

IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA

ANDREA ROSSI AND :
LEONARDO CORPORATION, :
Plaintiffs, :
vs. : Case No.
THOMAS DARDEN, ET AL., : 1:16-CV-21199-CMA
Defendants. :

CONFIDENTIAL VIDEOTAPED DEPOSITION OF
RICK A. SMITH, P.E.

February 27, 2017
8:51 a.m.
VERITEXT LEGAL COURT REPORTING
41 South High Street
Suite 210
Columbus, OH 43215

Reported by: Tracy J. Schell

EXHIBIT "D"

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APPEARANCES

ON BEHALF OF THE PLAINTIFFS:

John W. Annesser
PERLMAN, BAJANDAS, YEVOLI & ALBRIGHT, P.L.
283 Catalonia Avenue
Suite 200
Coral Gables, FL 33134
jannesser@pbyalaw.com
305.377.0086

ON BEHALF OF THE DEFENDANTS:

Christopher M. Lomax
JONES DAY
600 Brickell Avenue
Suite 3300
Miami, FL 33131
clomax@jonesday.com
305.714.9700

- - -

ALSO PRESENT:

Richard D. Stevens, Videographer

- - -

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Monday Morning Session

February 27, 2017

8:51 a.m.

- - -

STIPULATIONS

- - -

It is stipulated by and between counsel for the respective parties herein that this deposition of RICK A. SMITH, P.E., a Witness herein, called by the Plaintiffs under the statute, may be taken at this time and reduced to writing in stenotypy by the Notary, whose notes may thereafter be transcribed out of the presence of the witness; and that proof of the official character and qualifications of the Notary is waived.

- - -

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- - -

WITNESS	PAGE
RICK A. SMITH, P.E.	
BY MR. ANNESSER:	7

- - -

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1 THE VIDEOGRAPHER: We're on the record.
2 Please note -- notice that the microphones are
3 sensitive and may pick up whispering and private
4 conversations. Please turn off all cell phones and
5 place them away from the microphones as they can
6 interfere with the deposition audio. Recording will
7 continue until all parties agree to go off the record.

8 My name is Richard D. Stevens, representing
9 Veritext. The date today is February 27, 2017. The
10 time is approximately 0851.

11 This deposition is being held at Veritext,
12 located at 41 South High Street, Suite 210, Columbus,
13 Ohio 43215. It's being taken by counsel for the
14 plaintiff. The caption of this case is Andrea Rossi,
15 et al. versus Thomas Darden, et al. This case is being
16 held in the United States District Court, Southern
17 District of Florida, Case No. 1:16-CV-21199. The name
18 of the witness is Rick A. Smith, P.E.

19 At this time, the attorneys present in the
20 room will identify themselves and the parties they
21 represent.

22 MR. ANNESSER: John Annesser on behalf of the
23 plaintiffs, Dr. Andrea Rossi and Leonardo Corporation.

24 MR. LOMAX: Christopher Lomax on behalf of
25 the defendants, Thomas Darden, John T. Vaughn, Cherokee

1 Investment Partners, LLC, Industrial Heat and IPH
2 International BV.

3 THE VIDEOGRAPHER: Our court reporter, Tracy
4 J. Schell, representing Veritext, will swear in the
5 witness and we can proceed.

6 - - -

7 P R O C E E D I N G S

8 - - -

9 RICK A. SMITH, P.E.

10 being by me first duly sworn, as hereinafter certified,
11 testifies and says as follows:

12 EXAMINATION

13 BY MR. ANNESSER:

14 Q. Good morning, sir. As I just said, my name
15 is John Annesser, and I represent the plaintiffs in
16 this matter.

17 Can I ask you to please state your full name
18 for the record?

19 A. Yes. It's Rick, R-I-C-K, A. Smith,
20 S-M-I-T-H.

21 Q. What does the A stand for?

22 A. A.

23 Q. Just A?

24 A. That's it.

25 Q. No middle name?

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1 A. No, sir.

2 Q. What is your home address, please?

3 A. 7400 Brown Road, Ostrander,
4 O-S-T-R-A-N-D-E-R, Ohio 43061.

5 Q. And your business address, sir?

6 A. Is the same, second floor.

7 Q. You work out of your home?

8 A. I do.

9 Q. Okay. Who's your current employer?

10 A. Applied Thermal Engineering, Inc.

11 - - -

12 (Deposition Exhibit 1 marked.)

13 - - -

14 Q. Sir, I'm going to show you what I have marked
15 as Exhibit 1. I apologize, I don't have any copies, so
16 I'll hand that to counsel first.

17 Sir, have you seen this document before?

18 A. Yes, I have. Hold on one second. Yeah, it
19 looks like the subpoena for my appearance here today.

20 Q. Okay.

21 A. Yes, sir.

22 Q. And have you reviewed that document prior to
23 today?

24 A. Yes, sir.

25 Q. That document requests you bring certain

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1 documents with you.

2 Have you brought those with you today?

3 A. I have.

4 Q. Now, specifically within Exhibit 1 -- let me
5 ask it this way: Are there any documents identified in
6 Exhibit 1 that you did not bring with you today?

7 A. I went through this a couple times, and to
8 the best of my knowledge, I think I'm in full
9 compliance with this. I mean, I may have inadvertently
10 left something off, but I did try to be 100 percent
11 compliant with it, sir.

12 Q. Did you instruct anyone to prepare objections
13 on your behalf to the requests contained within Exhibit
14 1?

15 A. No.

16 Q. So you're unaware of any objections that have
17 been asserted on your behalf?

18 A. No, sir, I'm not. I am unaware, that's
19 correct.

20 - - -

21 (Deposition Exhibit 2 marked.)

22 - - -

23 Q. I'm going to show you, sir, what I will mark
24 as Exhibit Number 2.

25 Have you seen this document before, sir?

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1 A. Not until just now, no, sir.

2 Q. Okay. I'm not going to ask you to read the
3 whole thing.

4 A. Thank you.

5 Q. But I will ask you, has anyone instructed you
6 to bring certain documents pursuant to any objections
7 that have been made?

8 A. No, sir.

9 Q. Okay. Thank you.

10 Have you ever had your deposition taken
11 before, sir?

12 A. Yes, sir, I have.

13 Q. How many times?

14 A. Six.

15 Q. And on what occasions were your deposition
16 taken? Well, let me ask you this way: Within the last
17 ten years, how many times have you been deposed?

18 A. Well, if I may, what I've done is in
19 anticipating these questions, I've come up with kind of
20 a cheat sheet, if you will, just a summary of what I've
21 done, if that would be helpful in expediting things.

22 Q. Okay.

23 A. I will give you one first. I brought a whole
24 lot of copies not knowing how many attorneys would be
25 here.

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1 So in the last ten years, I don't know. In
2 total, I've had 21 depositions. Today will be number
3 22.

4 Q. Okay. So you've testified. Is that in
5 court?

6 A. You said testimony. Yes, sir, six times,
7 correct.

8 Q. So it says down at the bottom, total ATE
9 engagements?

10 A. Yeah, that's the total -- the number of jobs
11 I've had since I started in the business.

12 - - -

13 (Deposition Exhibit 3 marked.)

14 - - -

15 Q. Okay. Well, let me ask you about that. I'm
16 going to mark this document as Exhibit 3 for the
17 record.

18 Do you have a copy in front of you, sir?

19 A. I do, yes.

20 Q. Okay. I'd like to mark the one that you're
21 referring to --

22 A. Absolutely. I'll give you the original.

23 Q. -- just to keep the record straight. Thank
24 you.

25 So you have testified in court six times?

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1 A. Correct.

2 Q. When is the last time you gave testimony in
3 court?

4 A. Okay. Hold that thought for a moment. Let's
5 see here. Unfortunately, I'm looking now at my
6 databases, I've neglected to update some of the
7 testimony dates, but I believe -- I believe it was two
8 years ago -- I'm sorry. Here we go. Yeah, okay, I see
9 what I did. Never mind. Hold that thought for a
10 moment.

11 Okay. That would be on the 25th of October,
12 2013.

13 Q. That's the last time you gave courtroom
14 testimony?

15 A. Yes, sir.

16 Q. Okay. When was the last time you gave
17 deposition testimony?

18 A. Okay.

19 Q. You can tell me roughly. I don't need the
20 exact date.

21 A. I think it was about -- I think it was about
22 the same time frame. I believe you only requested the
23 last four years for this, at least that's what I was
24 told.

25 Oh, I'm sorry, my last dep, no, my bad, it

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1 was April 30, 2015. It actually was in this building,
2 but not here.

3 Q. 2015?

4 A. Yes, sir. Yeah.

5 Q. What was the nature of that case?

6 A. That was a boiler case. The title of it was
7 Young versus FirstEnergy. And a gentleman was working
8 inside a large deaerator in a power plant up in
9 Conesville, Ohio, and some hot water burped into the
10 tank when he was working in it, aggravated a medical
11 condition he had.

12 So the issue was, was this vessel properly
13 isolated for people to be working inside it.

14 Q. Does that -- does the subject matter of your
15 testimony in that case have anything to do with your
16 testimony in this case; are there similarities that you
17 would draw to?

18 A. No.

19 Q. Sir, have you ever been found by a court of
20 competent jurisdiction to be an expert?

21 A. Yes.

22 Q. And what court is that?

23 A. Well, obviously the courts where I've
24 testified. Let's see, one in Alaska; Delaware, Ohio.
25 Let's see, one was in Akron.

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1 Q. Is that Delaware and Ohio?

2 A. No. The City of Delaware, Ohio. About 20
3 miles due north of here. Go straight up High Street.

4 Let's see, Fairbanks, Alaska, I mentioned
5 that. Saskatoon, Canada. And I'm drawing a blank on
6 the other ones.

7 But I have been qualified as an expert in
8 several jurisdictions, yes, sir.

9 Q. Have you ever been qualified as an expert in
10 the federal court?

11 A. This is the first -- this is the first time,
12 I believe, in a federal issue like this, yes.

13 Q. Now, have you ever been offered as an expert
14 in a federal court before?

15 A. Not that I recall, no, sir.

16 Q. Sir, were you ever offered as an expert in a
17 case titled Bowe, B-O-W-E v. Conrail.

18 A. Yes, I was.

19 Q. Okay. And that was --

20 A. Mr. Hackman.

21 Q. Were you offered as an expert in that case?

22 A. I was.

23 Q. Sir, isn't it true that you were denied as an
24 expert by the court pursuant to the Daubert standard?

25 A. I was not aware of that up until now. I know

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1 there were some issues with that case that I found out
2 in questioning in other depositions. I did not know
3 that I was Dauberted in that case. So, no, that's news
4 to me.

5 Q. Did you ever testify in that case, sir?

6 A. I did give a deposition, yes, I did, but I
7 did not testify in court.

8 Q. And you never asked why?

9 A. No.

10 Q. Are there any other courts, sir, that have
11 found that you did not satisfy the Daubert standards or
12 any other expert standard --

13 A. I do have a --

14 MR. LOMAX: Objection to the form of the
15 question.

16 Q. -- that you're aware about?

17 A. I did have a Daubert challenge in a case in
18 Oklahoma City. And my understanding is the challenge
19 was that the attorney that I was working for did not
20 give me enough information to make a proper judgment.

21 And interesting -- oh, I'm sorry, go ahead.

22 Q. I'm sorry. What was the name of that case?

23 A. Oh, I don't remember, but it was in Oklahoma
24 City.

25 Q. When was it, sir?

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1 A. Seven years ago time frame.

2 Q. Is there any way that I could find that
3 information?

4 A. Yeah. The -- I'm pretty sure the attorney
5 that did the Daubert challenge was a guy named Steve
6 McLaughlin. He's in White Plains, New York. I forget
7 the name of the firm. But I've actually worked for him
8 on occasion, too, so -- but I forget the name of his
9 firm. It was kind of hard names to remember.

10 Q. Is there a reason that case was not disclosed
11 as part of your expert witness report?

12 A. I don't follow your question.

13 Q. Is there a reason you did not disclose that
14 as a case in which you --

15 A. Outside the time frame.

16 Q. What time frame?

17 A. I understand I had a four-year window of
18 disclosure.

19 Q. Who gave you that understanding?

20 A. In looking through the -- well, maybe it was
21 Ms. Handleman [sic] who said they're looking for the
22 last four years. And I think in looking through the
23 subpoena, it might have been the last six. It might
24 have been Tim, but I tried -- I did try to comply with
25 the subpoena.

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1 Q. And are you aware, sir, that in that case,
2 you were not accepted under the Daubert standard as an
3 expert witness?

4 A. No, I'm not aware of that either. This is
5 news to me this morning.

6 Q. Are there any other cases, sir, which
7 you've --

8 A. In fact -- in fact, I was told that I did
9 survive the Daubert challenge.

10 Q. Who told you that?

11 A. I believe it was the counselor I was working
12 for.

13 Q. Did you ever testify in that case?

14 A. In a deposition. No testimony. I believe
15 that case did settle out of court.

16 Q. Has there been any other court or arbitration
17 panel that has found that you did not satisfy the
18 standards either pursuant to Daubert or any other
19 standard that you're aware about for expert witnesses?

20 A. Not that I'm aware of.

21 Q. How many times, sir, have you been retained
22 as an expert witness?

23 A. Roughly 85. I'm sorry. 82. My bad. 82.

24 Q. How long have you been working with the legal
25 industry as an expert?

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1 A. Since the 1989, 1990 time frame.

2 Q. Sir, I'd like to ask you about your current
3 employment.

4 You said you were with Applied Thermal
5 Engineering, Inc.?

6 A. Correct.

7 Q. Okay. Who owns that company?

8 A. I do.

9 Q. How many employees does Applied Thermal
10 Engineering, Inc., have?

11 A. Two.

12 Q. Who are the employees?

13 A. Myself and my wife.

14 Q. Is your wife a licensed engineer?

15 A. No. She does -- she handles a lot of the
16 administrative work, marketing, sales, the insurance,
17 all the administrative stuff.

18 Q. What is the nature of the business of Applied
19 Thermal Engineering, Inc.?

20 A. It is an engineering consulting business.

21 Q. And what does the company do under the --
22 under the heading of engineering consultant?

23 A. We're primarily a power plant and utility,
24 industrial power plants, industrial utilities. And
25 when I'm doing consulting work, I do some design --

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1 assist other engineering companies with design work.
2 Obviously I do expert witness work. I do a fair amount
3 of teaching. I do boiler and steam system surveys.
4 And then I do P.E. certifications for boilers, hot oil
5 boilers that go on vessels that the Coast Guard has to
6 certify.

