sorbent-based technology, correct?  
9 A. "They" being the inventors.  
10 Q. Yes. And so you're adopting that opinion in  
11 your report; is that right?  
12 A. Yes.  
13 Q. And that's true for a large portion of your  
14 opinion on this conception in reduction to practice?  
15 A. Yes.  
16 Q. Have you been paid for all of your time working  
17 on this case yet?  
18 A. No.  
19 Q. There's still some outstanding invoices?  
20 A. Yes.  
21 Q. Do you know the total you've collected to date  
22 so far?  
23 A. No.  
24 Q. Do you know the total on the outstanding  
25 invoices?

Page 270

1 A. No.  
2 Q. Did you read the P tabs, preliminary  
3 determination of a reasonable likelihood of invalidity  
4 regarding the '114 and '147 patents?  
5 A. You mean in Niksa's report?  
6 Q. Well, did you read the -- Niksa does refer it;  
7 that is true. Let me rephrase it, though.  
8 Did you read the preliminary ruling in the  
9 IPRs concerning the '114 and '147 patents?  
10 A. I don't remember.  
11 Q. How much time did you spend this week preparing  
12 for this deposition?  
13 A. About 10 hours.  
14 Q. Okay. And you had no involvement in those  
15 previous IPRs; is that right?  
16 A. No.  
17 Q. I'm going to switch gears a little bit and talk  
18 to you about your opinions in your first report regarding  
19 infringement, if we could.  
20 A. Okay.  
21 Q. Is it your opinion that at power plants that  
22 have activated carbon injection systems, that such plants  
23 use activated carbon continuously?  
24 A. No.  
25 Q. It's your opinion that a power plant with an

Page 271

1 activated carbon system may use it intermittently?  
2 A. Yes.  
3 THE WITNESS: Oh, I've got a cramp in my  
4 leg. I'm sorry. Can we go off?  
5 DR. GLANDORF: Take a break?  
6 THE WITNESS: Yeah, please.  
7 THE VIDEOGRAPHER: We are going off the  
8 record. The time now is 11:05.  
9 (Recess 11:05-11:19.)  
10 THE VIDEOGRAPHER: We are back on the  
11 record. This is the start to media number 3. The time  
12 is 11:19.  
13 BY DR. GLANDORF:  
14 Q. Welcome back, Mr. O'Keefe.  
15 A. Thank you.  
16 Q. Is your -- is your leg okay?  
17 A. It's better.  
18 Q. Okay.  
19 A. You know, it was a pretty bad charley horse.  
20 Q. Okay.  
21 A. I apologize for that.  
22 Q. No, we've been sitting here a while. That's no  
23 problem.  
24 Did you discuss the substance of your  
25 testimony with counsel during the break?

Page 272

1 A. No.  
2 Q. Okay. We're going to go back to the '114  
3 patent one more time.  
4 A. Okay.  
5 Q. And do you see in line 33 of column -- I'm  
6 sorry, in column 33 at line 55, do you see, again, the  
7 reference to Br<sub>2</sub>, HBr, and Br-?  
8 A. Yes.  
9 Q. Just so I understand, is it your opinion that  
10 CaBr<sub>2</sub> -- sorry, let me rephrase this.  
11 Is it your opinion that adding CaBr<sub>2</sub> to  
12 coal results in the addition of molecular bromine, Br<sub>2</sub>?  
13 A. Yes. It says -- and we talked about this  
14 before. The key word is "comprises." And CaBr<sub>2</sub>  
15 comprises Br<sub>2</sub>. It has Br<sub>2</sub> in it.  
16 Q. Calcium bromide comprises molecular bromine,  
17 Br<sub>2</sub>?  
18 A. Br<sub>2</sub>, yes.  
19 Q. Okay. Okay. Thank you.  
20 We're going to go -- right before the  
21 break, though, we had switched to your first report, and  
22 we were talking about the use of activated carbon at  
23 power plants.  
24 Do you recall that?  
25 A. Yes.

20 (Pages 269 - 272)

Page 273

1 Q. So we're going to -- I'm going to ask you more  
2 questions about that.  
3 A. Do I go back to my --  
4 Q. If you would like, sure. We're going to be  
5 asking about your infringement opinion, which I believe  
6 is in your first report.  
7 A. So it's in the opening report.  
8 Q. Yes. Then I believe, of course, you address  
9 some of the issues again in your third report, but the  
10 initial opinion is in your first report.  
11 A. Okay.  
12 Q. And you're not offering any opinions for any  
13 power plant as to how much activated carbon they inject  
14 over a given period of time?  
15 A. As long as they're injecting some activated  
16 carbon, they infringe.  
17 Q. Right. So you're not offering an opinion as to  
18 amount of activated carbon that's being injected?  
19 A. Well, I did offer an opinion as to amounts in  
20 one of my reports --  
21 Q. You offered --  
22 A. -- and it was estimated amounts.  
23 Q. Was it an estimate of the amounts, or was it an  
24 estimate of the amount of time that the inject -- the  
25 activated carbon is used?

Page 274

1 A. I think it was an estimate of the time.  
2 Q. Okay. In your experience, how much activated  
3 carbon would a power plant need to inject in order to  
4 meet MATS?  
5 A. I don't know. It depends on the type of coal  
6 burned.  
7 Q. Can you give a range?  
8 A. I don't know.  
9 Q. Now, if we look -- I apologize for making you  
10 flip back and forth, but if you -- let's go back to  
11 the '114 patent, if we could.  
12 A. Okay.  
13 Q. And I'm going to direct you to claim 4.  
14 A. Okay.  
15 Q. Have you read claim 4?  
16 A. Yes.  
17 Q. Did you do an analysis of each power plant to  
18 determine whether or not they were adding the halogen or  
19 halide promoter in a ratio of 1 gram to about 30 grams --  
20 A. No.  
21 Q. Let me just finish.  
22 -- per a 100 gram of the sorbent  
23 material?  
24 A. No.  
25 Q. You didn't do that analysis?

Page 275

1 A. No.  
2 Q. Okay. Let's then go back to your first report.  
3 In your experience, do you know if power  
4 plants intentionally vary the rate at which the activated  
5 carbon is injected?  
6 A. Intentionally vary?  
7 Well, they -- they have no choice. They  
8 have to meet the standard.  
9 Q. And so how often -- in your experience, how  
10 often do power plants vary that additive rate of  
11 active -- of activated carbon?  
12 A. I don't think that they vary it.  
13 Q. Okay. Do you know -- what is the highest rate  
14 of injection of activated carbon that you've -- that  
15 you're aware of?  
16 A. I can't remember.  
17 Q. Can you recall the lowest rate of injection of  
18 activated carbon?  
19 A. No.  
20 Q. You're not offering any opinions on why these  
21 power plants use activated carbon instead of other  
22 mercury control technologies, are you?  
23 A. I think it has to do with economics and also  
24 incentives.  
25 Q. Do you know what other mercury control

Page 276

1 technologies would be used available to these power  
2 plants to use instead of activated carbon?  
3 A. No.  
4 Q. Do you recall in the power plants accused of  
5 infringement in this case whether any of them installed  
6 activated carbon injection systems after the -- after  
7 they started using refined coal?  
8 A. No.  
9 Q. Just to clarify, it's your recollection that  
10 there are no such plants, or you just don't remember one  
11 way or the other?  
12 A. I don't think any plants installed activated  
13 carbon injection systems in the flue gas.  
14 After they started burning refined coal,  
15 there would be no purpose in doing so.  
16 Q. The plants here all had activated carbon  
17 injection systems in place before they started refining  
18 coal?  
19 A. I don't think so.  
20 Q. I just -- maybe we spoke over each other there.  
21 I just wanted to clarify your answer.  
22 You said, "I don't think any plants  
23 installed activated carbon injection systems after they  
24 started burning refined coal," right?  
25 A. Right.

21 (Pages 273 - 276)

Page 277

1 Q. And I was just clarifying that answer.  
 2 These -- the plants accused here had  
 3 activated carbon injection systems in place before they  
 4 started burning refined coal?  
 5 A. Well, in conjunction with burning refined coal.  
 6 And "in conjunction" means "and."  
 7 So --  
 8 Q. But --  
 9 A. -- you'd burn refined coal, and they did  
 10 activate carbon injection.  
 11 Q. But my question is in terms of when the systems  
 12 were involved.  
 13 The activated carbon injection systems  
 14 were already in place before the refined coal started  
 15 being used?  
 16 A. I don't think so. I'm not sure though.  
 17 Q. Okay. You offer some opinions in your report  
 18 on a contributory infringement.  
 19 Do you recall that?  
 20 A. Yes.  
 21 Q. You're accusing the defendants in this case of  
 22 contributory infringement of the asserted claims,  
 23 correct?  
 24 A. Yes.  
 25 Q. And what is your understanding of what

Page 278

1 contributory infringement is?  
 2 A. Well, it's spelled out in my opening report at  
 3 the beginning. I think there's a section on what  
 4 contributory infringement is. Induced infringement, I  
 5 should say.  
 6 Q. Well, we'll talk about each of those things in  
 7 turn.  
 8 A. If you go to page 8, I talk about specifically  
 9 contributory infringement.  
 10 Q. Okay. So what is contributory infringement?  
 11 A. "Infringement must be determined on a  
 12 claim-by-claim basis. A company is liable for  
 13 contributory infringement of a claim if a patent holder  
 14 proves by a preponderance of the evidence, one, the  
 15 company sells, offers to sell, or imports within the  
 16 United States a component of a product, material, or  
 17 apparatus for use in a process during the time the patent  
 18 is in force. And two, the component material or  
 19 apparatus is not a staple or a commodity -- commodity of  
 20 commerce suitable for substantial noninfringement use.  
 21 And three, the component material or apparatus  
 22 constitutes a material part of the invention. And four,  
 23 the company is aware of the patent and knows that the  
 24 component material or apparatus is especially made or  
 25 adapted for use as an infringement of the claim. And

Page 279

1 five, someone uses the component material or apparatus to  
 2 directly infringe a claim."  
 3 Q. Thank you.  
 4 And so, whose burden is it to show that  
 5 contributory infringement is occurring?  
 6 A. The plaintiffs.  
 7 Q. That's the party that you're representing,  
 8 correct?  
 9 A. Right.  
 10 Q. And you refer to a few times in there a com --  
 11 one moment. Let me make sure I have your language  
 12 correct.  
 13 Which paragraph are you reading from, just  
 14 for the record?  
 15 A. It starts in paragraph 20.  
 16 Q. Okay. And the reference here in the first  
 17 point of your five points is to a company selling,  
 18 offering to sell, or importing within the United States a  
 19 component of a product, material, or apparatus.  
 20 Do you see that?  
 21 A. Yes.  
 22 Q. And so, what is the component that you are  
 23 opining is being sold here?  
 24 A. The component -- or the apparatus -- I guess  
 25 the component would be refined coal.