7 Q. What percentage of the work done by Applied
8 Thermal Engineering, Inc., relates to expert testimony
9 in lawsuits or other cases within the legal practice?

10 A. If you do the math, 82 in the 427 is about
11 one-fifth numerically.

12 Q. Now, that's since the inception of Applied
13 Thermal Engineering?

14 A. Yes, sir.

15 Q. Okay. Do you mind if I call it ATE just for
16 short?

17 A. Please do.

18 Q. Okay. What about within the last year? In
19 the last year, what percentage of your work has been in
20 relation to expert --

21 A. Very little. Last year was one of the worst
22 years I've had. I think I only had one case come in at
23 the very beginning of the year. I doubt if it's going
24 to go anywhere. I did a site visit in Fort Wayne and
25 talked to the attorney sometime in the fall and she

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1 doesn't think it's going to go anywhere, so that was
2 it.

3 And now this year, though, the phone started
4 ringing. I picked up this case obviously late last
5 year. Well, I've signed the documents early this year.
6 And I've got what? I've got two pending and then
7 another one. So I think I've picked up like four,
8 maybe five cases already this year.

9 So it's very, very sporadic. Some years,
10 very, very little. Other years, a lot.

11 Q. Okay. So of your work this year, being 2017,
12 what percentage of your work is relating to you giving
13 expert testimony?

14 A. Right now I'd say it's in the three-quarters
15 to 80 percent range right now.

16 Q. What percentage of your work is relating this
17 year to boiler surveys?

18 A. Nothing yet.

19 Q. Okay. And what percentage of your work this
20 year is assisting with design work for other
21 engineering firms?

22 A. Most of the balance. I have an ongoing
23 project in Texas, and there's another one coming up in
24 Texas that will start later in the week, so that's most
25 of the balance.

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1 Q. Okay. And what about the percentage of your
2 work this year that deals with P.E. certifications?

3 A. Oh, that now, let's see, I've done two this
4 year, so I don't know what the percentage would be. I
5 finished one. I've got one on my desk that I need to
6 do tomorrow.

7 Q. What percentage of your income is derived
8 from -- this year, from the work that you've done as an
9 expert witness?

10 A. Well, I -- actually zero, because I haven't
11 done any invoicing this year at all yet, so -- and that
12 number, the income number is also as sporadic as the
13 number of actual engagements.

14 Q. Is there a reason you haven't invoiced yet?

15 A. Just haven't gotten to it. I've been very,
16 very busy.

17 Q. Doesn't your wife do those things for you?

18 A. No. I do the invoicing. She and I have
19 different standards on math and things like that. I'm
20 a little more punctilious about it than she is. Okay,
21 a lot.

22 Q. We may have to remove that from the record.

23 Sir, have you been affiliated, prior to your
24 engagement in this case, with any of the parties to
25 this case?

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1 A. No, sir.

2 Q. Who first contacted you with respect to this
3 case?

4 A. Mr. Bell.

5 Q. And who is Mr. Bell?

6 A. Bernie Bell. He's now with Miller Friel. He
7 was with Jones Day at the time he contacted me.

8 Q. And before we get into that, what is your job
9 title and job duties at ATE?

10 A. I am the president and basically I run the
11 company. I do all the engineering, all the technical
12 work, I do the billing and the invoicing and paying the
13 bills and such, so --

14 Q. Do you report to anyone?

15 A. No.

16 Q. Other than your wife?

17 A. No, sir.

18 Q. Does anyone report to you?

19 A. She does, in a manner of speaking.

20 Q. Now, when you're working on cases other than
21 expert witness-type engagements such as the consulting
22 you do with respect to design work, what do you charge
23 your hourly rate at?

24 A. Normally I'm at 275 to -- 250 to 275 for
25 discovery work. In this case, it's 275 portal to

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1 portal. With depositions, it's 375 an hour with a
2 four-hour minimum. \$5,000 retainer. And then expenses
3 I just pass through.

4 Q. Okay. But my question was specifically other
5 than expert --

6 A. Oh, I mis- --

7 Q. -- when you act, for example, to assist other
8 engineers with design work.

9 A. Oh, my bad. I misunderstood your question.
10 With -- with it being the utilities, I bill
11 them at a hundred an hour.

12 Q. What about P.E. certifications?

13 A. That's a flat rate of a thousand dollars per
14 certification.

15 Q. How long does a certification like that take?

16 A. I've got it to the point now where I can
17 knock one out in a couple hours. I've automated it.

18 Q. What about for -- let me ask you, why such a
19 difference between \$100 an hour that you charge for
20 assisting in design work and the 250 to 275 you charge
21 for discovery or 375 for testimony?

22 A. It's just a free market system. If attorneys
23 are willing to pay that, I'm willing to charge it. If
24 I could get more, I would.

25 Q. Have you ever accepted less?

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1 A. In the earlier years, yes. You know, my
2 rates have obviously moved up with time and inflation.

3 Q. Do you have any document retention policies
4 at ATE with respect to matters in litigation in which
5 you've been approached as an expert witness?

6 A. Typically, all -- all of my documents, after
7 ten years, I discard them.

8 Q. Okay. Do you maintain the documents that you
9 receive through the course of the litigation?

10 A. No. Again, after ten years, everything goes.

11 Q. I'm asking you through the course of the
12 litigation, while the litigation is pending, do you
13 maintain all of the documents that you've received from
14 other witnesses, counsel or otherwise?

15 A. Oh, yes.

16 Q. So you brought your entire file with you
17 today?

18 A. Yes. Now, it's not the -- like the travel
19 invoices and things like that that are not germane, and
20 the technical issues, those are sitting at home in a
21 file. Other than that, everything should be here.

22 Q. Sir, are you a member of any professional
23 organizations?

24 A. I am.

25 Q. What organizations?

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1 A. ASME, American Society of Mechanical
2 Engineers, and NFPA, National Fire Protection
3 Association.

4 Q. Okay. Now, as for the ASME, what do you need
5 to do to become a member of that organization?

6 A. I think they'll let, you know, a lot of
7 people, almost anybody in as like an associate member.
8 But to be a regular member, you have to be a mechanical
9 engineer, which I am.

10 Q. So as long as you're a mechanical engineer,
11 you're given admittance as a member?

12 A. As long as you pay the money, yes.

13 Q. Of course. The world does not spin without
14 money.

15 What about the NFPA?

16 A. I'm probably an affiliate member, because
17 I -- and, again, I don't know the exact membership
18 standards. I was in a while back and then I've been
19 doing a lot of -- because of the design work, I decided
20 to rejoin so I could get current on some of the codes
21 that are applicable to what we're doing.

22 But I think it's if you're even interested in
23 fire safety, they'll let you join. So typically it's
24 like firefighters, fire marshals, engineers, code
25 officials, people that work in that -- and even

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1 electricians. The National Electrical Code is an NFPA
2 code.

3 So a long answer to a short question,
4 probably about anyone.

5 Q. Okay. Are there any tests or exams that you
6 have to undertake to become a member of either one of
7 those organizations?

8 A. No, sir.

9 Q. Are there any continuing education
10 requirements to be a member?

11 A. No.

12 Q. As long as you pay the fees, you're in good
13 standing?

14 A. That would be correct.

15 Q. Sir, I'd like to ask you a little bit about
16 your education starting with your undergraduate degree
17 from, I believe, Purdue?

18 A. Correct.

19 Q. When did you begin your undergraduate degree
20 at Purdue?

21 A. In 1972.

22 Q. And did you -- well, what was your major or
23 area of concentration?

24 A. Mechanical engineering.

25 Q. Was that your major or concentration from the

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1 very beginning?

2 A. Yes, sir.

3 Q. Did you ultimately receive a degree from
4 Purdue?

5 A. I did.

6 Q. What degree was that?

7 A. BSME, Bachelor's of Science in mechanical
8 engineering.

9 Q. Was there any area of specialization, or was
10 that a general degree?

11 A. It was a general mechanical degree.

12 Q. Okay. As part of your coursework at Purdue,
13 did you take any courses in thermodynamics?

14 A. I did.

15 Q. Okay. And what courses did you take?

16 A. Thermody- -- basic thermodynamics, one
17 semester series.

18 Q. So just one semester worth?

19 A. Yes.

20 Q. Did you take any courses on nuclear
21 engineering?

22 A. No.

23 Q. Did you take any courses on heat transfer for
24 power plants?

25 A. Yes.

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1 Q. For what courses?

2 A. I don't -- I don't remember the course
3 number, but I did take a heat transfer course. And I
4 believe as an elective, I took -- yeah, I did take a
5 power plant course also.

6 Q. Okay. The heat transfer course, what areas
7 did that course cover?

8 A. General heat transfer, convection,
9 conduction, radiation, heat exchangers.

10 Q. In your undergrad, did you receive any
11 honors, prizes or fellowships?

12 A. I did.

13 Q. Okay. What did you receive?

14 A. It's called Pi Tau Sigma, and it was based on
15 grade point averages. For a couple semesters I did
16 pretty well and became a member.

17 Q. Are you still a member of that organization?

18 A. As far as I know.

19 Q. And does that organization have any
20 continuing education or do you have any continued
21 involvement with that organization?

22 A. No, sir.

23 Q. Pi Tau Sigma, is that like a standard Greek
24 organization?

25 A. Yeah. It's mechanical engineering honorary.

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1 Q. Now, while you were in undergrad, did you do
2 any teaching work or graduate -- or, I'm sorry,
3 assistant work in undergrad? I'll ask also about
4 graduate later, but --

5 A. No.

6 Q. Okay. So you graduated in 1976.
7 What did you do then?

8 A. I went to work for -- if I can get my CV out,
9 I can give it to you. In fact, would you like the CV
10 now?

11 Q. Yes.

12 A. All righty.

13 Q. And, sir, if I can borrow your copy, we will
14 mark it as Exhibit 4 to this deposition. Thank you.

15 - - -

16 (Deposition Exhibit 4 marked.)

17 - - -

18 A. Uh-huh. So your question again, please?

19 Q. After you graduated from Purdue undergrad
20 with a BSME in 1976, what did you do after that?

21 A. I went to work for Armour-Dial in Montgomery,
22 Illinois.

23 Q. What was Armour-Dial?

24 A. They made Dial soap.

25 Q. Okay. What did you do for that company?

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1 A. I was a project engineer and then a
2 maintenance supervisor.

3 Q. Okay. Did you do anything dealing with
4 thermodynamics or heat transfer?

5 A. Generally speaking, everything I have done
6 relate -- boilers are heat exchangers, air conditioners
7 are heat exchangers, you know, regular heat -- heat
8 exchangers -- heat exchangers are heat exchangers.
9 Forgive me for being redundant. So most every -- no, I
10 shouldn't say everything I've done, but a large, large
11 percentage that I've done does involve heat exchangers.
12 That's just the nature of the business in utility work.

13 Q. And specifically, what was your
14 responsibility with respect to heat exchangers in that
15 position?

16 A. Again, it's been so long, I don't recall
17 specifically, but, you know, working with plant
18 equipment, which do involve heat exchange.

19 I do remember one project. I don't know if
20 it was ever resolved. But we were trying to heat up
21 soap with steam. And for some reason, the heat
22 exchanger was plugging and fouling too much. And I got
23 a little bit involved with that, and then it got moved
24 over to another area. So I did -- that was
25 specifically with a shell and tube heat exchanger.

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1 Q. Was there anything during your course of
2 employment at Armour-Dial that relates to or is similar
3 to the matters at issue in this case?

4 A. Well, it was -- and, again, in the general
5 area of heat exchange, yeah, because, you know, we're
6 talking -- we're going to be talking about heat
7 exchangers today. You know, boilers are -- again,
8 boilers are heat exchangers, so yeah.

9 Q. So only to the extent that you consider them
10 both heat exchangers, that you worked with heat
11 exchangers in that position with Armour-Dial and you
12 believe that the issues in this case pertain to a heat
13 exchanger?

14 A. Heat -- did you say a or -- you know, you
15 said a heat exchanger or not -- I guess I'm not -- help
16 me out. I'm not following your question exactly.

17 Q. Well, let me -- let me make it very clear and
18 simple for you.

19 I want to know whether you plan on testifying
20 that any of your work at Armour-Dial directly pertained
21 to the type of work that you were doing in this case.

22 A. I would say yes.

23 Q. Okay. And what specifically pertained --
24 pertains to the work in this case that you've done?

25 A. Well, working with a heat exchanger at

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1 Armour-Dial and working with their heat exchangers in
2 the boilers, chillers, that type of equipment.

3 Q. What were your job duties and
4 responsibilities with respect to working with the heat
5 exchanger?

6 A. I thought I just told you.

7 Q. Well, you said that you had worked on one
8 project where they were trying to heat up soap --

9 A. Uh-huh.

10 Q. -- and there was an issue with the heat
11 exchanger?

12 A. Right.

13 Q. What was your specific job duty or
14 responsibility with respect to that project?

15 A. I was doing the investigation.

16 Q. What did you do to perform that
17 investigation?

18 A. It's been almost 40 years. I don't remember
19 exactly.

20 Q. Okay. So you're not relying upon the work
21 that you did in that position to formulate your
22 opinions that you've given in this case?

23 A. Not true. That's part of my knowledge base.
24 Even though I don't remember the specifics, it's part
25 of my accumulating knowledge base. So, yeah, I do

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1 consider it relevant.

2 Q. Okay. So my question is, what did you learn
3 in that position or what did you do in that position
4 that you have applied in this case?

5 MR. LOMAX: Objection to the form of the
6 question.

7 Q. What -- what knowledge did you obtain there
8 in that position that you have now used and applied to
9 your opinions and findings in this case?

10 A. Well, on the -- on the basic design of a
11 proper heat exchanger, the basic construction of a
12 proper steam heat exchanger.

13 Q. But you can't give me specifics?

14 A. Isn't that specific enough?

15 Q. Not for me.

16 A. Sorry.

17 Q. Okay. Sir, after that, I believe your resume
18 says that you left that position in July 1977?

19 A. Correct.

20 Q. What did you do next?

21 A. I went to work for -- went back to Purdue,
22 worked for the planning and engineering department. I
23 had worked there as a student, and then I went back as
24 an engineer. And then I was a project engineer mostly
25 working on, like it says, retrofit heating,

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1 ventilating, air-conditioning systems on campus.

2 Q. Did that position involve working with any
3 type of power generation plants?

4 A. I worked a little bit in the power plants.
5 In fact, I was slotted to become the superintendent of
6 the power plant.