Page 280

1 Q. Okay.  
 2 A. And the apparatus would be the machinery to do  
 3 the refining of the coal.  
 4 Q. Okay. And so like, again, if you look down at  
 5 point three of your list, or point two, again, it refers  
 6 to the component, material, or apparatus?  
 7 A. Well, also --  
 8 Q. One of those -- one of those three things is  
 9 required, correct?  
 10 A. Also a component of the product -- of a product  
 11 would be the same as material too.  
 12 Q. Okay.  
 13 A. So the material would be the refined coal.  
 14 Q. The thing that you are accusing defendants of  
 15 selling for the purposes of contributory infringement are  
 16 refined coal; is that correct?  
 17 A. Correct.  
 18 Q. And what is your definition of refined coal  
 19 that you're using?  
 20 A. Well, the addition of MERSORB to the coal,  
 21 which is a calcium bromide compound.  
 22 Q. So the -- is the product here that you were  
 23 considering for the purposes of contributory infringement  
 24 refined coal made with --  
 25 A. Calcium bromide.

22 (Pages 277 - 280)

Page 281

1 Q. -- the calcium bromide?  
 2 A. Yes.  
 3 Q. Okay. And it's the same product regardless of  
 4 which power plants it's sold to?  
 5 A. I think so, yes.  
 6 Q. And you agree that refined coal made with  
 7 calcium bromide is sold to some plants that don't use  
 8 activated carbon?  
 9 A. No.  
 10 What -- what would be the reason to do  
 11 that?  
 12 Q. Are you aware -- you're not aware of any plants  
 13 that use refined coal without activated carbon?  
 14 A. No.  
 15 Q. It's your opinion that there are no plants that  
 16 use refined coal and do not have systems for injecting  
 17 activated carbon?  
 18 A. No.  
 19 Q. I'm sorry, let's make sure we clarify that  
 20 question.  
 21 Are there any plants that use refined coal  
 22 and do not have systems for injecting activated carbon?  
 23 A. No.  
 24 Q. And I'm not limiting my question to the plants  
 25 accused here.

Page 282

1 I mean are there any plants, whether part  
 2 of this lawsuit or not, that use refined coal and do not  
 3 have systems for injecting activated carbon?  
 4 A. I don't know.  
 5 Q. You're not aware of any plants, again, whether  
 6 accused or not or part of this lawsuit or not, that use  
 7 refined coal and do not have systems for injecting  
 8 activated carbon?  
 9 A. I wasn't asked to check on that.  
 10 Q. You didn't consider whether there were plants  
 11 in the country that used refine coal and do not use  
 12 activated carbon?  
 13 A. Why would they?  
 14 Q. Would that be relevant to your contributory  
 15 infringement analysis?  
 16 A. No.  
 17 Q. If there were plants that used refined coal  
 18 without using activated carbon, that would be a  
 19 noninfringing use, correct?  
 20 A. Correct.  
 21 Q. And if there were a substantial number of  
 22 plants using refined coal without activated carbon, then  
 23 that would be a substantial noninfringing use, correct?  
 24 A. I guess so. Sure.  
 25 Q. But that's -- you didn't consider whether there

Page 283

1 were any such plants?  
 2 A. No.  
 3 Q. Okay. Are there any other properties of the  
 4 refined coal that you consider it -- consider  
 5 necessary -- let me rephrase.  
 6 You indicated that the refined coal that  
 7 you are considering for the contributory infringement  
 8 section of your report is refined coal made with calcium  
 9 bromide; is that right?  
 10 A. Correct.  
 11 Q. Are there any other properties of the refined  
 12 coal that you need to know in order to determine  
 13 whether it's refined coal within the scope of your  
 14 opinion or outside the scope of your opinion?  
 15 A. I don't understand.  
 16 Q. Are there any other properties of the refined  
 17 coal that are necessary to determine whether or not it is  
 18 inside -- let me -- let me rephrase. Yeah, I'll try to  
 19 rephrase for you. I'm sorry.  
 20 Are there any other properties of the  
 21 refined coal that you considered in determining whether  
 22 that refined coal should be part of your contributory  
 23 infringement analysis?  
 24 A. No.  
 25 Q. You didn't consider, for example, the

Page 284

1 application rate of the MERSORB to the refined coal?  
 2 A. No.  
 3 Q. By which, I mean you don't distinguish between  
 4 different types of refined coal based on the application  
 5 rate of the MERSORB?  
 6 A. No.  
 7 Q. Or based on the application rate of the S-Sorb?  
 8 A. No.  
 9 Q. And you don't distinguish between the different  
 10 types of refined coal for your contributory analysis --  
 11 infringement analysis with regards to the rank of coal?  
 12 A. What do you mean by rank?  
 13 Q. What is -- do you have an understanding of the  
 14 term "rank" as it relates to coal?  
 15 A. Well, there's different types of coal. There's  
 16 lignite sub-bituminous, bituminous, anthracite.  
 17 Q. Okay. You don't distinguish between the  
 18 different types of coal -- let me -- let me rephrase.  
 19 You don't make a distinction between  
 20 different types of refined coal for your contributory  
 21 infringement analysis by reference to the type of coal?  
 22 MR. NEMUNAITIS: Objection, outside the --  
 23 or mischaracterizes the testimony on the report.  
 24 A. Well, I talk about sub-bituminous coal, and  
 25 also some stations burn lignite.

23 (Pages 281 - 284)

Page 285

1 BY DR. GLANDORF:  
2 Q. But all those different types of coal are  
3 within the -- what you are defining as the "refined coal  
4 product" for the purposes of your contributory  
5 infringement?  
6 A. Right. The material, yes.  
7 Q. The materials that's --  
8 A. Yeah.  
9 Q. -- that you're analyzing?  
10 THE WITNESS: Can we -- can we go with  
11 lunch right now or...  
12 DR. GLANDORF: Sure. I mean, could I -- I  
13 just have a couple more questions right on this very  
14 specific point. Would that be okay?  
15 THE WITNESS: Sure, fine.  
16 DR. GLANDORF: And then we -- then I think  
17 we can break. Is that okay?  
18 THE WITNESS: I won't melt.  
19 DR. GLANDORF: Yeah. Okay.  
20 BY DR. GLANDORF:  
21 Q. In defining the refined coal that you are  
22 considering for your contributory analysis question, do  
23 you distinguish between refined coal delivered to plants  
24 with scrubbers versus plants without scrubbers?  
25 A. No.

Page 286

1 Q. In defining the refined coal that you are  
2 considering for your contributory analysis, infringement  
3 analysis, do you distinguish between refined coal on a  
4 plant-by-plant basis?  
5 A. Yes.  
6 Q. So you don't consider refined coal as it's  
7 delivered -- you consider refined coal as a total  
8 material. You break it down into a plant-by-plant basis;  
9 is that right?  
10 A. I think it depends on the type of coal that  
11 they're burning.  
12 Q. And you testified that regardless of the type  
13 of coal that they're burning, it is all considered  
14 refined coal?  
15 A. Yes.  
16 Q. It's made with calcium bromide?  
17 A. Yes.  
18 DR. GLANDORF: Okay. Let's -- let's go  
19 ahead and we can take our lunch break.  
20 THE WITNESS: Okay.  
21 THE VIDEOGRAPHER: We are going off the  
22 record. The time now is 11:40.  
23 (Recess 11:40-12:34.)  
24 THE VIDEOGRAPHER: We are back on the  
25 record. The time now is 12:34.

Page 287

1 BY DR. GLANDORF:  
2 Q. Welcome back, Mr O'Keefe.  
3 A. Thank you.  
4 I don't always get welcomed back from  
5 breaks by attorneys that are deposing me, so it's kind of  
6 nice, a nice touch.  
7 Q. Well, the -- and then I always ask you the same  
8 question afterwards, which I'll ask you again.  
9 A. Yeah.  
10 Q. Did you speak with your attorney about the  
11 substance of your deposition?  
12 A. No.  
13 Q. Okay. Is it your opinion that refined coal  
14 prepared with calcium bromide has no substantial  
15 noninfringing uses?  
16 A. No.  
17 Q. That is not your opinion?  
18 A. Well, my opinion is refined coal was produced  
19 for the purpose pulling mercury out of the combustion  
20 gases.  
21 Q. Your opinion is that was the purpose for  
22 which it's prepared?  
23 A. Yes.  
24 Q. My question is are there any -- let me  
25 rephrase.

Page 288

1 In your opinion, are there substantial  
2 noninfringing uses of refined coal made with calcium  
3 bromide?  
4 A. No.  
5 Q. There are no such use -- refi -- there are no  
6 such uses?  
7 A. Not in this case, no.  
8 Q. And before the break, you testified that power  
9 plants use activated carbon intermittently.  
10 Do you recall that?  
11 A. Yes.  
12 Q. If a power plant used refined coal without  
13 activated carbon 50 percent of the time, would that be a  
14 substantial noninfringing use of refined --  
15 A. No.  
16 Q. -- coal?  
17 Why not?  
18 A. Because it still infringes. As long as they  
19 use activated carbon, it infringes.  
20 Q. So to be clear, I'm talking about a plant and  
21 they intermittently use activated carbon, so it's on 50  
22 percent of the time and it's off 50 percent of the time.  
23 A. Right.  
24 Q. And do you agree that when they are using  
25 refined coal with the activated carbon being injected,

24 (Pages 285 - 288)

Page 289

1 that is infringing, correct?  
2 A. Correct.  
3 Q. And when they are using refined coal without  
4 the activated carbon system on, that would be  
5 noninfringing, correct?  
6 A. Well, it's noninfringing at the time that you  
7 turn the activated carbon off.  
8 Q. Correct.  
9 A. Yes.  
10 Q. And so if a plant -- if a plant, during its  
11 operation, was burning refined coal without the activated  
12 carbon injection system on 50 percent of the time, would  
13 that be a substantial noninfringing use?  
14 A. No.  
15 Q. Again -- and you just told me that burning it  
16 without the activated carbon injection system on is not  
17 noninfringing.  
18 A. Right.  
19 Q. So is it your opinion that that is not a  
20 substantial use?  
21 A. Well, even if they turn the activated carbon  
22 off 50 percent of the time, the 50 percent that it's on  
23 would be infringing.  
24 Q. Right. So 50 percent of the time it's  
25 infringing. 50 percent of the time it's noninfringing?