7 Q. Did you ever become the superintendent of the
8 power plant?

9 A. No, sir, I did not.

10 Q. Okay. And, sir, you said you worked a little
11 bit with the power plant.

12 What kind of power plant was that?

13 A. It was a coal-fired heating power plant. I
14 can't recall if we did any electricity generation, but
15 it was definitely a heating plant for the -- most of
16 the entire campus.

17 Q. What was your job duties and responsibilities
18 with respect to that plant?

19 A. Pretty much just starting to learn since I
20 hadn't been out of school that long, starting to, you
21 know, work with them and, you know, get more into the
22 details of it and understand how a power plant works.

23 Q. Let me skip ahead and then we're going to
24 come back to the rest of your employment.

25 Did you ever go back to school for a

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1 postgraduate degree?

2 A. I did.

3 Q. Okay. And where was that?

4 A. The Ohio State University.

5 Q. And what degree did you go back for?

6 A. It's called mechanical engineer.

7 Q. And, sir, it says here on your resume that
8 it's a mechanical engineering professional degree?

9 A. Correct.

10 Q. What does that mean?

11 A. It's basically a nonthesis master's. I did a
12 project instead of writing a thesis. And it's more of
13 a -- instead of being like an academic track degree,
14 it's more of a working engineer track degree.

15 Q. Okay. And is that considered a master's
16 degree?

17 A. They couldn't bring themselves to call it
18 that, but yes, it is.

19 Q. Well, who couldn't bring themselves to call
20 it that?

21 A. The Ohio State University.

22 Q. Do they recognize it, The Ohio State
23 University, does The Ohio State University recognize
24 that degree as a master's degree today?

25 A. I'm not sure they even award it. To the best

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1 of my knowledge, there was only 17 people, including
2 myself, that got that degree. I think they have gone
3 back -- more back towards a traditional research
4 oriented master's degree.

5 Q. But as far as you're aware, they do not
6 recognize it as a master's degree?

7 A. Not per se or they'd call it a master's
8 degree.

9 Q. And how long were you enrolled in that
10 program?

11 A. I think it took three years, give or take,
12 part time. I was working at the time.

13 Q. Was it like night school or --

14 A. No. Actually, since I was working on campus,
15 I was working at the university, so I just made an
16 arrangement I could go over -- the ME building was only
17 a couple hundred yards from the power plant, so I'd
18 just go take classes and then adjust my work hours
19 accordingly.

20 Q. Okay. And when were you awarded your
21 professional degree?

22 A. 1988.

23 Q. And for that degree, you did not have to
24 write any thesis or dissertation?

25 A. Correct.

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1 Q. In that degree, did you take any courses in
2 thermodynamics?

3 A. I don't believe I did.

4 Q. Okay. Any courses in nuclear engineering in
5 that degree?

6 A. No.

7 Q. Any courses in heat transfer?

8 A. I don't think so.

9 Q. What was your focus or what was the focus of
10 your coursework for your professional degree?

11 A. It was to round out my -- my education. I
12 knew that I was never going to become a professor, I
13 was going to be a working engineer. So I tried to
14 structure it to take the courses that I would like to
15 have taken when I was getting my bachelor's and didn't
16 have time. So refractories was one course, welding,
17 you know, some of the more -- some of the other courses
18 just to round out my knowledge base.

19 And then as part of that, instead of writing
20 a thesis, we had to do a project write-up for a project
21 we were doing at work, so I did -- that was kind of
22 a -- what they would consider the equivalent of a
23 thesis, we were doing a project and then writing it up.

24 Q. And what was your project?

25 A. I put in -- we put in a coal-fired boiler

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1 when I was there. Excuse me. This was after the Arab
2 oil embargo, so the university decided to put in a
3 coal-fired boiler. And as part of that, we decided to
4 have -- you know, we would upgrade the pressure level
5 of the boiler at not a huge expense and be able to
6 cogenerate.

7 So we actually put in a 3 megawatt
8 back-pressure turbine to generate power coming off the
9 boiler. I, in addition -- instead of just generating
10 straight steam. So I was the one that did the
11 feasibility study and then I was the project manager
12 and the construction manager for that project.

13 Q. Okay. And during your coursework at Ohio
14 State, did you receive any honors, prizes or
15 fellowships?

16 A. No, sir.

17 Q. While you were taking your courses at Ohio
18 State, did you also engage as a graduate instructor or
19 take any teaching role on?

20 A. I did.

21 Q. Okay. In what capacity?

22 A. One of my professors, a fellow named Robert
23 Essenhight, was typically -- he was the person that
24 taught ME, I believe it was 625 if I've got the number
25 right. It's somewhere in here. Maybe it's not. I

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1 believe it was ME625, which is a dual level power plant
2 course. And so I taught that course in his stead. He
3 was obviously -- he was supervising it, but I taught
4 the course, did the grading and so forth.

5 Q. Were you compensated for that?

6 A. I think a couple hundred bucks.

7 Q. Other than -- and how many semesters did you
8 teach that course?

9 A. Just one. I believe it was -- I think OSU
10 was on quarters and not semesters.

11 Q. Okay. So one quarter?

12 A. Correct.

13 Q. Had you taken his course prior to being a
14 graduate assistant?

15 A. No.

16 Q. So how --

17 A. Now, I did take a -- when you say "his
18 course," I did take a combustion course from him, but
19 not the power plant course. I believe that was only
20 offered every other year.

21 Q. Okay. So had you taken the power plant
22 course that you ultimately were a graduate assistant
23 for prior to --

24 A. I took the similar course when I was at
25 Purdue. I believe that was ME425, if I recall. So it

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1 was basically the same course at Purdue that I had
2 taken several years earlier that I was then teaching at
3 OSU.

4 Q. Do you know why you were selected as a
5 graduate assistant by Mr. -- I'm sorry, I've lost his
6 name.

7 A. Dr. Essenhight?

8 Q. Dr. Essenhight.

9 A. Yeah. Because he liked me and I was one of
10 his -- he was one of my graduate -- what's the word I
11 want -- advisors, and he knew I would do a good job
12 teaching the course, and I did.

13 Q. Other than being a graduate assistant in that
14 one quarter, have you taught any other professional
15 courses or continuing education?

16 A. I have.

17 Q. And what courses have you taught?

18 A. The courses that I teach now are, I would
19 call them boilers 101, air conditioning 101, pumps 101.
20 They are courses -- I teach for several companies.
21 It's listed in the back of my CV. American -- it's now
22 TPC Trainco, National Technology Transfer, Lewellyn
23 I've taught for, Versa-Tech, and then I teach my own
24 courses.

25 So I looked the other day. You know, over

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1 the last what, since 1995-ish, I've taught a little
2 over 200 courses.

3 Q. What are the subject matter of those courses?

4 A. Basic -- now, are you referring to boilers?
5 Do you want to stick to boilers, or the other stuff,
6 too?

7 Q. Well, I'd like to know generally the subject
8 matters.

9 A. Okay. Sure.

10 Q. I assume -- if you can give it to me
11 generally, then there may be areas that I focus in on,
12 will ask further questions. But if you can tell me
13 generally what the courses have covered.

14 A. Sure. In the boiler course -- in both the
15 boiler and the air-conditioning courses, we talk about
16 some basic thermodynamics. In the air conditioning
17 courses, I go into it very, very deeply.

18 In the boiler courses, not quite as much. We
19 talk about safety in the boiler system. We talk about
20 the burner management system. We talk about the fire
21 side, we talk about the water side. We talk about
22 superheat. I mentioned safety. That's it off the top
23 of my head. If I think of anything else, I'll --

24 Q. Okay. Of the courses you've taught, are
25 there any that you would -- that you would find to be

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1 applicable to the matters and issues in this particular
2 case?

3 A. Yes.

4 Q. Which courses are those?

5 A. All of them.

6 Q. Okay. Even the AC courses?

7 A. Oh, absolutely.

8 Q. Okay. Even the safety courses?

9 A. Absolutely.

10 Q. How are the safety courses relative to the
11 matters at issue in this case?

12 A. Well, in the air-conditioning business,
13 safety -- safety is always an issue in the industrial
14 world. Okay. But a boiler of any kind is actually a
15 ticking time bomb. And a boiler -- as anybody knows,
16 with boilers, there's lots of hazards involved. All
17 right. And so I am always cognizant when I'm working
18 around boilers of boiler safety. And I'm kind of
19 anticipating where you'll be going with questioning
20 through the day. You know, the -- I will call it the
21 E-Cat, the device, you know, however we agree to
22 describe it, is, in one sense, a boiler.

23 And so boiler safety issues, in my
24 professional opinion, are very, very relevant to the
25 discussion.

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1 Q. Do you -- do you have any printed materials
2 from these courses that you've offered?

3 A. Not with me. You can -- you can find them.
4 You can get a syllabus if you go to the appropriate
5 websites. You can kind of get a --

6 Q. What websites?

7 A. Well, one would be like for -- I can give you
8 the company name. TPC Trainco is one. NTT, National
9 Technology Transfer. And they're both on the south
10 side of Denver. I'm not so sure about Lewellyn. I
11 haven't taught with them for a while. But they're --
12 the general courses are quite similar because they're
13 competing companies.

14 So basically, the boiler class is basically a
15 two, two and a half day boilers 101. Okay. I teach
16 courses on -- I teach for the State of Arkansas in
17 preparation for their people taking the licensing exam.
18 I've got a contract with Arkansas.

19 So, again, the subject matter, regardless of
20 who's teaching it, is pretty much the same body of
21 knowledge, just different slide shows, a little
22 different arrangement, but the body of knowledge is
23 virtually identical.

24 Q. Do you maintain any professional licenses?

25 A. Yes, sir, I do.

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1 Q. What licenses?

2 A. All right. I have a P.E. from the State of
3 Ohio. I have a P.E. from the State of Illinois. I
4 have a P.E. from the State of Texas. And I have an
5 Ohio 3rd class stationary engineer's license. I also
6 have an EPA 608 universal technician certification.

7 Q. I'm sorry, the last two were Ohio 3rd
8 class --

9 A. Stationary engineer.

10 Q. And then the last one?

11 A. EPA 608 universal technician.

12 Q. Okay. For your P.E. -- professional
13 engineer; is that correct?

14 A. Yes.

15 Q. -- from Ohio, did you have to take an exam
16 for that?

17 A. I did.

18 Q. Okay. How many times did you take that exam?

19 A. One. I crushed it.

20 Q. How about the P.E. from Illinois?

21 A. No exam. Once you have -- once you have a
22 P.E. -- generally, in this country, once you have a
23 P.E. by exam, then it's just a matter of money. You've
24 got to provide the documentation of your experience,
25 your degrees and so forth, but then it's always about

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1 the money.

2 Q. Okay. So there was no further education or
3 training or testing that you had to undergo through --
4 to get your P.E. from Illinois?

5 A. No, sir.

6 Q. What about Texas?

7 A. Texas did have an ethics -- they do have an
8 ethics exam.

9 Q. An ethics exam?

10 A. Yes, sir.

11 Q. Anything relating to the actual engineering
12 work?

13 A. No. It was about engineering ethics,
14 conflict of interest, things like that.

15 Q. Okay. The Ohio 3rd class stationary exam --

16 A. Yeah, correct.

17 Q. -- what is that?

18 A. That means I can legally operate any
19 nonnuclear boiler in the State of Ohio.

20 Q. Nonnuclear boiler?

21 A. Yep.

22 Q. Is there such thing as a nuclear boiler?

23 A. I think there's a few units in Ohio, yes.

24 Q. And that's not the same as a power plant,
25 correct?

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1 A. Oh, yeah, it is. Yeah. Now, maybe I'm --
2 help me with your question. I'm sorry.

3 Q. Okay. A boiler is the same thing as a power
4 plant?

5 A. A boiler is a component of a power plant.

6 Q. Okay. So you can't operate a power plant,
7 you can operate the boiler?

8 A. I can operate the boilers and the turbines.

9 Q. Have you ever done that?

10 A. I have at Ohio State a little bit. Again, it
11 was a union shop, so, you know, wink, wink, nod, nod.
12 And I had to have some operating time to get that
13 license, obviously.

14 And then I've operated boilers at Nestle's up
15 in Marysville. I was a relief boiler and refrigeration
16 operator up there as well.

17 Q. Okay. Let me ask you first about Ohio State.

18 A. Sure.

19 Q. How much time did you have operating a power
20 plant at Ohio State?

21 A. I think the -- I think it's 900 hours. As I
22 recall, it was 900 hours.

23 Q. And is that between July 1977 and May 1979?

24 A. No. No.

25 Q. When did you --

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1 A. That was --

2 Q. Okay. I'm sorry. Was that between 1983 and
3 1988?

4 A. Correct.

5 Q. You said Nestle's?

6 A. Nestle's in Marysville, yes.

7 Q. How much time -- and what type of power plant
8 did Nestle's have?

9 A. It's actually a heating and refrigeration
10 plant. There's no power generation involved there, but
11 it is a heating and refrigeration plant that I
12 operated.

13 Q. Okay. Was there power generation at Ohio
14 State?

15 A. Oh, yeah. I put in a back-pressure turbine,
16 then we also had two condensing turbines.

17 Q. What fuel source?

18 A. Coal. I think they had oil and gas as a
19 backup, but coal was the predominant on the one boiler,
20 the newer boiler. Then the older boilers used gas and
21 oil as a backup.

22 Q. Okay. The EPA 608 universal technician, what
23 is that?

24 A. That means that I have passed a test and I
25 can legally purchase refrigerants.

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1 Q. Does that certification have anything to do
2 with the work that you've done in this case?

3 A. No.

4 Q. The Ohio 3rd class stationary engineer
5 certification, does that have any applicability to the
6 work that you've done in this case?

7 A. It does have some general applicability, yes.

8 Q. What did you have to do to get that
9 certification?

10 A. Well, I had to, again, demonstrate that I'd
11 operated for, I think, 900 hours, again, if my hours
12 are right, and I had to take a comprehensive exam.

13 Q. How long was the exam?

14 A. I don't think there was a time period. There
15 was an essay question back when we actually had to
16 set the slide valves on an old-fashioned pump, but I'd
17 say it took about three hours, ballpark.

18 Q. And you maintain that certification in good
19 standing?

20 A. Yes, sir.

21 Q. Do you have to do any continuing education to
22 maintain that certification?

23 A. No.

24 Q. Do you have to do -- well, do you have to pay
25 a yearly fee to maintain that certification?

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1 A. Was that a rhetorical question? Yes, sir, I
2 do.