Page 290

1 A. Right.  
2 Q. You would agree that 50 percent of the time  
3 would be a substantial amount of the time, correct?  
4 A. No.  
5 Q. That's not enough, in your mind, to -- to be  
6 substantial?  
7 A. They still infringe when it is turned on.  
8 Q. Right. But the question here for contributory  
9 infringement is whether there is a substantial  
10 noninfringing use.  
11 And wouldn't you agree that that 50  
12 percent of the time that it's off is a substantial  
13 noninfringing use?  
14 MR. NEMUNAITIS: Objection, asked and  
15 answered.  
16 A. Okay. It says here in number 2 in paragraph 20  
17 of my report, it says, "Number two, the component  
18 material or apparatus is not a staple article or  
19 commodity of commerce suitable for substantial  
20 noninfringing use."  
21 Is that what you're...  
22 Q. That is what I'm talking about, this question  
23 of whether there is a substantial noninfringing use for  
24 refined coal?  
25 A. Well, the refined coal can be still be burned

Page 291

1 without activated carbon injection downstream in the flue  
2 gas.  
3 Q. Correct. And that would be a noninfringing  
4 use?  
5 A. Right.  
6 MR. NEMUNAITIS: Objection, asked and  
7 answered. I'm sorry.  
8 A. Right.  
9 MR. NEMUNAITIS: Same objection, asked and  
10 answered.  
11 BY DR. GLANDORF:  
12 Q. And if that was being done a substantial amount  
13 of time, then that would be a substantial amount of use?  
14 A. What's a substantial amount of time?  
15 Q. Well, let's -- we'll talk about that.  
16 But do you agree that if it was burned for  
17 a -- if it was burned without activated carbon for a  
18 substantial amount of time, that would be a substantial  
19 noninfringing use?  
20 MR. NEMUNAITIS: Objection, asked and  
21 answered.  
22 A. I can't say that.  
23 BY DR. GLANDORF:  
24 Q. You can't make that determination?  
25 A. You know, it depends here on what we mean by

Page 292

1 "the component, material, or apparatus constitutes a  
2 material" -- or I'm sorry, wrong thing I read here.  
3 Where am I?  
4 Okay. "The component material or  
5 apparatus is not a staple article or commodity of  
6 commerce suitable for substantial noninfringing use."  
7 I'm not sure what substantial  
8 noninfringing use is in a context of your questioning.  
9 Now, I think that it had substantial use  
10 in the accused plants.  
11 Q. Substantial noninfringing use?  
12 A. Well, substantial use.  
13 And in one of my subsequent reports, my  
14 rebuttal report -- or I'm sorry -- my reply expert  
15 report, I listed a table showing all the plants involved  
16 in this lawsuit and estimated the amount of time they  
17 were using activated carbon injection. And, you know,  
18 it's like in the 90 percent of the time. A lot of  
19 times it's close to 100 percent. So that's substantial  
20 to me.  
21 Q. Well, and that's my question.  
22 If it was only 50 percent of the time --  
23 or I'm sorry. Let's go back.  
24 You're saying that if the refined coal is  
25 being used without activated carbon only a few percent of

25 (Pages 289 - 292)

Page 293

1 time, that's not substantial?  
2 A. No, that's sub -- it's substantial use with  
3 activated carbon injection.  
4 Q. Right. And so the use without activated carbon  
5 is not substantial; is that what you're saying?  
6 A. Well, it depends on what "substantial" means.  
7 Q. Yes. And that's --  
8 A. You know, and what you're trying to get me to  
9 opine on is, oh, you know, 50 percent is not substantial.  
10 Well, I can't say that.  
11 Q. I'm asking you about your opinions in this  
12 case. You told me at the beginning of -- you know, right  
13 after lunch here, that your opinion is that refined coal  
14 made with calcium bromide does not have substantial  
15 noninfringing uses.  
16 So I am asking you, right, what it means  
17 to be substantial, in your mind, since it's your  
18 opinion?  
19 A. Well, the -- the thing I was trying to express  
20 was it does -- you can still burn refined coal without  
21 activated carbon injection. Okay. That's a use, you  
22 know. But what is the point of refining the coal if  
23 you're not going to use the activated carbon?  
24 You're not going to meet the MATS standard  
25 for mercury emissions.

Page 294

1 Q. But did you consider whether there are any  
2 plants outside of this lawsuit meet MATS standard using  
3 refined coal without activated carbon?  
4 A. I haven't considered that.  
5 Q. There's nothing in any of the patent claims  
6 about meeting the MATS standard, correct?  
7 A. No.  
8 Q. There's nothing about the -- nothing in the  
9 asserted patent claims about meeting any kind of  
10 standard --  
11 A. No --  
12 Q. -- correct?  
13 A. -- just arresting mercury emissions from the  
14 stack.  
15 Q. And you agree that refined coal can be burned  
16 without activated carbon, and that would still produce  
17 heat, correct?  
18 A. Yes, it can be combusted.  
19 Q. And refined coal that is burned without  
20 activated carbon downstream can still power the turbine  
21 in a power plant, correct?  
22 A. Yes.  
23 Q. And you agree that refined coal that is burned  
24 with activated -- out activated carbon can still be  
25 eligible for section 45 tax credits, correct?

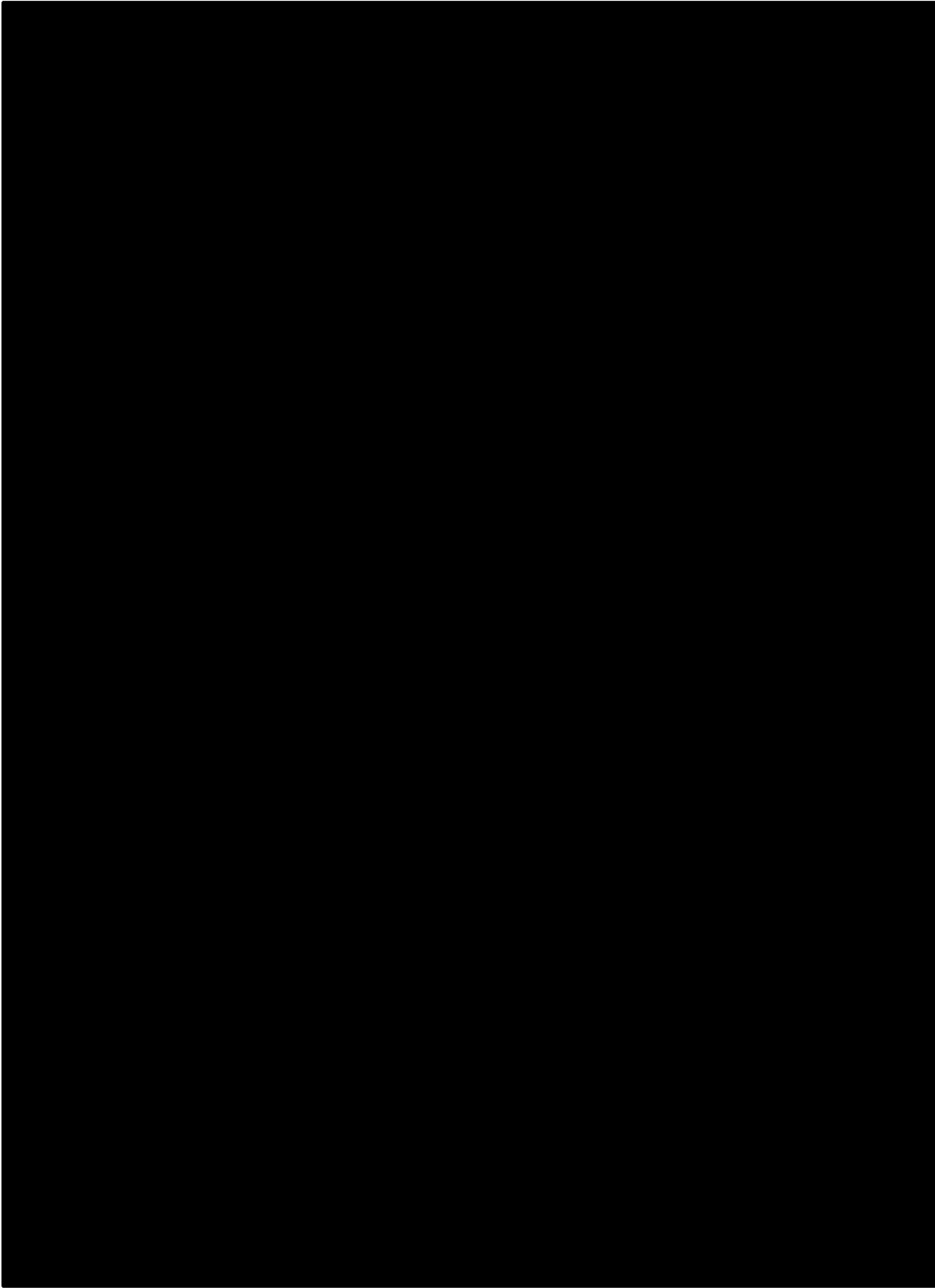
Page 295

1 A. That depends. I don't know.  
2 Does the refined coal by itself meet the  
3 MATS emission standards to qualify for the Title 45 tax  
4 credit? No, I don't think so.  
5 Q. It's your opinion that it would not be possible  
6 for a plant to meet the standards required for Section 45  
7 tax credits by burning refined coal without activated  
8 carbon?  
9 A. Well, lignite or sub-bituminous powder, river  
10 basin coal. We're talking about coal has different  
11 mercury contents.  
12 Q. Well, let's -- let's include all coal in this  
13 question.  
14 A. Well, we can't because coal is classified into  
15 different types.  
16 Q. I understand.  
17 But is your -- is it your opinion that  
18 some coal types would be able to qualify for Section  
19 25 -- Section 45 tax credits by burning refined coal  
20 without activated carbon?  
21 A. If the refined coal is something like  
22 bituminous coal, yeah, maybe.  
23 Q. Is it your understanding that to qualify for  
24 Section 45 tax credits, coal must meet the MATS  
25 regulation standard when burned?

Page 296

1 A. I'm sorry. Can you ask that again?  
2 Q. Sure. I asked you about Section 45 earlier,  
3 and you referred to MATS standard, so let me just make  
4 sure I understand.  
5 Is it your understanding that to qualify  
6 for Section 45 tax credits, coal must meet the MATS  
7 regulation standard when burned?  
8 A. I don't know.  
9 Q. That's not something you considered?  
10 A. I might have.  
11 Q. Let's go back to your table here. You referred  
12 to a table I think in your reply report with some  
13 percentages.  
14 Can you direct me to that.  
15 A. That's in, I believe, the rebuttal report. No,  
16 I'm sorry.  
17 Q. Yes, I think it's the reply report.  
18 A. The reply report, yeah. Okay.  
19 Q. So are you on page 8?  
20 A. Yes.  
21 Q. I guess that's paragraph -- if we look back,  
22 it's starting in paragraph 18; is that right?  
23 A. Correct.  
24 Q. And you give here estimates of the time -- the  
25 operation time that each of these plants uses their

26 (Pages 293 - 296)



27 (Pages 297 - 300)

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Page 27

ME2C\_SDIA-00017394

Page 301

1 In that case there would be -- 10 percent  
2 of the time would be noninfringing, correct?  
3 A. Right.  
4 Q. Is that a substantial noninfringing use?  
5 A. No. It's -- 10 percent is not substantial.  
6 Q. So my question is where do you -- where are you  
7 drawing the line as to what's substantial or not?  
8 A. Well, all of the plants that I have listed in  
9 this table are greater than 90 percent. Some of them are  
10 close to 10 per -- or 100 percent, so that's substantial  
11 use of refined coal.  
12 Q. Right. But the question is not whether they're  
13 substantial use of refined coal.  
14 The question is whether there is a  
15 substantial noninfringing use, correct, whether that part  
16 is substantial?  
17 A. Well, I don't really care about noninfringing  
18 use. All I care about is the 90-plus percent infringing  
19 use, and that's what I talked about in my reply report.  
20 That's what's shown in this table.  
21 Q. If the activated carbon -- sorry.  
22 If the refined coal is being burned  
23 without activated carbon 50 percent of the time, so there  
24 was a 50/50 ratio, would that 50 percent of the time be  
25 enough for you to conclude that there was substantial

Page 302

1 noninfringing use?  
2 A. No.  
3 We're not talking about 50 percent. We're  
4 talking about 90-plus percent.  
5 Q. I agree, but I'm asking you a hypothetical.  
6 If one of these power plants was burning  
7 their refined coal 50 percent of the time with activated  
8 carbon and 50 percent of the time without activated  
9 carbon, would that 50 percent of the time that it was  
10 being burned without activated carbon be a substantial  
11 noninfringing use?  
12 MR. NEMUNAITIS: Objection, asked and  
13 answered.  
14 A. I can't really say.  
15 BY DR. GLANDORF:  
16 Q. If one of these power plants was burning their  
17 refined coal 10 percent of the time with activated carbon  
18 and 90 percent of the time without activated carbon,  
19 would that 90 percent of the time be a substantial  
20 noninfringing use?  
21 A. Again, I really don't care.  
22 All I care about is the 90-plus percent  
23 shown in this table in my report.  
24 Q. You won't answer my hypothetical question?  
25 A. Is, like, 10 percent using the activated coal a

Page 303

1 substantial use?  
2 Q. Again, my question is the opposite of that.  
3 Is the 90 percent that you're burning  
4 without activated carbon a substantial noninfringing  
5 use?  
6 A. I don't think so, hypothetically.  
7 Q. 90 percent is still not substantial in your  
8 mind?  
9 A. Well, 90 percent they're using activated carbon  
10 injection, so that's substantial, 90-plus percent.  
11 Q. So my question, if it was 90 percent use  
12 without activated carbon, is that substantial amount of  
13 noninfringing use?  
14 A. I don't -- I don't know.  
15 Q. When you say 5 percent of the time is not very  
16 substantial, what is the definition of "substantial" that  
17 you are applying?  
18 A. Well, by substantial, I think 90 -- plus 90  
19 percent is substantial.  
20 Q. Well, that's just -- you know, that's  
21 answering -- you're just repeating what your opinion is  
22 there.  
23 But I'm asking you what your definition of  
24 "substantial" is that you used to reach that opinion.  
25 So when you say 5 percent is not very

Page 304

1 substantial, what is the definition of "substantial" that  
2 you're applying?  
3 A. I'd say greater than 50 percent.  
4 Q. Okay. So if we look at these plants, you agree  
5 that there is at least some amount of use of refined coal  
6 without activated carbon?  
7 A. Yes.  
8 Q. So there is at least some amount of  
9 noninfringing use, correct?  
10 A. 1 percent to 10 percent.  
11 Q. Are you offering an opinion that that amount of  
12 use without activated carbon is unusual?  
13 A. No.  
14 Q. Are you offering the opinion that that amount  
15 of use without activated carbon is far-fetched?  
16 A. No.  
17 Q. Are you offering the opinion that that amount  
18 of use without activated carbon is allusory?  
19 A. No.  
20 Q. Are you offering the opinion that that amount  
21 of use without activated carbon is impractical?  
22 A. No.  
23 Q. Are you offering the opinion that that amount  
24 of use without activated carbon is occasional?  
25 A. Occasional, yes.

28 (Pages 301 - 304)

Page 305

1 Q. That's occasional in your mind?  
 2 A. Yes.  
 3 Q. Are you offering the opinion that that amount  
 4 of use without activated carbon is aberrant?  
 5 A. What's that mean?  
 6 Q. Do you have an understanding of the word  
 7 aberrant?  
 8 A. No.  
 9 Q. Are you offering the opinion that that amount  
 10 of use without activated carbon is experimental?  
 11 A. No.  
 12 Q. What is your definition of "occasional"?  
 13 A. It's taken offline for maintenance, repairs,  
 14 cleaning, that sort of thing.  
 15 Q. And so if it was being used, you know, in the  
 16 regular course of business without it being about  
 17 maintenance or cleaning, that would not be unusual?  
 18 A. I'm sorry. Can you ask that again.  
 19 Q. Well, you gave an example when you said  
 20 occasional would be when it's taken offline for  
 21 maintenance, repairs, and cleaning.  
 22 A. Yeah.  
 23 Q. So if it was used in the regular course of  
 24 business, so not for maintenance or cleaning, that  
 25 would -- that would be usual then; is that fair?

Page 306

1 A. That would be usual?  
 2 Q. I'm just trying to get your understanding of --  
 3 of -- tell me what "unusual" would mean, and what are the  
 4 usual uses.  
 5 A. Of activated carbon injection?  
 6 Q. Yeah.  
 7 A. What's the usual use?  
 8 Q. Yes.  
 9 A. To meet the MATS standard, unusual would be,  
 10 you know, you have to take it offline for maintenance or  
 11 repairs or cleaning.  
 12 Q. I see.  
 13 And so the usual use would be burned in  
 14 the course of generating power where you're meeting the  
 15 MATS standard, in your opinion?  
 16 A. Correct.  
 17 Q. And so let's go back to the occasional.  
 18 What's your definition again of  
 19 "occasional" use?  
 20 A. Occasional use of what?  
 21 Q. Well, I asked you earlier is it your -- are you  
 22 offering the opinion that the amount of use of activated  
 23 carbon -- let me start again.  
 24 Are you offering your opinion that the  
 25 amount of use of refined coal without activated carbon is

Page 307

1 occasional? And I think you said, yes, that is  
 2 occasional?  
 3 A. Yes.  
 4 Q. What is your definition of "occasional" that  
 5 you're applying there?  
 6 A. Well, once they take the activated carbon  
 7 injection equipment offline for cleaning, maintenance,  
 8 repairs.  
 9 Q. I see.  
 10 So the opposite of that, again, would be  
 11 the use of activated carbon burning for power in the  
 12 normal sense?  
 13 A. I'm sorry. I don't understand.  
 14 Q. Again, I'm asking you, I guess, what the  
 15 opposite of occasional would be. So the --  
 16 A. Normal operations.  
 17 Q. The normal operations of the plant where you're  
 18 burning coal to produce power, correct?  
 19 A. Right, right.  
 20 Q. Okay. What work did you do to determine the  
 21 amount of use of refined coal without activated carbon at  
 22 the accused plants?  
 23 A. A little bit of research.  
 24 Q. What research?  
 25 A. I had to go check some documentation out that

Page 308

1 the government compiles on operating data.  
 2 Q. What -- can you explain what those documents  
 3 were?  
 4 A. No.  
 5 Q. What type of data did the government compile in  
 6 these documents?  
 7 A. Just operating data for the power plants.  
 8 Q. Did that data include the amount of activated  
 9 carbon that was used?  
 10 A. I think so.  
 11 Q. Do you offer any opinions in your report about  
 12 the amount of activated carbon being used?  
 13 A. No.  
 14 Q. Okay. So was the amount of activated carbon --  
 15 was the data on the amount of activated carbon used the  
 16 basis for your -- any of the opinions that your report?  
 17 A. Well, the amount of time that the system was  
 18 operating without activated carbon --  
 19 Q. Okay.  
 20 A. -- injection.  
 21 Q. Did the data that the government compiled in  
 22 those documents provide you with the percent of time that  
 23 the power plants used activated carbon?  
 24 A. No. I think it was calculated. I can't  
 25 remember offhand.

29 (Pages 305 - 308)

Page 309

1 Q. But it was not from any -- any government data?  
 2 A. Well, yeah.  
 3 Q. It was from government data?  
 4 A. I researched it, yeah.  
 5 Q. Okay. So you researched the percent of time  
 6 that these power plants use activated carbon?  
 7 A. Yes.  
 8 Q. Again, so what was the source of the data?  
 9 A. I can't remember. It's a government website.  
 10 They compile all the data -- operating data that the  
 11 power plants have to submit.  
 12 Q. And does that website indicate the amount of  
 13 time that these plants use activated carbon?  
 14 A. I can't remember offhand.  
 15 Q. When did you access that website?  
 16 A. When I was writing the report.  
 17 Q. Prior to your work on this case, had you ever  
 18 access that website?  
 19 A. No.  
 20 Q. Had you ever leader about that website?  
 21 A. No.  
 22 Q. Your opinions you're offering here on the  
 23 amount of activated carbon use are not based on anything  
 24 you knew before this case, correct?  
 25 A. No.

Page 310

1 Q. They're not based on any of your experience --  
 2 A. No.  
 3 Q. -- before this case, correct?  
 4 A. No.  
 5 Q. And are your opinions on the amount of time  
 6 that activated carbon is being used based on any  
 7 conversations with anyone at the accused power plants?  
 8 A. No.  
 9 Q. Are they based on any conversations with  
 10 anyone?  
 11 A. Well, the attorneys that I'm working for.  
 12 Q. Again, I don't want to inquire into those.  
 13 But are your opinions on the amount of  
 14 time that activated carbon is being used based on  
 15 conversations with anyone other than your attorneys?  
 16 A. No.  
 17 Q. And you never went and observed the injection  
 18 of activated carbon into a flue gas system?  
 19 A. No.  
 20 Q. You never -- did you ever visit a power plant  
 21 to see how they keep their records of activated carbon  
 22 use, if any?  
 23 A. No.  
 24 Q. Are you aware of any records that power plants  
 25 keep regarding their use of activated carbon?

Page 311

1 A. No.  
 2 Q. If you'll take a moment -- and hopefully this  
 3 is not too tall of a task, but could you locate in your  
 4 reply report there the website that you mentioned, or any  
 5 such websites?  
 6 A. I don't know if it's listed or not.  
 7 No. I think it's referenced 232 in my  
 8 rebuttal report.  
 9 Q. Okay. And what is the -- what is -- what are  
 10 you looking at? What is --  
 11 A. EIA.gov.  
 12 Q. Is it your testimony that the EIA website  
 13 provides information on how frequently a power plant uses  
 14 ACI?  
 15 A. I don't know if it specifically provides that,  
 16 but it does have operating data for each power plant.  
 17 THE WITNESS: Can we take a little break?  
 18 DR. GLANDORF: Sure.  
 19 THE WITNESS: I have to go to the men's  
 20 room.  
 21 DR. GLANDORF: You bet.  
 22 THE VIDEOGRAPHER: We are going off the  
 23 record. The time now is 1:05.  
 24 (Recess 1:05-1:13.)  
 25 THE VIDEOGRAPHER: We are back on the

Page 312

1 record. This is the start to media number 4. The time  
 2 is 1:13.  
 3 BY DR. GLANDORF:  
 4 Q. You indicated that your data on the amount of  
 5 time that the plants use activated carbon is based on the  
 6 EIA database, correct?  
 7 A. Well, yeah, it's operating data submitted by  
 8 the power plants.  
 9 Q. And that's the data that you used to figure out  
 10 the percentage of time that the plants use --  
 11 A. Yes.  
 12 Q. -- activated carbon?  
 13 A. Yes.  
 14 Q. Did you have any other source of date for the  
 15 amount of time that plants use activated carbon?  
 16 A. I can't recall.  
 17 Q. You don't recall if there were other sources  
 18 that you --  
 19 A. No.  
 20 Q. -- relied on?  
 21 A. No.  
 22 Q. We spoke a little bit before this last break  
 23 about the -- about whether the use of acti -- use of  
 24 refined coal without activated carbon at these plants was  
 25 substantial or not; do you recall?