3 Q. Who issues that certification?

4 A. The State of Ohio.

5 Q. Who issues the certification for the EPA 608
6 universal tech?

7 A. The US EPA.

8 Q. You said there was an exam for that?

9 A. Yes.

10 Q. And how long was that exam?

11 A. Again, there's no time limit. It took me
12 about an hour and a half.

13 Q. And you maintain that certification in good
14 standing?

15 A. Yeah. That's a one-time license. Once you
16 pass the test -- you know, at least for the last 20
17 years, once you have it, you have it, and that's it.

18 Q. You don't have to do anything to renew it?

19 A. No, sir.

20 Q. Do you have to do anything to renew the 3rd
21 class stationary engineering certification?

22 A. Pay them money.

23 Q. Now, when were you issued the Ohio 3rd class
24 stationary engineer certificate?

25 A. I want to say 1988.

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1 Q. Okay. What about the EPA 608?

2 A. That was about ten years ago; 2006, 2007 time
3 frame.

4 Q. Now, going back, sir, to follow through on
5 your employment, after working at Purdue University,
6 which your time there ended, I believe, in May of 1979,
7 what did you do after that?

8 A. Went to work for Alcoa. Purdue is in West
9 Lafayette, Indiana. Alcoa is in Lafayette, across the
10 river.

11 Q. Alcoa is Aluminum Company of America?

12 A. Yes, sir.

13 Q. And what was your job title at Alcoa?

14 A. Mechanical engineer.

15 Q. What were your job duties and
16 responsibilities?

17 A. Well, as you can see, I was in charge of
18 energy conservation for the plant. And then,
19 basically, I was the utility engineer over the boiler
20 house and some annealing furnaces.

21 Q. I'm sorry, you said utility engineer over a
22 boiler house?

23 A. Yeah.

24 Q. What did you do in that role?

25 A. I worked with the superintendent of the

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1 boiler plant. He did the operational end of it, I did
2 the engineering end of it, so we worked together to run
3 and operate the power plant, whether he -- it was
4 really a heating plant and not a power plant.

5 Q. What's the difference?

6 A. Well, you get into semantics. A power plant
7 specifically will generate electricity. A boiler plant
8 or heating plant may just generate steam or hot water
9 for either process or heating use. Sometimes people
10 use the terms interchangeably.

11 Q. Was that a steam plant, sir?

12 A. Yes.

13 Q. What was the steam used for?

14 A. Building heat.

15 Q. I'm sorry?

16 A. Building heat. Heating the building.

17 Q. Okay. For a moment I thought you were saying
18 building in the terms of constructing heat.

19 A. Oh, no, no.

20 Q. I was trying to figure that out. I
21 apologize.

22 A. No. No. No. No. Heating the facilities.

23 Q. Okay. And I believe on your resume, it says,
24 discovered and engineered a heat recovery project for
25 an aluminum chip dryer.

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1 A. That's correct.

2 Q. What was that?

3 A. There was a chip dryer that basically -- it's
4 an old -- it was an old -- I'm trying to remember the
5 details now. It was an old furnace that they had
6 converted. They put some conveyors in it, because in
7 that particular realm, in the aluminum extrusion
8 business, at least then, they had large, round,
9 cylindrical billets that they would machine down to a
10 certain size before they would put that into the
11 extrusion machine, kind of like plastic extrusion, and
12 then a hydraulic ram would force that aluminum through
13 a die to the desired shape.

14 So the chips that come off of that, there was
15 cutting oil, and so you don't want to put water into
16 molted aluminum, because you're going to have a very
17 bad day if you do. So the purpose of the chip dryer
18 was to heat these chips, dry the water and the cutting
19 oil off so that they're fairly hot and dry when they go
20 into the melter. We called it a toilet bowl melter.
21 It was actually a -- almost like a toilet flushing, a
22 circular motion with a molten aluminum in it. And then
23 those chips would be fed in, they would be remelted and
24 then realloyed.

25 So what I did is I discovered a way to put a

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1 -- rather than -- it was a big open -- the furnace was
2 actually about the size of this room with a couple
3 conveyors. And I think I discovered a way to put a
4 cover over the conveyors and then take that heat and
5 use it to preheat the chips, as I recall.

6 Q. Now, the boiler in that plant, do you
7 remember how much heat it would put up?

8 A. I do not. And actually, there were three
9 boilers at that plant, not just one. They were large,
10 though. I would say between the three of them, they
11 were probably each 100,000 pounds an hour of steam.

12 Q. 100,000 pounds per hour. Wow. And there
13 were three of them each at that level, so 300,000
14 pounds per hour?

15 A. Yes, sir, total, yeah.

16 Now, typically we'd only run two. You have a
17 backup so that if one goes down in the dead of winter,
18 you've still got a backup running. So typically the
19 steam loads -- maximum steam load would be 150,000,
20 200,000 pounds an hour-ish. And then you've always got
21 the other one either sitting there or on hot standby so
22 that if one of the other boilers quits or has a
23 problem, we can bring the hot one up and keep the plant
24 warm.

25 Q. Okay. And how large was that facility?

1 A. I don't follow you.

2 Q. The building, how large was the building
3 where these --

4 A. Which building?

5 Q. The building where these boilers were
6 located.

7 A. The boiler house proper? It was a separate
8 building from the factory. Probably 100 feet wide, 150
9 feet long and probably four stories tall, ballpark.

10 Q. Do you know the amount of energy that was put
11 out by these boilers at any given time?

12 A. Well, it would depend on the measured steam
13 load and then what steam pressure was. And they were
14 putting out saturated steam, not superheated.

15 Q. What does that mean?

16 A. Saturated steam can exist in a boiler proper.
17 And, again, we'll probably get into the minutia of this
18 later on. Saturated steam is the steam that exists at
19 a given temperature and pressure within a pressure
20 vessel. Okay. The concept also applies to air
21 conditioning.

22 Superheating vapor, and I use the term vapor
23 right now, superheated vapor is vapor that is heated
24 over and above the saturation temperature for the
25 temperature pressure conditions in the boiler.

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1 Q. Okay. What was the temperature of the steam
2 at the Alcoa plant?

3 A. I don't remember exactly, but if it was 150
4 -- and I want to say they were 150 psi boilers. So I
5 believe, if my memory serves, the saturation
6 temperature is 366 Fahrenheit.

7 Q. I'm sorry, and what pressure was that?

8 A. 150 psi. Again, don't quote me on that
9 because I don't have that memorized, but I think I'm
10 right. Pretty close.

11 Q. Okay. After your time at Alcoa, your -- now,
12 why did you leave Alcoa?

13 A. I -- a friend -- a friend who had -- I had
14 worked with at Purdue had gone down to Cummins a couple
15 years before that. And my wife's family only lives
16 about an hour -- Cummins is in Columbus, Indiana. My
17 wife's family lives about an hour from there. And so
18 this other gentleman I worked with at Purdue said, hey,
19 there's a job opening here. Do you want to come down
20 and interview for it?

21 I said, sure, why not, because -- you know,
22 Alcoa, I was learning, like I used the corporate nomad.
23 You know, they transfer you every three or four years
24 whether you wanted to or not. And I didn't really want
25 to do that for the rest of my life, having lived out of

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1 a seabag in the Marine Corps.

2 So went down to Cummins, interviewed, got the
3 job.

4 Q. What was your job title at Cummins?

5 A. I was a facilities project manager.

6 Q. What were your duties and responsibilities in
7 that position?

8 A. Again, as it says, maintenance and
9 engineering for five large building [sic]. And then
10 engineering services for an additional 25 buildings.

11 Q. Now, you state here, converted three boilers
12 to dual fuel capacity to minimize fuel costs.

13 A. I believe that's capability, but --

14 Q. I'm sorry, you're right, I misread it.

15 A. No problem.

16 Q. Did you do the conversion yourself?

17 A. I did not physically do it. I did the
18 engineering, wrote the purchase orders, wrote the
19 construction contracts.

20 Q. Did anyone else look over the engineering
21 prior to it being implemented?

22 A. No.

23 Q. Did you work on a day-to-day basis with those
24 boilers?

25 A. Sporadically. You know, it -- you know, you

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1 write a purchase order, wait three months for the stuff
2 to come in, so it's like a lot of -- I understand you
3 worked in construction, so you know the drill. You
4 order something, you wait, it comes in and you work on
5 it, you go back to it. So you bounce back and forth
6 between different jobs, you know, to fill your day up,
7 so --

8 Q. Did you have staff that worked under you?

9 A. I did.

10 Q. How many people?

11 A. Was it two or three? They were maintenance
12 tech- -- or maintenance supervisors.

13 Q. So it's your testimony that you did the
14 engineering to convert the boilers to dual fuel
15 capability?

16 A. Well, we were actually converting the
17 burners. All right. It wasn't the boilers, per se.
18 We did a burner changeout.

19 Q. Now, looking on your resume to the next
20 listed employment, and it's on the first page, it says,
21 October 1983 to June of 1988, back to The Ohio State
22 University.

23 A. You got it.

24 Q. First of all, why did you leave Cummins?

25 A. I got laid off in the bloodbath of 1983.

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1 Q. Now, you returned to The Ohio State
2 University.

3 What was your -- upon returning, what was
4 your job duty -- or your job title? I'm sorry.

5 A. I started, I was an engineer. And after
6 three or four years, I got promoted to senior
7 mechanical engineer.

8 Q. Okay. So you were senior mechanical engineer
9 for only a couple years while you were there?

10 A. That would be correct, yes.

11 Q. You say you successfully managed a \$7 million
12 steam line expansion project.

13 Can you tell me about that, please?

14 A. I can. What we did is the -- back then
15 McCracken Power Plant only served that part of the
16 campus which was east of the river. I believe it's the
17 Scioto. And the midwest campus and the west campus did
18 not have steam feed. They all had remote boilers, a
19 boiler per building or two boilers per building.

20 And then down in the hospital complex, that
21 was -- even back then, it was growing, so we reinforced
22 the steam feed.

23 So what we did is like we had an outside
24 consulting engineering firm do the design to expand the
25 steam line from McCracken Power Plant across the river

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1 to the various buildings in the midwest campus, and
2 then we reinforced the feed south from McCracken to the
3 hospital complex.

4 Q. How was the steam moved in those --

5 A. Pressure differential.

6 Q. What does that mean?

7 A. You have to have a pressure difference for
8 any fluid to flow.

9 Q. So how was that accomplished?

10 A. Pressure differential.

11 Q. Was there a vacuum on one side, or was there
12 a forcing pressure on the other?

13 A. No. The steam -- the steam leaving the plant
14 was at 200 psi, and was it 5 -- I believe it was 588
15 degrees if my memory serves. So we had about 200
16 degrees of superheat leaving McCracken Power Plant.

17 Q. Again, that's Fahrenheit, correct?

18 A. Yeah. I -- we probably will go back and
19 forth on C and Fahrenheit. Normally I work in
20 Fahrenheit, but I'll try to accommodate you working
21 with centigrade and the metric system.

22 Q. I appreciate that.

23 And that was superheated steam?

24 A. Yes, sir.

25 Q. Now, you said it crossed a river --

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1 A. Correct.

2 Q. -- or river bridge.

3 Was that aboveground, belowground, under the
4 water?

5 A. A lot of -- the river crossing, per se?

6 Q. Yes.

7 A. Underneath -- we hung it underneath of a
8 pedestrian bridge.

9 Q. Okay. And what type of piping was that --

10 A. It was --

11 Q. -- or what type of --

12 A. It was called -- the company was actually
13 called at one point Nova. Yeah, it was Nova. I don't
14 believe they're in business. But it was a pipe in a
15 pipe structure. We had the steam -- the actual steam
16 carrier as the inside pipe, insulation around it, and
17 then there was an outer pipe that served as a barrier,
18 and actually there was -- between the insulation and
19 the air space to keep the heat in the steam and keep
20 the heat losses to a minimum.

21 So it's called a pipe in a pipe or a direct
22 bury system. So we actually dug up a lot of the campus
23 and buried that pipe and then backfilled back over it
24 and then ran the steam line underground.

25 So when we got to the bridge, we came up from

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1 the ground, ran it underneath the bridge and then back
2 down underground and wherever.

3 Q. Why did they have insulation between the
4 pipes? I guess I don't understand.

5 A. Okay. The pipe, it's actually a concentric
6 pipe, so the inner pipe would be the steam pipe
7 carrier. And then it would be insulated to maintain
8 the heat, because anything -- temperature flows from
9 hot to cold. So if you have 588 degree steam, it's
10 going to lose heat pretty rapidly, so you --

11 Q. Off the walls of the pipe, or where would it
12 lose --

13 A. Yeah, from -- from the pipe wall itself. An
14 outer pipe wall itself is going to -- the inner -- the
15 steam carrying line would lose heat.

16 Q. Okay. How much heat loss did you have in
17 that insulated piping per -- let's say, per foot?

18 A. Oh, I don't remember exactly. There's charts
19 and tables that could do that. Again, I don't carry
20 that knowledge around in my head. You can calculate
21 it. The manufacturers have calculated it. So if you
22 tell them what the steam conditions are, they'll say
23 you will have, you know, X number of BTUs for heat loss
24 per foot, per hundred foot, you know, whatever.

25 Q. Okay. And that heat that is lost through the

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1 pipe walls, where does it go?

2 A. Out from the -- from the pipe.

3 Q. Okay. So into the external environment
4 around where the pipe is?

5 A. Right, through the insulation. The heat goes
6 through the insulation and then the air surrounding
7 that, you know, that air will heat up, the exterior
8 pipe will heat up some, and then, like you say, the
9 surroundings will heat up until it reaches equilibrium.

10 Q. Sir, have you published any papers?

11 A. There are magazine articles, not print
12 papers, per se.

13 Q. Okay. Were they peer reviewed?

14 A. No.

15 - - -

16 (Deposition Exhibit 5 marked.)

17 - - -

18 Q. Sir, I'm going to show you one that we will
19 mark as Exhibit 5.

20 A. I have five of each for you.

21 Q. We'll use yours.

22 A. Do you want them both?

23 Q. Yes, please.

24 A. There you go.

25 Q. Thank you. We'll mark the first one, which

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1 is titled Safety on Trial, 75-Ton Bottle Rocket Case
2 Study.

3 Sir, this first document, which we've marked
4 as Exhibit 5, what is this publication on?

5 A. The publication is the National Board. And
6 it's technically the National Board of Boiler and
7 Pressure Vessel Inspectors. They're located here in
8 Columbus up on Crupper Avenue. And what I did is I
9 wrote this article and another one on a couple of cases
10 that I had worked on that related to boilers and
11 pressure vessels.