30 (Pages 309 - 312)

Page 329

1 Q. We were talking earlier about contributory  
2 infringement. But you've also I think mentioned at one  
3 point, inducement of the infringement.  
4 A. Induced infringement.  
5 Q. Induced infringement.  
6 What is the difference between induced  
7 infringement and contributory infringement?  
8 A. Okay. Again, I'm not a lawyer, so I have to  
9 refer to my reports.  
10 Q. Fair enough. It's not possible to keep all  
11 these legal standards in your head, I assume.  
12 A. Right.  
13 Okay. Can you ask that again.  
14 Q. What is the difference between contributory  
15 infringement and induced infringement?  
16 A. Induced infringement as I say here is when a  
17 company takes action during the time that the patent was  
18 in force that caused -- that was intended to cause and  
19 led to the infringing acts by someone else. Two, the  
20 company was aware of the patent and knew that the acts if  
21 taken would constitute infringement of the patent or that  
22 the company believed there was a high probability that  
23 the acts would infringe the patent and the company took  
24 deliberate steps to avoid learning of that infringement.  
25 And three, the acts were actually carried out by someone

Page 330

1 else that directly infringed a claim.  
2 That's induced infringement.  
3 And contributory infringement we talked  
4 about earlier.  
5 Q. Right. So let's talk a little bit about  
6 induced infringement now if we could.  
7 So let's start maybe on the third point.  
8 I mean, who is directly infringing the claims in the  
9 asserted patents here?  
10 A. The power plant.  
11 Q. And so in your opinion who is inducing that  
12 infringement?  
13 A. The refined coal providers.  
14 Q. Okay. And what are you offering the opinion  
15 that there are any particular acts that the refined coal  
16 plants undertook that caused or led to the infringing  
17 acts?  
18 A. Supplying the refined coal.  
19 Q. Anything else?  
20 A. I don't know. In the sales process, when they  
21 were selling the refined coal process to the power  
22 plants, they might have said something to encourage the  
23 power plants to participate in using the refined coal.  
24 Q. And if you were relying on any statements made  
25 during the selling of that refined coal, that would be

Page 331

1 included in your report, correct?  
2 A. I think so, yes.  
3 Q. Sitting here today, you're not aware of any  
4 evidence other -- that you have not included in your  
5 report?  
6 A. No.  
7 Q. And we'll come back to that.  
8 Just briefly, another requirement here of  
9 induced infringement is that there is knowledge,  
10 correct?  
11 A. Yes, knowledge of the patent.  
12 Q. I'm sorry. Could you just tell me again, what  
13 do they need to have knowledge of?  
14 A. The company was aware of the patent and knew  
15 that the acts, if taken, would constitute infringement of  
16 the patent, or that the company believed there was a high  
17 probability that the acts would infringe on the patent  
18 and the company took the deliberate steps to avoid  
19 learning of that infringement.  
20 Q. Okay. So let's just take those kind of piece  
21 by piece.  
22 So the company has to have knowledge of  
23 the patent, correct?  
24 A. Correct.  
25 Q. And they have to have knowledge that the acts,

Page 332

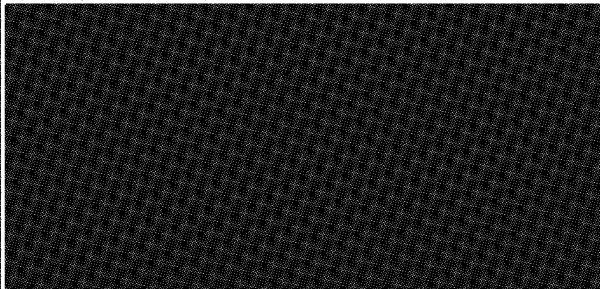
1 if taken, would lead to the infringement of the patent,  
2 correct?  
3 A. Correct.  
4 Q. And what is your evidence that the defendants  
5 knew of the patents?  
6 A. I'd have to refer to my report. I can't  
7 remember offhand.  
8 Q. Sure. I'll help you out there. Again, I -- if  
9 you look at page 87, I think is where you kind of start  
10 with these descriptions.  
11 A. Okay.  
12 Q. If you want to just go ahead and review that  
13 page and the next couple, and then I'll ask you again.  
14 A. Okay.  
15 Q. So does that refresh your recollection about  
16 your opinions about knowledge of the patents?  
17 A. Yes, thank you.  
18 Q. And so if we look, for example, at paragraph  
19 113, you indicate that the defendants would have been  
20 aware of the patents based on the date of the lawsuit,  
21 correct?  
22 A. Right.  
23 Q. And then after that you say they may have known  
24 even earlier than that based on doing a patent search.  
25 Do you see that?

35 (Pages 329 - 332)

1 A. Yes.  
 2 Q. And are you an expert on what constitutes a  
 3 diligent patent search?  
 4 A. Well, I know how to use Google Patents.  
 5 Q. You performed patent searches before?  
 6 A. Oh, yes.  
 7 Q. Using Google Patents?  
 8 A. Yes.  
 9 Q. And did you perform the search that's shown  
 10 here I guess in paragraph 116?  
 11 A. Yes.  
 12 Q. This is a screenshot of your work?  
 13 A. I think so, yes.  
 14 Q. And did you decide on the search terms being  
 15 used here?  
 16 A. Yes.  
 17 Q. And you have an indication here that Sally  
 18 Batanian did a patent search.  
 19 Do you see that?  
 20 A. Yes.  
 21 Q. Do you know what year she did that?  
 22 A. I think it was before 2007.  
 23 Q. Okay. And do you know what a date the --  
 24 the --  
 25 A. I'm sorry. It was -- I don't have that

1 Q. Now, your indication there is not that they  
 2 obtained information about the patents but that they  
 3 obtained information about the ME2C's process, correct?  
 4 A. The patent process, yes.  
 5 Q. There's no indication here that there was  
 6 information circulating that -- about the patent,  
 7 correct?  
 8 A. I don't think so.  
 9 Q. Have you done an analysis to determine whether  
 10 or not ME2 -- the products sold by ME2C infringed each of  
 11 the patents asserted in this case?  
 12 A. Products sold by ME2C?  
 13 Q. That's right.  
 14 A. Well, why would I care, because it'd say on the  
 15 patents.  
 16 Q. I'm asking you if you did that analysis.  
 17 A. No.  
 18 Q. Okay. You haven't done an analysis to consider  
 19 whether the process that ME2C teaches to its customers is  
 20 covered by the claims asserted in this case?  
 21 A. I don't know.  
 22 Q. You haven't done that analysis?  
 23 A. No. No.  
 24 THE WITNESS: Can we take a break?  
 25 DR. GLANDORF: Sure.

1 information.  
 2 Yeah, that date is incorrect.  
 3 Q. And you wouldn't know what database Sally  
 4 Batanian used for her patent search?  
 5 A. No, but Google Patents is readily available to  
 6 the public.  
 7 Q. Do you know when Google Patents was first  
 8 available?  
 9 A. No.  
 10 Q. Had you ever done a patent search in the field  
 11 of mercury control before this case?  
 12 A. No.  
 13 Q. Have you ever done -- had you ever done a  
 14 patent search in the field of coal combustion systems  
 15 before this case?  
 16 A. I don't think so.



1 THE VIDEOGRAPHER: We are going off the  
 2 record. The time now is 2:00.  
 3 (Recess 2:00-2:15.)  
 4 THE VIDEOGRAPHER: We are back on the  
 5 record. This is the start to media number 5. The time  
 6 is 2:15.  
 7 BY DR. GLANDORF:  
 8 Q. Welcome back, Mr. O'Keefe.  
 9 A. Thank you.  
 10 Q. I know that I forgot to welcome you last time.  
 11 A. And you have to ask me a question.  
 12 Q. I do. Did you speak with your attorney about  
 13 the subject of your -- the deposition during the break?  
 14 A. No.  
 15 Q. Let's look back -- I think it's paragraph 16  
 16 where you talk about the elements of induced infringement  
 17 in your opening report.  
 18 A. Okay.  
 19 Q. Sorry, 18, it looks like.  
 20 A. 18.  
 21 All right.  
 22 Q. We were just talking about the requirement that  
 23 the company needs to be aware of the patent.  
 24 Do you recall that?  
 25 A. Yes.

Page 337

1 Q. And I'm looking here in the second of your  
2 enumerated elements for induced infringement, correct?  
3 A. Yes.  
4 Q. But you agree the company has to be aware of  
5 the patent but also needs to know that the acts, if  
6 taken, would constitute infringement of the patent,  
7 correct?  
8 A. Yes.  
9 Q. And if we go back up to number 1, there's a  
10 requirement that the company took action during the time  
11 the patent was in force that was intended to cause and  
12 led to infringing acts by someone else. Do you recall  
13 that?  
14 A. Right, yes.  
15 Q. And I asked you I think - but I just want to  
16 make sure this is on the record - what action if any did  
17 the refined coal companies take to cause or to lead the  
18 power plants to use activated carbon?  
19 A. They took action of devising a refining coal  
20 process that would be in the power plants.  
21 Q. And so the action of devising a refined coal  
22 process that would be in the power plants, is your  
23 evidence of the action that led to the use of activated  
24 carbon?  
25 A. Yep. They started refining coal, yes.

Page 338

1 Q. They started -- is it -- let me make sure I  
2 understand this.  
3 By starting to refine coal, that  
4 encouraged the power plants to use activated carbon?  
5 A. Well, they pro -- they made the equipment.  
6 They took the action of designing equipment and producing  
7 equipment and installing it and getting it up and running  
8 to produce refined coal.  
9 Q. All the equipment you were talking about there  
10 in that answer is about the creation of refined coal,  
11 correct?  
12 A. Yes.  
13 Q. You're not talking about activated carbon  
14 equipment?  
15 A. No.  
16 Q. And my question is: What -- how did the action  
17 of designing and implementing refined coal equipment lead  
18 to or encourage the power plants to use activated carbon?  
19 A. Well, they encouraged the power plants to have  
20 to refine coal facilities in their coal handling  
21 department by buying the coal and -- from the power  
22 plants and selling it back to them after the refining  
23 process at a loss. So that was pretty good  
24 encouragement.  
25 Q. That was encouragement for them to use refined

Page 339

1 coal?  
2 A. Right. And the power plants knew that they had  
3 to meet the MATS standards and they couldn't do it with  
4 activated carbon alone, so they had to use the refined  
5 coal.  
6 Q. Are there any specific actions that you are  
7 alleging that the refined coal operators undertook that  
8 led to the use of activated carbon by the power plants?  
9 A. Well, to meet the MATS standards for mercury  
10 control.  
11 Q. And so what role did the refined coal operators  
12 have in -- refined coal companies don't require the power  
13 plants to meet the MATS standards, correct?  
14 A. No, but the government does.  
15 Q. The only action taken by the refined coal  
16 plants that you're pointing to here for induced  
17 infringement is the creation and selling of the refined  
18 coal; is that correct?  
19 A. Right, at a loss.  
20 Q. At a loss?  
21 A. Yes.  
22 Q. There are no other actions that you are  
23 alleging here that are being undertaken by the refined  
24 coal entities that lead to the use of activated carbon?  
25 A. No.

Page 340

1 Q. I want to go now to -- back to point 2 in  
2 paragraph 18, if we could.  
3 And we talked a little bit about the first  
4 half of this clause that the company had to be aware of  
5 the patent and knew that the acts would constitute  
6 infringement of the patent. But there's also a second  
7 part that follows that, an "or."  
8 Do you see that?  
9 A. Or that the company believed there was a high  
10 probability that the acts would infringe the patent and  
11 the company took the deliberate steps to avoid learning  
12 of that infringement.  
13 Q. Yeah, that's what I'm referring to. And I  
14 think there is a typo there because there's a couple of  
15 "or that's." But this is an "or," right? This is  
16 another way that they can meet point 2, is that they took  
17 deliberate steps to avoid learning of that infringement?  
18 A. Yep.  
19 Q. And have you heard the term before "willful  
20 blindness"?  
21 A. No.  
22 Q. Okay. Well, with regard to this --  
23 A. Or I think I have, yes. I'm sorry.  
24 Q. Okay. And do you associate that term "willful  
25 blindness" with this clause that we were just looking at?

37 (Pages 337 - 340)

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Page 341

1 A. Yeah, I would say so.  
 2 Q. Okay.  
 3 A. To just look the other way.  
 4 Q. Right. Okay. That's your understanding of  
 5 what's being described here?  
 6 A. Yes.  
 7 Q. I see. Do you recall if you offered any  
 8 opinions of deliberate steps that were taken by the  
 9 defendants in this case to avoid learning of the  
 10 infringement?  
 11 A. No.  
 12 Q. You don't recall that?  
 13 A. No.  
 14 Q. Is it fair to say that if you do allege that  
 15 the company took any deliberate steps to avoid learning  
 16 of the infringement, that would be included in your  
 17 expert opinion?  
 18 A. Yes.  
 19 Q. Sitting here today, you're not aware of any  
 20 facts or evidence of steps taken to avoid learning of the  
 21 infringement that are not in your report?  
 22 A. I don't really remember. But I seem to  
 23 remember that one of the defendants took out liability  
 24 insurance against infringing on the patents.  
 25 Q. And in your opinion, is that an example of a

Page 342

1 step that would be taken to avoid learning of  
 2 infringement?  
 3 A. No, not really. It would be to -- they'd be  
 4 aware of the patent, and they would -- I believe that  
 5 they would be causing induced infringement by selling  
 6 refined coal to the power plants.  
 7 Q. I see.  
 8 And that's an argument that you would  
 9 include -- if you're making an argument, is it fair to  
 10 assume that it's in your report here?  
 11 A. I think it is.  
 12 Q. This is not a new argument you're coming up  
 13 with here --  
 14 A. No. no.  
 15 Q. Okay.  
 16 DR. GLANDORF: Thank you for that  
 17 testimony. At this point, I'm going to pass the witness  
 18 over to my colleague Mr. Dyess. And so I will be done,  
 19 you know, with my questioning with the reservation of  
 20 course that if there is a, you know, redirect, there may  
 21 be some -- that will be followed on top of that. But  
 22 otherwise I will pass the witness over.  
 23 THE VIDEOGRAPHER: Do you want to go off  
 24 the record?  
 25 DR. GLANDORF: Yes, let's go off the

Page 343

1 record.  
 2 THE VIDEOGRAPHER: We are going off the  
 3 record. The time now is 2:24.  
 4 (Off the record 2:24-2:26)  
 5 THE VIDEOGRAPHER: We are back on the  
 6 record. The time now is 2:26.  
 7 EXAMINATION  
 8 BY MR. DYESS:  
 9 Q. Mr. O'Keefe, I've been sitting down there a  
 10 long time. Thank you for bearing with us this long.  
 11 A. I've been sitting here a long time, too.  
 12 Q. Sure. It's true.  
 13 We've introduced ourselves at various  
 14 time. I'm Jeff Dyess. I'm here on behalf of a group of  
 15 the defendants in this case that usually get referred to  
 16 as the CERT Defendants.  
 17 A. Right.  
 18 Q. When I make that reference, do you have a  
 19 general understanding what I'm talking about as the CERT  
 20 Defendants?  
 21 A. Yes, I do.  
 22 Q. Okay. A few follow-up questions to some things  
 23 that you've been asked over the last day and a half.  
 24 We've talked about MATS a few times, but I'm not sure  
 25 we've explained in the record what that is. Do you

Page 344

1 what -- when we talk about MATS in this case, do you know  
 2 what that is?  
 3 A. Yeah, it's an acronym. It stands for Mercury  
 4 and Air Toxics Standards.  
 5 Q. And what -- MATS is the EPA's national standards  
 6 to reduce mercury and other toxic air pollution from  
 7 coal-fired plants, right?  
 8 A. Correct.  
 9 Q. Coal-fired power plants had to comply with the  
 10 MATS rules for mercury by 2015 or 2016, depending on  
 11 whether they got on extension, right?  
 12 A. I can't remember for sure. I'll have to check  
 13 that out.  
 14 Q. Sure. Do you know if that's somewhere in your  
 15 report?  
 16 A. Well, yeah. I'd have to look for it.  
 17 Q. Yeah, if you can get to that quickly. I don't  
 18 think that's really in dispute, but you're more than  
 19 welcome to look.  
 20 A. Well, no. I mean --  
 21 Q. They had to comply with it at some point,  
 22 right?  
 23 A. Yeah, they had to comply with it, sure.  
 24 Q. Do you remember when that compliance date was?  
 25 A. I can't remember offhand without referring to

Page 345

1 my report.

2 Q. Sure. Then if you would, why don't you look at

3 your report. And I don't have that pulled up.

4 And you're looking at your first report,

5 correct?

6 A. Well, I might have to look at all of them. I

7 can't remember specifically where it's at.

8 Q. As I --

9 A. It may actually be in my reply report.

10 Q. I can tell you exactly where it is. If you'll

11 look at paragraph 50 of your first report.

12 A. 50?

13 Q. Yeah.

14 A. Okay. Yes, 2015.

15 Q. Unless they got a one-year extension, right?

16 A. Yep.

17 Q. So some plants it was 2015, some plants it was

18 2016?

19 A. Right.

20 Q. Okay. So it's correct that you don't have any

21 professional experience working with power plants on MATS

22 compliance, correct?

23 A. Correct.

24 Q. Okay. You don't have any -- there are other

25 mercury emission control regulatory compliance rules

Page 346

1 besides MATS, correct?

2 A. I don't know.

3 Q. Okay. But if there are, you don't have any

4 professional experience working with any power plants on

5 mercury emission control regulatory compliance rules

6 other than MATS, correct?

7 A. Right.

8 Q. Okay. You've never done any research or

9 publications on MATS compliance?

10 A. No.

11 Q. You don't --

12 A. Other than in this matter that we're dealing

13 with now.

14 Q. Fair point. Outside of the work you've done in

15 this matter you don't have any research or publications

16 on MATS compliance, correct?

17 A. No.

18 Q. Other than the work you've done for this case

19 you don't have any training or education on MATS

20 compliance, correct?

21 A. No.

22 Q. Okay. Other than what -- the work you've done

23 on that case, you don't have any teaching experience on

24 MATS compliance, correct?

25 A. No.

Page 347

1 Q. Would it be correct to say that your entire

2 understanding of MATS compliance has come as a result of

3 your work on this case?

4 A. Yes.

5 Q. All right. We talked a lot in this case --

6 we've used the term "refined coal," correct?

7 A. Right.

8 Q. That's actually a label that comes out of the

9 tax code of -- section 45 of the tax code about tax

10 credits, right?

11 A. I would imagine. I can't remember for sure.

12 Q. Okay. Let me back up a couple of questions.

13 You don't hold yourself out as an expert

14 on MATS compliance, correct?

15 A. Other than in this case. I hold myself as an

16 expert in MATS compliance with regard to patent

17 infringement of the patents-in-suit in this case.

18 Q. Is MATS compliance part of the -- any element

19 of any of the asserted patents in this case?

20 A. Not specifically, but the patented technology

21 is used to achieve MATS compliance, namely mercury

22 capture.

23 Q. Right. But there's not -- the level of mercury

24 capture required for MATS compliance isn't a part of any

25 element of any of the claims in this case?

Page 348

1 A. No, it's not.

2 Q. We've talked a lot about activated carbon

3 injection, and I've got some really basic questions just

4 to make sure. A jury might see this one, and it will

5 make sure they understand it.

6 A power plant has to have special

7 equipment installed at the plant in order for it to

8 inject activated carbon, right?

9 A. Correct.

10 Q. Okay. I refer to that as activated carbon

11 injection system. Is that -- do you refer to it as

12 anything else?

13 A. No.

14 Q. Okay. And a power plant has to get permanent

15 authorization from its environmental regulatory agency to

16 install and use an activated carbon injection system,

17 right?

18 A. I believe so.

19 Q. Okay. And a power plant -- you would agree

20 that a power plant that did not have this specialized

21 equipment for injecting activated carbon wouldn't be

22 capable of infringing any claims of the asserted patents,

23 right?

24 A. I would say that's true, yes.

25 Q. Do you -- have you done any research -- let's

39 (Pages 345 - 348)

Page 349

1 start overall. Have you done any research at any time  
2 about when the first activated carbon injection system  
3 was installed in a coal-fired power plant in the United  
4 States?  
5 A. No.  
6 Q. And that would certainly include you haven't  
7 done that for this case, correct?  
8 A. No.  
9 Q. Okay. Have you done any research -- let me  
10 strike that.  
11 Have you done any work in this case to  
12 determine when an activated carbon injection system was  
13 installed at any power plant that's the subject of this  
14 case?  
15 A. When it was installed?  
16 Q. Yes.  
17 A. It was installed in conjunction with the  
18 refined coal facility.  
19 Q. Let me unpack that statement.  
20 Are you saying at the same time that a  
21 power plant had a refined coal facility installed, it had  
22 an activated carbon injection system installed?  
23 A. That's my understanding.  
24 Q. What do you base that understanding on?  
25 A. Just what I've reviewed in this case, documents

Page 350

1 that I've reviewed.  
2 Q. Can you tell me what documents you're referring  
3 to?  
4 A. Look at the back of my report. I list all 200  
5 and some documents that I reviewed to write the report.  
6 Q. Can you refer me to any one document that would  
7 show that?  
8 A. No.  
9 Q. Okay. So it's your understanding that there  
10 were no power plants that are the subject of this case  
11 that used act -- that used refined coal before it  
12 installed an activated carbon injection system?  
13 A. I don't think so, no.  
14 Q. And what do you base that understanding on?  
15 A. What documentation that I read.  
16 Q. And you can't point into any of that  
17 documentation?  
18 A. No.  
19 Q. Did you specifically research that issue?  
20 A. Yes.  
21 Q. Where did you go to research that issue?  
22 A. Those documents that I've listed in the  
23 appendix.  
24 Q. Okay. You reviewed Dr. Connie Senior's report  
25 in this case, correct?

Page 351

1 A. Yes.  
2 Q. And is it your understanding that she cites  
3 evidence that shows for various power plants that they  
4 used refined coal years before they installed an  
5 activated carbon injection system?  
6 A. I don't remember.  
7 Q. Okay. You don't remember that from her report?  
8 A. No.  
9 Q. If I represent to you that that's in her  
10 report, did you do any research to refute that evidence?  
11 A. I don't think so.  
12 Q. Okay. Kind of as a general matter, is there  
13 anything outside of the documents that were produced in  
14 this case where someone could go to determine when an  
15 activated carbon injection system was installed at a  
16 power plant?  
17 A. Not that I'm aware of.  
18 Q. You certainly didn't access any information  
19 outside of what was produced in this case to make that  
20 determination, correct?  
21 A. No.  
22 Q. Before I leave this point I just want to make  
23 sure I've got a clear understanding.  
24 Is it your opinion that none of the power  
25 plants that are the subject of this case used refined

Page 352

1 coal at any time before they used activated carbon  
2 injection?  
3 A. That's my understanding, yes.  
4 Q. Okay. And any opinion you would have taken  
5 otherwise would be set forth in one of your reports  
6 you've put in this case, correct?  
7 A. Correct.  
8 Q. Certainly, if Dr. Senior took a different  
9 position in her report, you've submitted a reply to that  
10 report, correct?  
11 A. Right.  
12 Q. And that's not in your reply report, correct?  
13 A. I don't think it is.  
14 Q. Okay.  
15 A. I could check that if that's okay.  
16 Q. Sure. Yeah.  
17 A. Okay. I think I address that opinion of Dr.  
18 Senior starting on page 1 of my reply report.  
19 Q. You're talking about your February 2023 report,  
20 correct?  
21 A. I believe so, yes.  
22 Q. All right. Paragraph 1. Okay?  
23 A. Well, it's actually a little further than that.  
24 Paragraph 3.  
25 Q. Okay.