12 So just giving kind of the basics of what
13 happened and then how what happened might help boiler
14 inspectors to look at, you know, other different
15 things, maybe help them to do their job, you know, a
16 little better.

17 Q. Was it -- was that particular case regarding
18 a boiler malfunction or failure?

19 A. No. This was actually a pressure vessel
20 failure.

21 Q. Does the information contained in this
22 document pertain to or relate to the matters at issue
23 in the instant case?

24 A. Very generally, yes, because it involves
25 steam and, you know, boiler and pressure vessel

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1 technology, but maybe specifically, not real directly.

2 Q. Was there any boiler or pressure vessel
3 failure in the instant case? In the instant case, was
4 there any failure?

5 A. Oh, the bottle rocket?

6 Q. Was there any failure of a pressure vessel or
7 boiler in this case that you're here testifying on
8 today?

9 A. Not that I'm aware of.

10 - - -

11 (Deposition Exhibit 6 marked.)

12 - - -

13 Q. Sir, I'm going to show you what I've marked
14 as Exhibit 6, which is a publication called Winter
15 Storm Warning, Elementary School Boiler Malfunctioned
16 After Ice Storm.

17 A. Correct.

18 Q. And is this your second publication, sir?

19 A. Yes, sir, it is. I believe it's the second.
20 Yeah, it was the second. You're right.

21 Q. Okay. Does the -- strike that.

22 This document, sir, pertains to a boiler
23 failure as well?

24 A. It does.

25 Q. Was there any methodology or considerations

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1 that you applied in this case that are also applicable
2 to the instant case?

3 You know what, I'm sorry, let me rephrase
4 that for the record.

5 Were there any methodology or considerations
6 that you took into effect in examining this elementary
7 school boiler malfunctioning that you believe also to
8 be applicable in the instant case?

9 A. It may or it may not be. Based on the
10 documentation I've seen so far, there may be some
11 safety issues involved. As we both know, I have yet to
12 do a site inspection at the Doral facility, so, you
13 know, I do reserve the right to modify my answer based
14 on what I may or may not see later in the week.

15 Q. Have you made any safety determinations as to
16 the E-Cat or the Doral plant in this case?

17 A. Based upon -- again, based on not having
18 physically seen it, but based on what I understand
19 about the construction, I -- I have made a bit of a
20 determination, yes.

21 Q. Okay. We're going to get to that in just a
22 minute.

23 But just back to your publications real
24 quick, so neither one of your publications have been
25 peer reviewed?

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1 A. No.

2 Q. Were you compensated for these publications?

3 A. No.

4 Q. Did you rely upon any other publications or
5 any other methodologies in preparing these
6 publications?

7 A. Well, the totality of my education and
8 experience went into both of them. So, yeah, all of
9 that went into it.

10 Q. Did you reference any documents specifically
11 with respect to these publications other than your
12 general knowledge?

13 A. I don't believe I did.

14 Q. Are there any methodology -- methodologies
15 contained within this that could be contested?

16 MR. LOMAX: Objection to the form of the
17 question.

18 A. I imagine they would have been contested by
19 now, so I -- I would say no.

20 Q. Well, do you -- do you specifically refer to
21 any methodologies in your examination, or is this more
22 like a case study?

23 A. This is more like a case study. All right.
24 You know, there was no litigation -- well, in -- in the
25 winter storm warning, there was no litigation. In the

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1 bottle rocket, there was litigation. There was no
2 litigation in the school issue.

3 Q. Now, did you act as an expert in the bottle
4 rocket case?

5 A. I did.

6 Q. And what was the name of that case?

7 A. It was in Danville, Virginia. I don't
8 remember right now. It's been, golly, almost 20 years
9 ago.

10 Q. Okay. Were you --

11 A. If I think of it, I'll pop it up.

12 Q. Did you provide any testimony in that case?

13 A. Did I do a deposition there? I was deposed
14 in that one, yes.

15 Q. And when was that?

16 A. Oh, I want to say mid-'90s maybe, mid to late
17 '90s.

18 Q. Are there any similarities between the
19 factual circumstances of the bottle rocket case and the
20 instant case?

21 A. Not that I can think of right now.

22 Q. Did you have any co-authors that assisted you
23 in preparing those publications?

24 A. No.

25 Q. Did anyone ever suggest that you do

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1 additional research into those matters?

2 A. No, sir.

3 Q. Has either one of these publications ever
4 been cited, to your knowledge?

5 A. No, sir.

6 Q. Has anyone requested the right to reprint
7 these publications from you?

8 A. Not that I'm aware of. Actually, the
9 National Board holds the copyright and not me, so they
10 would be the ones to do that.

11 Q. Do you know if anyone has requested to
12 reprint them?

13 A. I do not know.

14 Q. Are you familiar with any literature
15 expressing contrary views to the views that you've
16 expressed in these two publications?

17 A. I am not familiar with any, no.

18 Q. Sir, looking back to your resume again --
19 well, I'm sorry. Strike that. I'll have you look at
20 something else.

21 Sir, you've rendered a report in this case,
22 correct?

23 A. I did.

24 - - -

25 (Deposition Exhibit 7 marked.)

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1 - - -

2 Q. I'm going to mark this document as Exhibit 7.
3 Sir, is this a copy of the expert report that
4 you have rendered in this case?

5 A. Yes.

6 Q. And if I can, could you please turn to page
7 22 of your report, the section entitled Expert Witness
8 Experience?

9 A. Okay.

10 Q. I believe you've listed four cases --

11 A. Yes.

12 Q. -- correct?

13 A. Correct, yes.

14 Q. Are those all of the cases in which you have
15 testified at trial or deposition during the last seven
16 years?

17 MR. LOMAX: Objection to the form of the
18 question.

19 MR. ANNESSER: What's the objection?

20 MR. LOMAX: It's different from what has been
21 stated in the document and what you've asked before,
22 so --

23 MR. ANNESSER: And the grounds for the
24 objection, though?

25 MR. LOMAX: Form of the question. It's

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1 misleading based on what's in the document and what
2 you've stated before.

3 BY MR. ANNESSER:

4 Q. Sir, these four cases that you've listed, are
5 those all of the cases in which you've testified either
6 at trial or in deposition during the last seven years?

7 A. No, sir. And the reason for that, I was -- I
8 was under the impression, at the time I prepared the
9 report, it was for the prior four years, which I
10 understand is federal rules. So my under- -- you know,
11 my understanding may have been complete [sic], that's
12 why I brought in the extra documentation to supplement
13 so that I would be -- you know, give you what you were
14 asking for.

15 Q. How many additional cases have you testified
16 in within the last seven years --

17 A. I think --

18 Q. -- that are not listed here?

19 A. I think it was -- now, my understanding, it
20 was six years. All right.

21 Q. I'm asking you, sir, within the last seven
22 years.

23 A. In looking -- I brought in documentations for
24 six cases. So I -- as I recall now, I think I went
25 back ten years.

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1 Q. So six cases within the last ten years total?

2 A. I -- I believe that's correct.

3 Q. And would that include the four that are
4 listed here?

5 A. Yes, sir, that's correct.

6 Q. And you said you brought that documentation?

7 A. Well, it's -- what it is -- where is it now?
8 I put it down here. Yeah, here it is.

9 What these are is Microsoft Access, like all
10 Microsoft products, has a mind of its own and it's hard
11 to write reports. So what these are is these are
12 screenshots from my own internal database just to --
13 you know, to document my jobs, you know, and just kind
14 of the basics of the jobs.

15 So these are screenshots from the -- I
16 believe it's that ten-year time window, yes.

17 Q. Okay. So what are the two additional cases
18 that are not listed on your report that you have
19 testified in within the last ten years?

20 A. Okay. That would be -- the case -- let's
21 see, the case would be -- the older one was E3 v.
22 Biothane, et al.

23 Q. E3?

24 A. Yeah, E3, echo three, versus Biothane,
25 B-I-O-T-H-A-N-E, et al. And the second one is Young

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1 versus FirstEnergy.

2 Q. Okay. Starting with the first one on your
3 list, Jerew versus Rhodes Heating --

4 A. Okay.

5 Q. -- what was the nature of your testimony in
6 that case?

7 A. All right. The case -- this was a pretty
8 simple one. It was a mobile home furnace fire. A
9 technician had serviced the furnace. And then the
10 question I was called to answer, did the technician
11 make the furnace as safe as possible after he had
12 worked on it after the owner wanted it shut down to
13 replace it.

14 Q. Okay. Were the issues in that case at all
15 related to -- I'm sorry, not related to, but were the
16 issues in that case at all similar to the issues in the
17 instant case?

18 A. No.

19 Q. The second case you have listed, Akron
20 Fairlawn Properties versus Edgell Plumbing?

21 A. Correct.

22 Q. What was the nature of your testimony in that
23 case?

24 A. Okay. This one was a premature boiler
25 failure. And the alleged cause of the failure was

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1 running a boiler with incoming water below 140, which
2 can cause corrosion and other issues inside a hot water
3 heater boiler.

4 Q. Now, let me ask you, on Jerew versus Rhodes,
5 did you testify for the plaintiff or the defendant in
6 that case?

7 A. Plaintiff.

8 Q. Okay. What about in Akron Fairlawn?

9 A. That would be plaintiff also.

10 Q. Okay. Now, the issues in the Akron Fairlawn
11 Properties case, were they in any way similar to the
12 issues in this case?

13 MR. LOMAX: Objection to the form of the
14 question.

15 A. Not really.

16 Q. Did you prepare a report in either one of
17 those cases?

18 A. Let's see here, verbal and in -- yeah. Let's
19 see, the boiler failure at a Holiday Inn, I did prepare
20 a written report.

21 Q. I'm sorry, that was the Akron Fairlawn case?

22 A. Yeah. Yeah, I'm sorry, Akron Fairlawn,
23 you're correct.

24 Q. Did you ever testify at trial in that case?

25 A. I did.

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1 Q. And did the court find you to be an expert?

2 A. As far as I know, they did.

3 Q. You don't know either way or --

4 A. Well, I testified, so I'm assuming that they
5 recognized me as an expert.

6 Q. What about the Jerew versus Rhodes Heating
7 case?

8 A. I did testify in that one also.

9 Q. Do you know if you were found to be an expert
10 in that case?

11 A. Again, as far as I know, I was.

12 Q. Were those jury cases or were those bench
13 trials?

14 A. Let's see, jury -- the Akron Fairlawn was
15 jury. And Jerew versus Rhodes, I believe that was a
16 bench trial.

17 Q. Now, the next one you have listed is Richmond
18 versus Sears Roebuck.

19 A. Yes.

20 Q. What was the nature of your testimony in that
21 case?

22 A. That was a carbon monoxide poisoning case.

23 Q. And what was the nature of your testimony?

24 A. It was a deposition and I was testifying to
25 the fact, you know, how carbon monoxide is formed, the

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1 influence of drafts and so forth on water heaters and
2 their combustion systems and how carbon -- carbon
3 monoxide is formed. I didn't -- I did not testify as a
4 medical expert, even though I understand what carbon
5 monoxide does to people. I was looking at their
6 mechanics of the formation of carbon monoxide.

7 Q. Was your test- -- well, was the subject
8 matter of your testimony in that case at all similar to
9 the facts and circumstances that you've considered in
10 the instant case?

11 A. No.

12 Q. Did you apply any similar methodology between
13 any of these three cases and the instant case?

14 A. Well, I -- there's a certain engineering
15 methodology that we use. It's not necessarily written.
16 It's just the way we're trained to approach problems,
17 look at things, analyze things. So -- so that's -- I
18 have used that general approach in almost all of my
19 work.

20 Q. So you look at the facts, you analyze them
21 and come to a conclusion based on your analysis?

22 A. Generally, yeah.

23 Q. Okay.

24 A. And, again, now, if I'm just doing an
25 analysis of something, I'm looking at numbers and so

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1 forth, but it's the same kind of general orderly
2 thought process, yes.

3 Q. Okay. And did you testify on behalf of the
4 plaintiff or defendant in that case, in Richmond versus
5 Sears Roebuck?

6 A. Plaintiff.

7 Q. Next you have listed the Young versus
8 FirstEnergy case?

9 A. Correct.

10 Q. What was the nature of your testimony in that
11 case?

12 A. That was -- again, we discussed it a little
13 bit earlier. A gentleman was working inside a very,
14 very large deaerator and some hot water, I would say
15 burped would be the appropriate word, back into it
16 causing him some severe anxiety.

17 And so the issue was, was this vessel in
18 which they were working, was it properly isolated from
19 the rest of the plant so that they could safely work in
20 that vessel.

21 Q. Okay. Were the issues that you testified to
22 in that case at all similar in any manner to the facts
23 and circumstances that you've considered in our case
24 today?

25 A. "In any manner" is a little broad. Can you

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1 tighten that up a little for me?

2 Q. Yes. Is there anything in the testimony that
3 you gave in that case that may be similar to the
4 testimony that you are providing with respect to the
5 case that we're here on today?

6 A. Nothing I can think of right now.

7 Q. Did you apply any similar calculations or
8 methodology?

9 A. I didn't do calculations, but I did look at
10 drawings and do a lot of analysis on valving and flow
11 and so forth. So from that standpoint, yes, there is a
12 correlation.

13 Q. Okay. Flow of what?

14 A. In this case, it was steam and then
15 potentially some water.

16 Q. Okay. And in that case, in the Young versus
17 FirstEnergy case?

18 A. Yes. Yeah.

19 Q. Okay. That was steam and water?

20 A. Steam and water, yeah.

21 Q. Okay. And what about the instant case?

22 A. Well, in the instant case, there's allegedly
23 steam and there's definitely water flowing.

24 Q. Okay. And what type of flow analysis did you
25 do with respect to the Young versus FirstEnergy case?

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1 A. Okay. Now, it was not a pressure drop
2 analysis, it was looking at flow routing and paths
3 through valving to see could fluid get from point A to
4 point B.

5 Q. Okay. And have you done that type of
6 analysis in the Rossi v. Darden case?

7 A. In a manner of speaking, yes, I've looked at
8 the flow paths of which I'm aware and -- yeah, I've
9 looked at the flow paths.

10 Q. Okay. For what purpose?

11 A. Well, to understand -- try to understand what
12 was going on.

13 Q. Did that -- did the Young versus FirstEnergy
14 case deal with heat dissipation at all?

15 A. When you're working with boilers and hot
16 fluids, there's always heat dissipation because --
17 because -- and, again, let me give you an example.
18 You've got a cup of coffee there or had a cup of
19 coffee. All right. And let's say it's 160, 180
20 degrees. As it sits in this room, it's going to cool
21 down. All right. And when it heats -- reaches room
22 temperature, the heat transfer will stop.

23 So anytime -- again, in my -- my business, in
24 the world in which I work, heat dissipation is pretty
25 much always occurring in some way, shape or form.

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1 Q. Okay. My question was not whether heat
2 dissipation or heat transfer was occurring.

3 My question was whether your testimony in
4 that case pertained to any heat transfer or whether you
5 did any heat transfer analysis in that case.

6 A. Now, in that, no. No. The way you phrased
7 the question now, no.

8 Q. You also mentioned another case, E3 v.
9 Biothane.

10 A. Correct.

11 Q. What was the nature of your testimony in that
12 case?

13 A. This was an ethanol plant out in eastern
14 Nebraska. And it went bankrupt and there were the two
15 large boilers that failed. And so at issue was, did
16 the failure -- were the boilers the cause of the
17 failure or were they the victims, if you will, of other
18 circumstances that caused them to fail.

19 Q. Did your testimony in that case -- first of
20 all, did you testify at trial in that case?

21 A. I did not.

22 Q. I'm sorry, I want to take a step back to the
23 Young versus FirstEnergy case.

24 Did you testify for the plaintiff or the
25 defendant?

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1 A. I was for the plaintiff.

2 Q. And in the E3V [sic] versus Biothane case,
3 were you plaintiff or defendant?

4 A. Defense.

5 Q. Now, in the E3V versus Biothane case, did you
6 do any type of heat transfer analysis in that case?

7 A. No, sir.

8 Q. Did you apply any of the same methodology
9 that you've applied in this case in that case?

10 A. Again, with the general methodology that I
11 previously described, yes.

12 Q. And by "general methodology," just your --
13 your knowledge of boilers?

14 A. Well, my knowledge of boilers and the way
15 engineers approach issues.

16 Q. Okay. Were there any calculations that you
17 performed in that case regarding heat transfer or heat
18 flow or heat dissipation?

19 A. No.

20 Q. Have you ever -- okay.

21 Now, you said there was one more case in
22 addition to those five that we've discussed within the
23 last ten years.

24 What was that last one?

25 A. No. I think we've got all -- all six of them

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1 now. The last two were the -- well, the E3 versus
2 Biothane and then Young versus FirstEnergy were the two
3 that I believe I left off of my report.

4 Q. Okay. Young versus FirstEnergy is actually
5 in your report --

6 A. Oh, is it?

7 Q. -- as number four. Yeah.

8 A. Oh, hold that thought. Okay. Oh, I did.
9 All right. I might have said six instead of five.
10 It's five and not six. My bad. I apologize.

11 Q. Okay. During the last ten years, have you
12 been retained by or worked with the Jones Day law firm?

13 A. This is the first time.

14 Q. First time. Do you know how you were found
15 in this case?

16 A. I asked Mr. Bell when he was still working
17 for Jones Day, and I believe he said to me they had --
18 knew -- somebody in Boston knew of me because I'm
19 working on some steam litigation in Boston. And the
20 person in Boston recommended me to Mr. Bell.

21 Q. Okay. You said you're working on steam
22 litigation in Boston.

23 Is that ongoing?

24 A. It is.

25 Q. Okay. Have you provided any expert report or

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1 testimony in that case?

2 A. I have.

3 Q. Okay. What is the name of that case?

4 A. That is -- did I do a report in that case? I
5 need to make some notes.

6 Can I get something to make some notes, notes
7 to self?

8 Q. Sure.

9 A. Yeah, that one --

10 Q. Do you need a piece of paper?

11 A. Yeah. That one -- oh, yeah, that one --
12 yeah, that one's -- that one's ongoing. Yes, that is E
13 -- no, Level 3 versus Veolia. I do need to -- my
14 apologies. Yeah, that one completely -- completely
15 slipped through the crack.

16 Q. Are there any other cases that you are
17 currently working on in which you have provided either
18 a report or expert testimony?

19 A. Right now, I believe that's it. But let me
20 -- let me reserve the right to check again and
21 supplement because I don't want to leave anything out.
22 So my apologies.

23 Q. With respect to the Level 3 versus Veolia,
24 who is -- I'm sorry. Where is that case pending?

25 A. It's in Boston.

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1 Q. State or federal court?

2 A. State.

3 Q. Do you know which court?

4 A. No, I don't.

5 Q. What is the subject matter of your testimony
6 in that case?

7 A. Okay. In this particular case, there are
8 steam lines running under the streets of Boston like
9 there are in Ohio state. A lot of large northern
10 cities have central steam plants with steam lines
11 running underground.

12 And the issue at hand is there is heat damage
13 to fiberoptic cables in -- hold on a second here --
14 fiberoptic cables and other telecom cables that have
15 been damaged by the heat.

16 So the litigation is/was -- was/is Veolia the
17 cause of the damage or are there other issues.

18 Q. Okay. And what analysis have you performed
19 in that case with respect to your engagement there?

20 A. I am basically -- I'm saying that, yes, level
21 -- or Veolia is responsible for the heat that's
22 damaging Level 3's cables.

23 Q. Based on what?

24 A. My analysis of the system, looking at
25 drawings, physically looking at the system, going into

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1 manholes.

2 Q. Okay. Have you performed any calculations to
3 arrive at that conclusion?

4 A. Did I do calculations? I don't think I've
5 done any calculations in that one.

6 Q. How much heat is being transferred from the
7 steam lines to the fiberoptic cables?

8 A. That's very, very difficult to determine and
9 that's one of the issues, because their expert says it
10 can be calculated and I have a different opinion
11 because there are so many variables involved, it's
12 virtually impossible to tell in that case, because
13 they're buried underground, they've been there a long
14 -- "they" being the steam lines, they're buried
15 underground, they've been there a long time, it's in a
16 big city, construction traffic, very congested
17 underground utility area.

18 So there are so many assumptions that have to
19 be made that an accurate calculation, in my opinion, is
20 virtually impossible.

21 Q. Okay. So what are you basing your opinion
22 that the steam line was the cause of the damage to the
23 fiberoptic cables? What are you basing that on?

24 A. There's nothing else underground that
25 produces heat. There are some infrared surveys that

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1 tend to buttress what I'm saying, and then the
2 construction of the system and my knowledge of steam
3 systems.

4 Q. Okay. The construction of the system, what
5 about the construction of the system lends to your
6 testimony in that case?

7 A. Say it again, please.

8 Q. Well, you said you were basing your opinion
9 on the construction of the system in part?

10 A. Yes.

11 Q. What about the construction of the system
12 have you relied upon in forming your opinion in that
13 case?

14 A. The system there is predominantly a box
15 trench where you have a steam line in a concrete trench
16 underground. And if steam -- steam leaks into the box
17 trench, that steam over time, it will -- it will
18 condense. But as the box trench heats up, the heat
19 will dissipate further and further away from the source
20 of the leak. And the steam -- steam actually will
21 travel along that box trench until it reaches an
22 obstruction so that -- the underground area is going to
23 get heated up, and then, again, that heat will
24 dissipate from the box trench to the surrounding
25 structures underground.

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1 Q. Okay. And do you know how much is -- how
2 much heat has been dissipated by that box trench?

3 A. I cannot cal- -- I mean, again, there are so
4 many variables, it's impossible to determine.

5 Q. Is it heat or steam that is being shed into
6 this box trench?

7 A. Yes.

8 Q. Both heat and steam?

9 A. Yes, sir.

10 Q. Okay. Is there a leak in the -- in the
11 piping system that allows the steam to come out?

12 A. There was.

13 Q. Have you applied any formula, analysis or
14 methodology in that case that you have similarly
15 applied in this case? And by "this case," I mean Rossi
16 versus Darden, et al.

17 A. Again, the same general methodology of
18 looking at steam systems, engineering systems and
19 analyzing the issues.

20 Q. So you've looked at the facts, you've
21 considered the variables at play and then come to
22 conclusions?

23 A. To the best of my ability, yes, sir.

24 Q. But in that case, in the --

25 A. Level 3 versus --

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1 Q. -- level 3 versus Veolia case, you did not
2 perform any type of calculation or any type of analysis
3 applying principles or methodology to come to your
4 conclusions?

5 A. I've done a qualitative analysis, not a
6 quantitative analysis.

7 Q. And in this case, would you consider your
8 analysis qualitative or quantitative?

9 A. Both. "This" being Rossi?

10 Q. Yes. Correct.

11 A. Both.

12 Q. Do you know who the attorney on the other
13 side of the Level 3 versus Veolia case is?

14 A. No, I don't.

15 Q. When were you deposed in that case?

16 A. They're upcoming. I have not -- I provided a
17 written report. I've not been deposed yet. And maybe
18 that's the confusion. Maybe there was a understanding
19 [sic]. I'm going to be deposed shortly in that case.
20 But I have provided a written report, without a doubt.
21 So maybe that was the source of my confusion.

22 Q. Did you bring a copy of that report with you
23 today?

24 A. No.

25 MR. ANNESSER: Would you agree to supply us a

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1 supplement with that copy of the report? It should
2 have been brought today.

3 MR. LOMAX: Under what request number?

4 MR. ANNESSER: I'm not going to take the
5 time. We'll go through it when we get off the record.

6 MR. LOMAX: I'm not familiar with it.

7 MR. ANNESSER: I'll -- we'll find it at the
8 next break.

9 BY MR. ANNESSER:

10 Q. Okay. Now, the case of Bowe versus
11 Conrail --

12 A. Yes.

13 Q. -- what was the subject matter of your
14 testimony in that case?

15 A. A gentleman was -- I believe he was a janitor
16 or custodian was stripping some floors in the Conrail
17 facility and apparently some of the fumes from the
18 chemicals he was using caused him some health issues.

19 Q. And your testimony was to -- was regarding
20 the alleged improper ventilation of those materials?

21 A. That's -- yeah. That's my understanding,
22 yeah.

23 Q. And you said you just learned for the first
24 time today that you were refused as an expert pursuant
25 to Daubert?

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1 A. I knew there was a Daubert challenge. I
2 found out from an attorney a while back. I did not
3 know I had been refused. So Hackman screwed me yet
4 today.

5 Q. Who's Hackman?

6 A. The attorney I was working for. He died.

7 Q. You say he screwed you yet again.

8 What was the first time?

9 A. He never paid me.

10 Q. Are there any other cases in the last four
11 years where you prepared an expert report but did not
12 end up testifying?

13 A. Again, let me -- let me look again, because I
14 think there was some confusion on my part in the
15 present time with the attorneys, so -- again, based on
16 counsel. But let me look again. And if you'll tell me
17 exactly what you want and the exact time frame --
18 again, I'm an engineer. I can read through these. I
19 was kind of depending on them to help me. Again, not
20 an excuse, but I will go through my records again,
21 subject to counsel's approval, and we'll get this
22 straightened out, if you don't mind.

23 Q. Well, I'm asking just from your memory right
24 now.

25 A. I think -- I think that's it. Okay. Again,

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1 I can't be a hundred percent certain, but I think
2 that's it.

3 Q. So there's -- there's not been other cases
4 where you prepared a report but did not testify?

5 A. Well, there's been quite a few of those, but
6 not in the last four years. Over the years there's
7 been several of those, yes, sir.

8 MR. ANNESSER: Okay. If we can, we'll take a
9 short break at this point.

10 THE VIDEOGRAPHER: We're off the record. The
11 time is 10:34.

12 (Recess taken.)

13 THE VIDEOGRAPHER: We are on the record. The
14 time is 10:49.

15 BY MR. ANNESSER:

16 Q. Sir, before we took a break, we had touched
17 briefly on your retention in this case.

18 And I believe you stated that you were first
19 contacted by Mr. Bell.

20 A. Yes, that's correct.

21 Q. What did Mr. Bell -- well, strike that.

22 What was your understanding of what Mr. Bell
23 was asking you to do in this case?

24 A. My understanding at the time was that there
25 was a steam boiler-related case in Miami area, and he

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1 had -- I had been recommended highly to him, and would
2 I be interested in helping him with the litigation.

3 Q. What did you say?

4 A. Yes. Thank you.

5 Q. Okay. And what -- what did he tell you about
6 the case? Did he --

7 A. It was just -- at the beginning, it was just
8 very, very bare bones. And now I know, because of the
9 confidentiality agreement and the intellectual property
10 and so forth, he could not and did not say much, just
11 kind of as generic as he could make it -- at least as
12 generic as I think he could make it, let me say it that
13 way.

14 Q. So what did he tell you?

15 A. You know, again, basically, you know, what I
16 just told you.

17 Q. That there was a boiler-related case and --

18 A. Boiler and steam-related case, yeah.

19 Q. Did he tell you if there were any injuries
20 relating to it?

21 A. No.

22 Q. Did he tell you what the subject matter of
23 your expert opinion was going to pertain to?

24 A. Not at that time, no.

25 Q. But you told him, hey, sounds good, let's do

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1 it?

2 A. Yes, sir, that's what I said. Well, words to
3 those effect, yeah.

4 Q. What was your next contact with anyone
5 regarding this case?

6 A. I believe it was -- and that was -- again, my
7 chronologies are always a little rough, but I believe
8 he -- he contacted me, I think it was around
9 mid-December of last year. And then, oh, within a few
10 days of the end of the year, he said, hey, I'm going to
11 be transferring over, leaving JD, going to Miller
12 Friel. I'll contact you after the turn of the year
13 after I get settled into the new firm.

14 Q. Okay. So when did he next contact you?

15 A. Oh, then it was sometime in early January,
16 and then we started the discussions in earnest.

17 Q. Okay. What were those discussions in early
18 January?

19 A. Then he started getting into a little more
20 specifics of the case, you know, a little more -- a
21 little more detail.

22 Q. What detail did he provide you?

23 Now, "early January," do you know
24 approximately the date?

25 A. I'd say early/mid, 13th/15th, depending on

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1 how you want to call it early or mid.

2 Q. Okay. So around the 13th/15th he contacted
3 you regarding this case --

4 A. Right.

5 Q. -- and provided you a little bit more detail?

6 A. Right.

7 Q. What detail did he provide you at that time?

8 A. Just the fact that there was a -- now, he
9 said that there was a device that it was allegedly
10 producing more energy than it's consuming. And there
11 are some issues about is this really -- you know, did
12 it really do that, can it really happen.