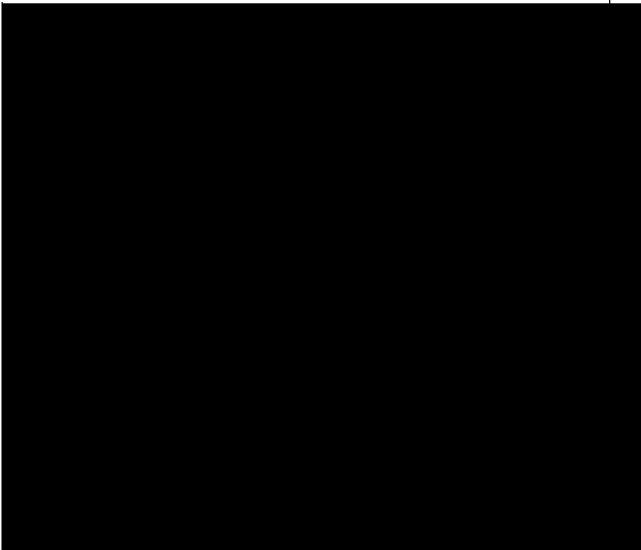
40 (Pages 349 - 352)

1 A. I think that's what you're talking about.  
 2 Q. Well, I see where that talks about burning  
 3 refined coal during maintenance operations.  
 4 And I see where you say that she offers no  
 5 evidence that these power plants would have continued to  
 6 operate with the acceptable electricity generation if  
 7 they permanently disabled activated carbon injection  
 8 systems.  
 9 But is there something in paragraph 3  
 10 where you address whether or not plants used refined coal  
 11 before activated carbon?  
 12 A. I don't know. I'm checking.  
 13 Q. I'm sorry. I thought you had referred me to  
 14 paragraph 3.  
 15 A. Well, it started -- it started talking --  
 16 Q. I understand.  
 17 A. -- about it on paragraph 3.  
 18 Q. Okay.  
 19 A. I don't think I address that.  
 20 Now, just to be clear, I think you're  
 21 asking me, were some of the power plants burning refined  
 22 coal without activated carbon injection?  
 23 Q. No, that's not what I'm asking you.  
 24 What I'm asking you is, do you -- the  
 25 first question was: Do you know when any of these plants

1 accurate or not?  
 2 A. I don't think so, no.  
 3 Q. You don't think it's accurate or you don't have  
 4 an opinion?  
 5 A. I don't have an opinion.  
 6 Q. Okay. You're not saying she's wrong; you're  
 7 not saying she's wrong or if she's right?  
 8 A. No. Right.  
 9 Q. So it's possible those plants did burn refined  
 10 coal years before they installed activated carbon?  
 11 A. But I don't think there's any proof that they  
 12 did.  
 13 Q. Do you know if someone would be able to go out  
 14 and determine when an activated carbon injection system  
 15 was installed at a power plant?  
 16 A. I guess so.  
 17 Q. Do you know where anyone would go to look for  
 18 that?  
 19 A. Probably at the power plants, whoever is in  
 20 charge of coal handling.  
 21 Q. Is there anyone else besides the -- is there  
 22 anywhere else besides the power plants themselves where  
 23 one could go to look for that information?  
 24 A. I don't know.  
 25 Q. Okay. Have you seen -- do you recall seeing

1 installed the specialized activated carbon injection  
 2 system they would need to have to inject activated  
 3 carbon? And I believe you said you didn't?  
 4 A. I didn't, yes.  
 5 Q. Okay. And you didn't investigate that as a  
 6 part of this case, correct?  
 7 A. No.  
 8 Q. And my next set of questions refer to, do you  
 9 know if any of the plants that are accused as being  
 10 direct infringers in this case --  
 11 A. Okay.  
 12 Q. -- burned refined coal before they installed  
 13 activated carbon injection equipment?  
 14 A. Okay.  
 15 Q. And your statement I think was, that the two  
 16 systems were installed at the same time?  
 17 A. Yeah. There was no need to burn refined coal  
 18 without activated carbon injection.  
 19 Q. At any time ever?  
 20 A. Right.  
 21 Q. Okay. And then my follow-up question was: If  
 22 Dr. Senior says in her report that multiple plants who  
 23 were accused of infringement in this case burned refined  
 24 coal years before activated carbon injection systems were  
 25 installed, you don't have an opinion of whether that's

1 any evidence in this case that would inform you that a  
 2 power plant was burning refined coal before it was using  
 3 activated carbon?  
 4 A. No.  
 5 Q. If you would look to your first report. And  
 6 I'm going to try to get you a page. It may take me a  
 7 second.  
 8 Okay. Hold on one second.



1 before activated carbon was used?  
 2 A. Yes.  
 3 Q. If there are other plants that burned refined  
 4 coal before they installed an activated carbon system,  
 5 would you agree that those would also be noninfringing  
 6 uses of refined coal?  
 7 A. Yes.  
 8 Q. For those plants that used refined coal before  
 9 they installed activated carbon, would you agree that  
 10 those would be substantial noninfringing uses of refined  
 11 coal?  
 12 A. Yes.  
 13 Q. And you've made no effort in this case to  
 14 determine any volume of refined coal that may have been  
 15 burned, combusted at the accused power plants before  
 16 those plants installed activated carbon, correct?  
 17 A. Correct.  
 18 Q. And you haven't considered as a part of your  
 19 substantial noninfringing use opinions in this case,  
 20 whether a plant's use of refined coal before activated  
 21 carbon was installed was a substantial noninfringing use,  
 22 correct?  
 23 A. Correct.  
 24 Q. I honestly can't remember if this has come up  
 25 in a day and a half?

1 Do you know -- if I use the acronym EERC,  
 2 do you know who I'm talking about?  
 3 A. Yes.  
 4 Q. Who is the EERC?  
 5 A. It's listed in my list of acronyms. It stands  
 6 for Energy and Environmental Research Center.  
 7 Q. Okay. Among other things that that EERC might  
 8 have done, one thing it did for the plants -- I'm  
 9 sorry -- for the defendants in this case is that they did  
 10 the testing on coal to qualify it as refined coal under  
 11 section 45 of the tax code, correct?  
 12 A. I think so, yes.  
 13 Q. Okay. You're still at your first report?  
 14 A. Yes.  
 15 Q. If you would, turn to page 42, paragraph 81.  
 16 A. Okay.  
 17 Q. I don't need you to read that into the record.  
 18 But if you would just read that paragraph to yourself,  
 19 and tell me when you've had a chance to do that.  
 20 A. Okay.  
 21 Q. This -- did you write this part of your report?  
 22 A. Yes, I wrote the whole report.  
 23 Q. So you familiarized yourself -- let me back up.  
 24 This paragraph kind of walks through the  
 25 EERC's process for qualifying coal as refined coal,

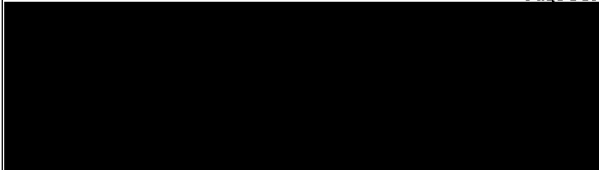
18 Q. Okay. And their use of refined coal for years  
 19 without activated carbon, you'd agree that would be a  
 20 substantial noninfringing use of refined coal, correct?  
 21 MR. NEMUNAITIS: Objection,  
 22 mischaracterizes testimony.  
 23 A. During that time period, I would say yes.  
 24 BY MR. DYESS:  
 25 Q. Okay. And you're talking about the time period

6 A. It might be in the data sheets. I don't know.  
 7 Q. Okay. Do you have an opinion of whether or not  
 8 the EERC's combustion of coal from the power plants  
 9 that's treated with calcium bromide for which no  
 10 activated carbon was injected, is a substantial  
 11 noninfringing use?  
 12 A. Yes.  
 13 Q. What is that opinion?  
 14 A. Well, it's not infringing.  
 15 Q. And it's a substantial noninfringing use?  
 16 A. Well, I would say, so as long as activated  
 17 carbon is not injected.  
 18 Q. And just I want to make sure I understand your  
 19 last answer.  
 20 To your understanding activated carbon was  
 21 not injected by the EERC as a part of this section 45  
 22 qualification process, correct?  
 23 A. Correct.  
 24 Q. If you would -- you've still got your first  
 25 report in front of you?

1 Q. Okay. And power plants only use that expensive  
 2 emission contro -- control strategy of using activated  
 3 carbon because they have to comply with MATS, correct?  
 4 A. Correct.  
 5 Q. Is there any other reason power plants use this  
 6 expensive activated carbon technology other than  
 7 complying with MATS?  
 8 A. Not that I'm aware of.  
 9 Q. We talked about this a little earlier when we  
 10 were talking about MATS.  
 11 MATS compliance came along in either 2015  
 12 or 2016, correct?  
 13 A. Correct.  
 14 Q. Are you aware of any power plants that are  
 15 accused in this case that installed activated carbon  
 16 injection systems for any reason other than compliance  
 17 with a mercury emission control regulation?  
 18 A. No.  
 19 Q. And their motivation for installing that  
 20 activated carbon injection system, which is expensive to  
 21 use, was to comply with mercury control regulations like  
 22 MATS?  
 23 A. Right.  
 24 Q. And compliance with mercury control regulations  
 25 like MATS is the only reason you're aware of that these

1 A. Yes, I do.  
 2 Q. If you could look with me at page 62.  
 3 A. Okay.  
 4 Q. I've got a couple of questions about paragraph  
 5 99 that starts on page 62 and goes over to page 63. I  
 6 don't need you to read it into the record, but if you  
 7 would read that paragraph and familiarize yourself with  
 8 it and let me know when you've done that.  
 9 A. Okay.  
 10 Q. My questions really focus on the last sentence  
 11 of paragraph 99, which is over on page 63. And I believe  
 12 it says, "These power plants would not incur the expense  
 13 of activated carbon if they did not need to."  
 14 Did I read that correctly?  
 15 A. Yes.  
 16 Q. Okay. And "these power plants," you're talking  
 17 about the power plants that are accused of infringement  
 18 in this case?  
 19 A. Correct.  
 20 Q. Okay. Am I correct in understanding that  
 21 statement that activated carbon is expensive, correct?  
 22 A. I would say so, yes.  
 23 Q. As a -- as an emission control strategy, it's  
 24 an expensive one?  
 25 A. Yes.