13 Q. Okay. And what did he tell you he wanted you
14 to do?

15 A. What he -- excuse me a second.

16 MR. LOMAX: I'm going to object to the extent
17 you're seeking attorney work product.

18 MR. ANNESSER: Are you going to allow him to
19 answer?

20 MR. LOMAX: Uh-huh.

21 A. He just said, we'll send you some
22 documentation, take a look at it, see what you think.
23 He did not -- he -- actually, he was pretty -- more
24 specific than most attorneys about not saying, here's
25 kind of what we want you to do. Take a look at this

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1 stuff, let us know what you think, what your opinions
2 are.

3 Q. What did he send you?

4 A. Actually, it was Mr. Lomax that then sent me
5 a couple of flash drives with pretty -- a lot of the
6 information that you have there in that whatever
7 appendix it is, those -- those types of documents.

8 Q. Okay. Looking at Exhibit 7, which I believe
9 you have somewhere here.

10 A. Oh, it's in my -- yeah, you were looking
11 for -- I think you were probably looking for 4. Yeah,
12 there's 4.

13 Are we still -- are we going to come back to
14 4?

15 Q. We may.

16 A. Okay.

17 Q. But looking at Exhibit 7 --

18 A. Yes, sir.

19 Q. -- take a look at the last two pages, which
20 are marked as Exhibit B, and this document is your
21 expert report in this case?

22 A. Yes. Okay.

23 Q. Is this a list of all of the information and
24 documents provided to you in relation to your work with
25 this case?

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1 A. It looks like it, yes.

2 Q. Now, when were you formally retained in this
3 case?

4 A. Okay. I'm having a hard time finding that
5 document right now. I know it's in this stack of stuff
6 somewhere. And I'm -- I guess for lack of a better
7 date, I'm going -- for right now I'm going to say 20
8 January of this year-ish plus or minus a couple days.
9 I know it's in here, but it's probably stuck between a
10 couple of things.

11 Q. Okay. All right. I'm going to ask you to
12 find that if you would.

13 A. Sure.

14 MR. ANNESSER: Why don't we go off the record
15 for a moment to allow you to look for that.

16 THE VIDEOGRAPHER: We're off the record. The
17 time is 10:56.

18 (Recess taken.)

19 THE VIDEOGRAPHER: We're on the record. The
20 time is 10:57.

21 BY MR. ANNESSER:

22 Q. Sir, you found the document?

23 A. I did. My apologies. Yeah. Here's --
24 here's the signed retainer agreement.

25 Q. Do you have multiple copies, sir?

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1 A. I do. How many do you need?

2 Q. I'm going to ask you for the copy you're
3 referring to so I can mark it as Exhibit 8.

4 A. I think you've got the top one, but they're
5 all the same, so you can mark whichever one you want.

6 - - -

7 (Deposition Exhibit 8 marked.)

8 - - -

9 Q. I'll tell you what, I will mark this one as
10 Exhibit 8 and ask you to give me a copy of that.

11 A. Sure.

12 Q. Thank you. And I'll ask you to refer to this
13 one specifically.

14 Now, this is a document that purports to have
15 been signed January 25, 2017 by Mr. Pace?

16 A. That's correct.

17 Q. Prior to your retention in this case, did you
18 do any work in the case?

19 A. No.

20 Q. So you didn't do any work before January
21 25th?

22 A. Okay. If you want to call a phone call work,
23 yeah, I did a phone call.

24 Q. Other than the phone call?

25 A. No. As far as analysis and so forth, no, I

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1 didn't do that.

2 Q. Okay. So were any of the documents listed in
3 Exhibit B to Exhibit Number 7, your report, were those
4 provided to you before or after your retention?

5 A. These two flash drives that I got from
6 Mr. Lomax, I dated them. This one is dated -- they're
7 both dated 24 January 2017. I wrote the date down of
8 when I got them.

9 Q. Okay. So you received those prior to being
10 retained in this case?

11 A. What's the date on that, the 25th?

12 Q. It purports to be January 25, 2017 --

13 A. Correct. I received them, I did not look at
14 them. I probably loaded them on my computer, but I
15 didn't really look at them.

16 Q. Okay. So you didn't review them prior to
17 January 25th, 2017?

18 A. No. No. No.

19 Q. Is this fee schedule and conditions a
20 standard form that you use?

21 A. It is. There was a little modification.
22 It's my general form that I use. They wanted a little
23 bit on paragraph 4 about the fee cap of \$25,000. And
24 then up in number 1, usually we don't add the case
25 caption; in number 1, they added the case caption. So

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1 there were a couple of changes like that.

2 And then also about the confidentiality, they
3 wanted to include that to make sure the confidential-
4 -- "they" being JD and Miller Friel, so that I was tied
5 into the confidential- -- confidentiality umbrella.
6 There we go. And then other than that, it's my
7 standard form.

8 Q. Okay. Did you sign a nondisclosure or
9 confidentiality agreement in addition to this document?

10 A. I did.

11 Q. Do you have that with you today?

12 A. It's probably down in the Miami office of
13 Jones Day. I signed it down there last week.

14 Q. So you signed it last week after you received
15 all the documents that are contained on Exhibit B?

16 A. Wait a minute. Let me -- let me think about
17 it here. I'm not sure if it was a confidentiality --
18 maybe it was a nondisclosure agreement. I did sign
19 something last week with the anticipation of going on a
20 site visit, so I did sign -- it was a -- I don't know.
21 It appeared to be some kind of a legal protective
22 document.

23 Q. Do you know what day last week it was?

24 A. I think it was Tuesday.

25 Q. Tuesday, February 21st, does that sound

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1 right?

2 A. Sounds about right.

3 Q. So all these documents had been provided to
4 you prior to that, prior to you executing that
5 confidentiality agreement?

6 A. Whatever -- yeah, whatever that document was,
7 that's correct.

8 Q. Other than the document you signed on
9 February 21st, did you sign any other confidentiality
10 agreements?

11 A. I don't believe I did. I don't think I did.

12 Q. So as of the time you entered into this fee
13 schedule and conditions, that was accepted January 25,
14 2017; is that correct?

15 A. It is.

16 Q. The document that we've marked as Exhibit
17 Number 8; is that correct?

18 A. It is 8, yes, sir.

19 Q. Okay. At the time that Mr. Pace executed
20 this agreement, you had not begun any of the
21 substantive work with respect to this case?

22 A. That is correct.

23 Q. Did you know at the time of entering into
24 this agreement approximately what the subject matter of
25 your testimony would be?

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1 A. Very roughly. I knew it would be about the
2 general area of boilers, steam, heat transfer. Very
3 generally, yes.

4 And then also they had mentioned that the
5 device claimed to have put out more energy than it
6 consumed, so obviously that's -- that's going to be a
7 matter of discussion, too.

8 Q. Now, looking back, sir, to Exhibit Number 7,
9 which you've identified as your report in this case,
10 did you prepare this report?

11 A. I did not. I prepared -- excuse me. I
12 prepared a Word document report that is the bulk of
13 this. All right. As far as putting it in the proper
14 legal format, somebody at Jones Day did that. I gave
15 them my report and then they put the -- you know, put
16 it into proper format for the court.

17 Q. Okay. Is there any portion of the contents
18 in here that you did not write?

19 A. Well, the cover page, obviously. Let's see
20 here. On the first page, it would be like the top
21 paragraph, the introduction.

22 Q. You did not write the introduction?

23 A. Actually, I did. Yeah, I wrote the backbone
24 of that, yeah. And then --

25 Q. I'm sorry, you said you wrote the backbone of

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1 that?

2 A. Well, you know, we -- obviously we've done a
3 little bit of wordsmithing to get it in the proper
4 legal -- you know, I'm an engineer, not an attorney,
5 so, you know, it had to be gotten into the proper legal
6 phraseology.

7 Q. You say "we" did some wordsmithing.

8 Who's "we"?

9 A. Well, you know, whenever -- as you well know,
10 whenever an expert does a report, we'll go back and
11 forth to try to get the wording in the proper legal
12 phraseology.

13 Q. But my question was, who is "we"? Who did
14 you work with to modify what you had written into --

15 A. Predominantly Mr. Bell.

16 Q. Mr. Bell?

17 A. Yes, sir.

18 Q. Was there anyone else?

19 A. I think Ms. Handelman was helping out a
20 little bit.

21 Q. Okay. What about the Statement of Opinions,
22 Equipment Description?

23 A. Okay, now, on page 1, I can cut to the chase
24 here and save you some time here, through page number
25 23, that's all me.

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1 Q. Were any alterations or changes requested by
2 anyone in relation to any of the matters discussed in
3 page 1 through 23 of this report?

4 A. We did some wordsmithing, yes.

5 MR. LOMAX: I'm going to object to any
6 questions that are seeking attorney work product on
7 this issue.

8 MR. ANNESSER: Okay.

9 BY MR. ANNESSER:

10 Q. You did some wordsmithing?

11 A. Yes.

12 Q. Okay. Do you know what areas were changed or
13 altered?

14 A. Several.

15 Q. Do you know what those areas would be?

16 A. I don't remember exactly right now.

17 Q. Okay. We will go through this --

18 A. No. Again, to -- let me help you finish your
19 question. Obviously page 24 I didn't do, because
20 that's the attorneys and the service and so forth. The
21 exhibits, you know, my CV, obviously, I did.

22 And then on the evidence reviewed, I think I
23 told the people at Jone- -- yeah, Jones Day, because I
24 think Ms. Handelman was doing a lot of this, I said,
25 I'm -- I don't have time to write all of this down,

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1 what was on the two flash drives that Mr. Lomax
2 provided. So they basically --

3 MR. LOMAX: I'm going to instruct you not to
4 get into the conversations --

5 MR. ANNESSER: Well, he doesn't. He said
6 documents that were provided by you, but --

7 MR. LOMAX: I'm just instructing the witness
8 to not get into conversations with his attorney.

9 MR. ANNESSER: Okay. That's fine.

10 BY MR. ANNESSER:

11 Q. You can -- you can continue. I don't want to
12 know what the attorneys have told you with respect
13 to -- well, at this point in time.

14 A. Okay. What happened, instead of me typing
15 out everything that was on those flash drives, somebody
16 else did it, I checked it. It was just for purely
17 clerical convenience on Exhibit B.

18 Q. Are there any documents that you reviewed or
19 information that you received that is not listed within
20 Exhibit B to Exhibit Number 7 that's been marked in
21 this deposition?

22 A. Not that I can think of.

23 Q. Okay. In reviewing the documents that you
24 were provided -- well, let me take a step back.

25 What was your understanding, at the time that

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1 you were retained, so as of January 25, 2017, what was
2 your understanding of your assignment?

3 A. To look at the information that was provided
4 and provide an independent analysis of were the claims
5 being made for the device true or not, was the data --
6 did the data appear to be valid and -- let me get -- I
7 got a little balled up there.

8 Would you mind asking your question again? I
9 apologize.

10 Q. What did you understand your assignment to
11 be?

12 A. Well, to look at, and again, is the
13 coefficient of performance a proper term to use. Did
14 the machine, the E-Cat, develop the COP that it was
15 intended to do, did it produce more energy than it was
16 consumed. And then also to kind of look at just the
17 gen- -- the data that was -- that were -- data that
18 were provided and to, again, try to make a general
19 analysis of -- based on what I was provided.

20 Q. Now, sir, you said, I believe, that you had
21 been retained 427 times -- or your company, ATE, has
22 been retained 427 times of which 82 of those were in
23 relation to cases pending before the courts; is that
24 correct?

25 A. Not necessarily cases, expert witness. So a

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1 lot of them did not -- you know, a lot of them -- I
2 shouldn't say a lot. Several of them have not gone to
3 litigation. So I was involved early on with the
4 anticipation of litigation and then they either
5 settled, litigation was not pursued.

6 So those 82 that you're referring to are in
7 the general legal purview as opposed to, say, doing
8 design work or teaching work.

9 Q. Have you ever been fired by a client with
10 respect to cases that you've been involved in --

11 A. Yes.

12 Q. -- as an expert witness?

13 A. Yes.

14 Q. How many clients?

15 A. One that I recall for sure.

16 Q. Okay. Who was that?

17 A. A long time ago, I think it was called Miller
18 versus Dacor.

19 Q. Why were you fired?

20 A. Because I wouldn't rollover and tell him what
21 he wanted instead of what I found.

22 Q. Okay. Any others?

23 A. That's the only one I can think of right now.

24 Q. So out of the 82 cases, there's only been one
25 case where you have found contrary to the party that

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1 retained you?

2 A. That's the only one I can think of right now,
3 yeah.

4 Q. Okay. So we're talking about your
5 understanding of the assignment. And they asked you to
6 evaluate a number of things, so -- and provided you
7 information. Let's -- let's first review on Exhibit B
8 to Exhibit 7 the documents that you've been provided.

9 You were provided a copy of the complaint
10 filed in this action, correct?

11 A. Yes.

12 Q. Okay. That's number 1. Is there anything
13 within the complaint that affected your evaluation in
14 this case, that you relied upon in forming your
15 opinions?

16 A. Let me take a minute and go through it.
17 Okay. In looking at the -- what I have done -- at
18 least -- I think that was a very long document, Article
19 71 of the complaint on page 13, by all accounts, the
20 amount of energy produced by the E-Cat during the
21 guaranteed performance was substantially greater than
22 50 times the amount of energy consumed, that was
23 definitely part of it.

24 Q. Okay.

25 A. Next, 72, the ERV publishing his final

1 report, yes. 73, yes. And then on validation of the
2 plant on -- this is -- I'm not sure what -- this might
3 be an addendum, but this was paragraph 4, validation of
4 the plant. It looks like it's an attachment to the
5 complaint.

6 Q. And what effect did those allegations have on
7 your opinions in this case?

8 A. Well, those were -- those were the things
9 that -- you know, a lot of the other issues were
10 commercial and -- and so forth that did not concern my
11 part of the work. Those appeared to be the -- the
12 technical issues at hand that I could address.

13 Q. Now, number 3 on your list is the E-Cat MW1
14 Energy Plat in Miami Tests Plan.

15 Did you review that document, sir?

16 A. I did.

17 Q. Okay. And are you offering an opinion as to
18 the propriety of that test plan?

19 A. I am.

20 Q. Okay. What have you been informed regarding
21 that test plan?

22 A. Well, I was provided -- I've got a copy
23 somewhere in here. I'm not sure I was informed much of
24 anything.

25 I believe in discussions with Mr. Murray, he

1 felt it was very, very deficient as far as testing and
2 advice of this type.