1 plants installed this activated carbon injection system  
 2 and used the expensive activated carbon, right?  
 3 A. Yes.  
 4 Q. As a part of your work on this case, were you  
 5 told what you could -- I'm sorry. Let me back up.  
 6 As a part of your work on this case, were  
 7 you told what you should and should not consider as a  
 8 part of the substantial noninfringing use analysis?  
 9 A. No.  
 10 Q. You came up with that on your own?  
 11 A. Yeah.  
 12 Q. Again, I've got a few basic questions in case  
 13 we -- because chances are we're not going to get to talk  
 14 to you again before we try this case, if we try it.  
 15 You would agree that before any of the  
 16 defendants in this case could supply refined coal to a  
 17 power plant, it would have to fully construct its refined  
 18 coal facilities before it started supplying that refined  
 19 coal, correct?  
 20 A. I think so, yes.  
 21 Q. Okay. If you could look at page 123 of your  
 22 first report. Okay. Yeah.  
 23 I'm sorry. I think I'm -- let me -- I may  
 24 have you going to the wrong place. Don't -- hold on one  
 25 second.

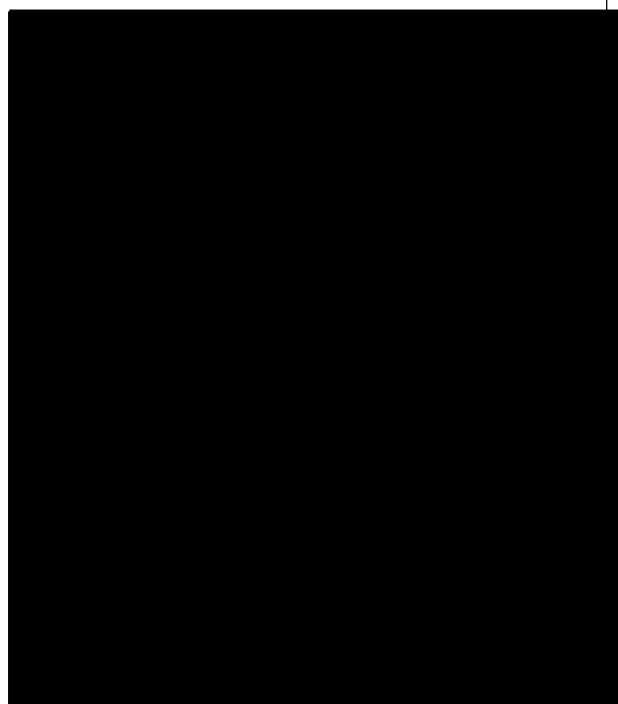


6 Q. Do you know what a power plant has to do to  
7 shut off its activated carbon injection system?  
8 A. Not exactly.  
9 Q. You've never seen a power plant shut down its  
10 activated carbon injection system?  
11 A. No, no.  
12 Q. You've never seen a power plant start up its  
13 activated carbon injection system?  
14 A. No.  
15 Q. You've never talked to anyone that told you how  
16 a power plant either shuts down or starts up its  
17 activated carbon injection system, correct?  
18 A. No.  
19 Q. We've talked -- or you talked with Mr. Glandorf  
20 in this case about activated carbon injection systems  
21 being taken off-line for maintenance and repairs and  
22 things like that?  
23 A. Right.  
24 Q. Okay. Do you remember that testimony?  
25 A. Oh, yes.

1 MR. NEMUNAITIS: Objection, outside --  
2 THE REPORTER: Objection, what?  
3 MR. NEMUNAITIS: Objection, outside the  
4 scope.  
5 THE REPORTER: And the answer?  
6 A. I would expect that.  
7 BY MR. DYESS:  
8 Q. You would expect them to keep those records?  
9 A. Yes.  
10 Q. Did you see any of those records in this case?  
11 A. I can't remember.  
12 Q. Did you ask to see any of those records --  
13 A. No.  
14 Q. -- In this case?  
15 THE REPORTER: Wait for the whole  
16 question.  
17 BY MR. DYESS:  
18 Q. We looked at the chart. I need you to go to  
19 your rebuttal report, your third report.  
20 A. Reply?  
21 Q. Your reply, yeah. There we go.  
22 MR. DYESS: Oh, come on.  
23 Which exhibit is that?  
24 MS. KOSOVA: 3.  
25 BY MR. DYESS:

1 Q. You would expect from your experience in power  
2 plants, that power plants would keep records of when  
3 their activated carbon injection system was off-line for  
4 maintenance or repairs, correct?  
5 A. I would say so, yes.  
6 Q. Did you see any of those records in this case?  
7 A. I can't remember.  
8 Q. Do you recall if you asked to see any of those  
9 records in this case?  
10 A. I can't remember.  
11 Q. And you would expect those plants to keep those  
12 kind of records because the activated carbon injection  
13 system is such an important compliance system at the  
14 plant, correct?  
15 A. Correct.  
16 Q. Do you know of any power plants in this case  
17 that didn't keep records of when its activated carbon  
18 injection system was off-line for maintenance, repairs,  
19 or things like that?  
20 A. No.  
21 Q. Because an activated carbon injection system is  
22 so important for mercury control and MATS compliance,  
23 would you expect a power plant in this case to keep  
24 records of when it was in operation or not in operation?  
25 A. I would expect that.

1 Q. Okay. So we've spent some time talking about  
2 the chart that starts on page 8 of your report?  
3 A. Yes.



1 MR. DYESS: Let's take a quick break  
2 THE VIDEOGRAPHER: We're going off the  
3 record. The time now is 4:13.

4 (Recess 4:13-4:33.)

5 THE VIDEOGRAPHER: We are back on the  
6 record. The time now is 4:33.

7 EXAMINATION

8 BY DR. GLANDORF:

9 Q. Mr. O'Keefe, I just wanted to ask you questions  
10 about something specific -- a specific portion in your  
11 report that was brought up by your -- your counsel, and  
12 that is --

13 A. That has to do with the claim charts?

14 Q. Yes. You have the claim charts there, and it  
15 was the 114 claim chart on page 150.

16 A. Okay.

17 Q. Now, do you recall your counsel asking you  
18 about the calcium bromide ions that are in water when the  
19 MERSORB is absorbed in water?

20 A. Yes.

21 Q. Now, when MERSORB is added -- let me rephrase  
22 that.

23 After MERSORB is added to the coal, is the  
24 calcium bromide in solution?

25 A. It's a liquid, but I don't know specifically

1 if it's in a solution.

2 Q. You don't know if it's a liquid or if it's an  
3 aqueous solution; is that -- is that fair?

4 A. That's correct.

5 Q. And then as the calcium -- the coal with the  
6 added calcium bromide is brought into the combustion  
7 chamber, do you know if the calcium bromide there is in  
8 solution?

9 A. I don't know.

10 Q. Do you know if it is a liquid, at that point?

11 A. I would assume if it's on the coal and it  
12 hasn't evaporated, yeah.

13 Q. What form do you believe the calcium bromide is  
14 when it's on the coal as it's being introduced into the  
15 combustion chamber?

16 A. I -- I don't know.

17 Q. Okay.

18 DR. GLANDORF: Okay. No further questions  
19 from me.

20 MR. NEMUNAITIS: Nothing from me.

21 THE WITNESS: That's it. Thank you very  
22 much.


23 THE VIDEOGRAPHER: This concludes today's  
24 deposition. The time now is 4:35 p.m.

25 (Proceedings adjourned at 4:35 p.m.)

25 MR. NEMUNAITIS: Pass the witness.

55 (Pages 409 - 412)

Page 413

1 REPORTER'S CERTIFICATE  
 2 STATE OF MINNESOTA )  
 ) ss.  
 3 COUNTY OF HENNEPIN )  
 4 I hereby certify that I reported the deposition  
 of PHILIP J. O'KEEFE, P.E. on the 3rd day of March, 2023,  
 5 in Winona, Minnesota, and that the witness was by me  
 first duly sworn to tell the whole truth;  
 6  
 That the testimony was transcribed by me and is  
 7 a true record of the testimony of the witness;  
 8 That the cost of the original has been charged  
 to the party who noticed the deposition, and that all  
 9 parties who ordered copies have been charged at the same  
 rate for such copies;  
 10  
 That I am not a relative or employee or  
 11 attorney or counsel of any of the parties, or a relative  
 or employee of such attorney or counsel;  
 12  
 That I am not financially interested in the  
 13 action and have no contract with the parties, attorneys,  
 or persons with an interest in the action that affects or  
 14 has a substantial tendency to affect my impartiality;  
 15 That the right to read and sign the deposition  
 by the witness was not waived.  
 16  
 WITNESS MY HAND AND SEAL THIS 6th day of March,  
 17 2023.  
 18  
 19  
 20  
 21   
 22 Dawn Workman Bounds, CSR 6129  
 Notary Public, Hennepin County, Minnesota  
 23 My commission expires January 31, 2024  
 24  
 25

Page 415

1 Midwest Energy & MES v Arthur J. Gallagher & Co, Et Al  
 2 Philip J. O'Keefe, Vol. II, P.E. (#5775935)  
 3 ERRATA SHEET  
 4 PAGE \_\_\_\_\_ LINE \_\_\_\_\_ CHANGE \_\_\_\_\_  
 5 \_\_\_\_\_  
 6 REASON \_\_\_\_\_  
 7 PAGE \_\_\_\_\_ LINE \_\_\_\_\_ CHANGE \_\_\_\_\_  
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 9 REASON \_\_\_\_\_  
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 22 \_\_\_\_\_  
 23 \_\_\_\_\_  
 24 Philip J. O'Keefe, Vol. II, P.E. Date \_\_\_\_\_  
 25 \_\_\_\_\_

Page 414

1 JUSTIN T. NEMUNAITIS, ESQ.  
 2 jnemunaitis@caldwellcc.com  
 3 March 6, 2023  
 4 Midwest Energy & MES v Arthur J. Gallagher & Co, Et Al  
 5 3/3/2023, Philip J. O'Keefe, Vol. II, P.E. (#5775935)  
 6 The above-referenced transcript is available for  
 7 review.  
 8 Within the applicable timeframe, the witness should  
 9 read the testimony to verify its accuracy. If there are  
 10 any changes, the witness should note those with the  
 11 reason, on the attached Errata Sheet.  
 12 The witness should sign the Acknowledgment of  
 13 Deponent and Errata and return to the deposing attorney.  
 14 Copies should be sent to all counsel, and to Veritext at  
 15 cs-ny@veritext.com.  
 16  
 17 Return completed errata within 30 days from  
 18 receipt of testimony.  
 19 If the witness fails to do so within the time  
 20 allotted, the transcript may be used as if signed.  
 21  
 22 Yours,  
 23 Veritext Legal Solutions  
 24  
 25

Page 416

1 Midwest Energy & MES v Arthur J. Gallagher & Co, Et Al  
 2 Philip J. O'Keefe, Vol. II, P.E. (#5775935)  
 3 ACKNOWLEDGEMENT OF DEPONENT  
 4 I, Philip J. O'Keefe, Vol. II, P.E., do hereby declare that I  
 5 have read the foregoing transcript, I have made any  
 6 corrections, additions, or changes I deemed necessary as  
 7 noted above to be appended hereto, and that the same is  
 8 a true, correct and complete transcript of the testimony  
 9 given by me.  
 10  
 11 \_\_\_\_\_  
 12 Philip J. O'Keefe, Vol. II, P.E. Date \_\_\_\_\_  
 13 \*If notary is required  
 14 SUBSCRIBED AND SWORN TO BEFORE ME THIS  
 15 \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_  
 16  
 17  
 18  
 19 NOTARY PUBLIC  
 20  
 21  
 22  
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 25

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate.

The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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THE ABOVE RULES ARE CURRENT AS OF APRIL 1,

2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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