3 Q. I'm going to stop you for a moment. You said
4 in discussions with Mr. Murray, he felt it was
5 deficient.

6 Did you do your own evaluation of the test
7 plan?

8 A. Oh, yeah. Oh, yeah.

9 Q. And that evaluation was done for what
10 purpose?

11 A. To determine if it was a proper way to test a
12 device of this sort.

13 Q. Okay. And did anyone ever tell you in this
14 case that the defendants, Ms. -- I'm sorry, Industrial
15 Heat and IPH International B.V. agreed to that test
16 plan?

17 A. They have, yes.

18 Q. They did tell you that?

19 A. They did, yes.

20 Q. Okay. So you were aware that that was an
21 agreed-to test plan?

22 A. I am aware of that.

23 Q. And your opinion is that it is somehow
24 deficient?

25 A. Correct, it is deficient, yes, sir.

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1 Q. But you don't plan on testifying that it
2 wasn't agreed to, right?

3 A. No. No. That's a nontechnical issue as far
4 as I'm concerned.

5 Q. Okay. The fourth item on your list is
6 initial queries for Mr. Engineer Fabio Penon -- or
7 M. Engineer Fabio Penon as to measurements of the 1
8 megawatt plant.

9 Did you review that document?

10 A. I did.

11 Q. What was the purpose of your reviewing that
12 document?

13 A. That was -- if my memory serves, that was
14 Mr. Murray, Joe -- yeah, Joe Murray, his questions
15 after his visit to the plant, his questions to
16 Mr. Penon about things that were happening and -- and
17 issues that they had -- Mr. Murray had questions or
18 concerns with.

19 Q. Okay. And what was the -- well, did that
20 affect your opinions in any manner?

21 A. I'd have to read it. Maybe if I can dig that
22 out. It did to a point. I will say yes for now.

23 Q. Okay. And what effect did it have?

24 A. It just -- it gave me a little different
25 perspective, a little more information to -- to

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1 consider.

2 Q. Did anyone tell you that they wanted you to
3 testify in accordance with those queries?

4 A. No. Actually, they were -- they were quite
5 specific that they -- at that time they known -- they
6 knew that Mr. Murray had some -- done some analysis of
7 his own. And they were very, very specific about not
8 making me privy to those. They wanted me to come to my
9 totally independent conclusions based on Mr. Murray --

10 Q. Then why did they --

11 A. -- or other than Mr. Murray.

12 Q. Then why did they disclose them to you at the
13 same time as all the other documents?

14 A. You'd have to ask them that. I don't know.

15 Q. Okay. You just testified that they were very
16 specific about not wanting you to --

17 A. That was at the initial -- at the onset of
18 our -- my engagement. I should -- maybe I didn't
19 clarify that one. It was the onset of the engagement.

20 Q. Well, I think we've established, sir, that
21 you received these documents on January 24th and you
22 were engaged on January 25th of 2017?

23 A. Right. But I also said that I did not do any
24 work until after -- a day or so afterward.

25 Q. Okay. So approximately the 26th?

1 A. Ish.

2 Q. The documents produced in response to a
3 subpoena served on Florida Power & Light --

4 A. Yes.

5 Q. -- did you do any analysis of those
6 documents?

7 A. I looked at them. I don't believe I did a
8 lot of analysis on them.

9 Q. Do you base any of your opinions on those
10 documents?

11 A. Not right now, but I may, because I
12 understand there's some more information coming from
13 FP&L, so I do reserve the right to look at that again
14 and supplement this if need be.

15 Q. You understand, sir, that your opinions have
16 been submitted in this case and we're entitled to know
17 what the opinions are prior to your deposition.

18 So are you inferring that you are going to be
19 changing or altering your opinions after this
20 deposition?

21 MR. LOMAX: Objection to the form of the
22 question.

23 A. I may. Based -- as discovery continues, as I
24 see other depositions and so forth, I fully reserve the
25 right to amend or adjust my opinions based on that

1 information provided, yes, sir, I do.

2 Q. Do you plan on rendering any further
3 opinions?

4 MR. LOMAX: Objection to the form of the
5 question.

6 A. Again, I reserve the right to if need be.

7 Q. Okay. Currently, do you know of any
8 additional opinions that you plan on rendering that are
9 not reflected in your report?

10 A. Not right now.

11 Q. Documents produced in response to subpoena
12 served on Miami-Dade Water and Sewer.

13 Did you review those documents?

14 A. I did.

15 Q. Did you review all the documents on this
16 list, sir?

17 A. I did, yes, sir.

18 Q. Number 11 is a video and photo of the flow
19 meter time lapse conducted by Joseph Murray.

20 Did you review that, sir?

21 A. I looked at it, yes.

22 Q. What is that?

23 A. There's some pictures that he took of the
24 flow meter of the water coming back into the E-Cat.

25 And he did a time lapse -- apparently did a time lapse

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1 photo of the register dial indicating the amount of
2 water passing through that meter.

3 Q. Okay. Do you know how much water was
4 actually put through the meter in that test?

5 A. I don't remember off the top of my head.

6 Q. Do you know the methodology used by
7 Mr. Murray in conducting that time lapse test?

8 A. Again, I don't remember right off the top of
9 my head now.

10 Q. Did you rely upon that video and photo for
11 any portion of your opinion in this case?

12 A. Very little.

13 Q. Okay. To what extent did you rely on it?

14 A. Again, very little.

15 Q. Well, I understand it's very little, but I
16 want to know what that little amount is.

17 A. I can't give you a percentage.

18 Q. Okay. But it did affect your opinion in this
19 case?

20 A. A little bit, yeah.

21 Q. Okay. The number 12, videos of heat
22 simulation conducted by Joe Murray.

23 A. Yes.

24 Q. Did those videos affect your opinion in this
25 case?

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1 A. They did.

2 Q. Okay. More than just a little?

3 A. Yes.

4 Q. Okay. Do you know what criteria was used to
5 perform those heat simulations?

6 A. No, I did not. I did not dig into his
7 underlying methodology. I looked at them and that
8 might be -- if I have time to look into it more, that
9 be -- may be an area where I amend my opinion. If I
10 have time to dig into Mr. Murray's analysis, I may
11 agree or disagree with him.

12 I am not an expert on finite el- -- finite
13 element analysis, all right, as Mr. Murray appears to
14 be.

15 So, you know, I looked at it. It -- it
16 appeared to be legit. But further examination, you
17 know, there may be some -- some wrinkles in his
18 analysis that I disagree with.

19 Q. Okay. So when you say "finite element
20 analysis," what does that mean?

21 A. What -- in large scale analyses like that,
22 what -- what an an- -- I can't even talk -- an analyst
23 will do is to break a large system down into smaller
24 chunks and then analyze each chunk and then anal- --
25 and then work that to analyze the aggregate. Some --

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1 some problems are -- are very difficult to solve
2 otherwise.

3 Q. So if the data under- -- underlying
4 Mr. Murray's heat simulations was inaccurate, would
5 that affect the opinion that you've rendered as part of
6 this report?

7 A. If it was inaccurate, it might.

8 Q. What do you mean "it might"?

9 A. Well, you're assuming it's inaccurate. I
10 don't know that -- you know, again, I --

11 Q. I'm asking you, if it's found that his
12 simulations were, in fact, inaccurate, would that
13 affect your opinions in this case?

14 A. I guess I'd have to ask you back, whose --
15 whose standard -- whose proof that it's inaccurate? I
16 need to know, you know, who's saying -- who's saying
17 it's inaccurate.

18 Q. Sir, it's not who said. I'm asking you, if
19 you look at his underlying data and say, wait a second,
20 this is all wrong, would that affect your opinion as
21 it's been rendered in this report?

22 A. Would you help me out when you say
23 "underlying data"? Can you be a little more specific,
24 please?

25 Q. Well, the criteria that he used to perform

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1 these simulations.

2 A. Okay.

3 Q. Do you know how these simulations are
4 conducted?

5 A. I'm not -- like I said, I'm not an expert on
6 finite element analysis.

7 Q. Okay. So you've relied upon his simulations
8 in forming your opinions?

9 A. Yes, I have.

10 Q. Okay. Number 14, Joseph Murray's October 31,
11 2016 power analysis.

12 What was that?

13 A. He -- my understanding is what he did was to
14 look at the -- the numbers generated by Mr. Penon and I
15 believe Mr. Fabiani to compare those numbers with the
16 FP&L meter data, that's my -- that's my understanding.

17 Q. Okay. Did you rely upon those comparisons in
18 formulating your opinions?

19 A. Very little.

20 Q. But did you rely upon them to any degree?

21 A. A little. Like I said, a little bit. I'm
22 not going to give you a percentage. A little bit.

23 Q. If that data were found to be incorrect,
24 would it affect your opinion in this case?

25 A. No.

1 Q. Okay. Did you at all -- okay.

2 In your reliance upon Mr. Murray's October
3 31, 2016 power analysis, what relevance did that have
4 to your opinions in this case?

5 A. Actually, not a lot.

6 Q. Number 15, photos taken at the Triangle Drive
7 facility.

8 Did those photos have any effect on your
9 analysis in this case?

10 A. Obviously, they had an effect. They were --
11 you know, there's no data there. It's information
12 only. So, yeah, it did have an effect, qualitative
13 more than quantitative.

14 Q. Okay. On the second page of Exhibit B,
15 number 18, it says, Industrial Heat spreadsheets
16 summarizing data collected from Florida Power & Light.

17 Who prepared those spreadsheets?

18 A. It says Industrial Heat, so it would -- you
19 know, my understanding would be that they prepared the
20 spreadsheets.

21 Q. Did you ever analyze the data to make sure
22 that it was accurate and complete?

23 A. I did not analyze that electrical data at
24 all.

25 Q. Did you rely upon that electric- --

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1 electrical data in formulating your opinion in this
2 case?

3 A. Virtually none.

4 Q. Number 19, Industrial Heat spreadsheet
5 summarizing the data from Penon's final report.

6 What was that?

7 A. They -- they apparently -- what they did was
8 they took his data and tried to translate it from
9 Italian into English and make it so that it was usable
10 for people who use English as their native language as
11 opposed to Italian. That's my understanding of it.

12 Q. Did you rely upon that spreadsheet
13 summarizing the data from Penon's final report?

14 A. I did to a point.

15 Q. How so?

16 A. I -- initially I thought that spreadsheet had
17 been produced by Penon proper. And then it turned out
18 that that was Industrial Heat's translation of it, if
19 you will.

20 So I thought, now, rather than rely on this
21 from Industrial Heat, I'll try to stick with the
22 original data as much as I can.

23 So I looked at it initially, but then I don't
24 want to say totally ruled it out, because, you know,
25 it's already in my mind, but as far as a substantive

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1 basis for my opinions, not very much.

2 Q. Okay. Now, Mr. Penon's final report, was
3 that in Italian or was it in English?

4 A. It was in English.

5 Q. Okay. So what was the summary that
6 Industrial Heat had provided?

7 A. This one? As best I could tell, it was a --
8 it was a rollup of the data, kind of a summarization of
9 the data.

10 Q. Okay. Were they --

11 A. Go ahead. I'm sorry.

12 Q. Do you know if the -- the information input
13 into that data was true and correct? Did you do an
14 analysis to verify those --

15 A. Now, when you say "that data," help me out.

16 Q. The data input into the Industrial Heat
17 spreadsheet summarizing the data from Penon's final
18 report, do you know who put that in specifically into
19 their summarization?

20 A. Into Industrial Heat's?

21 Q. Uh-huh.

22 A. I believe it was Mr. Murray. That's --
23 that's my understanding.

24 Q. Do you know --

25 A. But it might -- it might have been one of his

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1 employees. That, I don't know for 100 percent.

2 Q. Did you cross-check and verify that it's
3 accurate and correct?

4 A. That's why -- that's one of the reasons why I
5 did not use it, because it was based on, what I
6 understand -- because Penon's data was in a PDF as
7 opposed to a spreadsheet, PDF is numbers on a paper,
8 there are no underlying formulas that you can see on a
9 PDF, at least not that I'm aware of. So my
10 understanding is what Industrial Heat did was took
11 Penon's data, replicated the spreadsheet and then input
12 his data.

13 That's why I did not use Industrial Heat's,
14 because it's a tran- -- okay, maybe not from Italian to
15 English, but a translation from his PDF numbers into a
16 spreadsheet.

17 Q. But the numbers should be the same, correct?

18 A. They should be, but they might not have been.
19 You know, I think -- my understanding is Industrial
20 Heat did try very, very hard. I understand Mr. Murray
21 cross-checked almost all of them. But still, that --
22 that raises a question in my mind, so I didn't use
23 them.

24 Q. Now, you say you --

25 A. I shouldn't say didn't, I used them very

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1 little.

2 Q. You said it's your understanding that
3 Mr. Murray cross-checked all of them.

4 What gives you that understanding?

5 A. I believe that's what he said or I read it
6 someplace.

7 Q. Now, on number 20, telephone interviews with
8 Mr. Murray --

9 A. Uh-huh.

10 Q. -- when did you first speak with Mr. Murray?

11 A. Okay. That would be January 20th of this
12 year.

13 Q. And what was the purpose of that call?

14 A. That was an introductory call where
15 Mr. Murray, Erika Handelson and Chris Pace brought me
16 up to speed on what the -- what the substance of the
17 case was.

18 Q. I thought you didn't know the true substance
19 of the case until you were retained.

20 A. They got into more detail after I was
21 retained. This was just kind of the basics, and then I
22 got -- this is kind of the 30,000 foot, if you will.
23 And then I got -- later on I got the -- from Mr. Lomax,
24 all the nitty-gritty stuff, if you will.

25 Q. Other than the documents listed in Exhibit B

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1 to Exhibit 7, which is your report, did you receive any
2 other information, whether orally or in writing, email
3 or otherwise that you relied upon in formulating your
4 report?

5 A. Again, you have to include my education,
6 experience and so forth. But as far as directly
7 provided information, to the best of my knowledge,
8 everything -- that's it.

9 Q. Sir, have you formulated any opinions in this
10 case?

11 A. I have.

12 Q. I imagine you would have.

13 Are those the opinions that are summarized in
14 your report on page 21, Conclusions?

15 A. Yes, it is, correct.

16 Q. In addition to those three listed opinions,
17 have you formulated any other opinions in this case?

18 A. I think that's it as I sit here. I think
19 we're pretty well good to go here.

20 Q. Other than the documents that we've discussed
21 as part of Exhibit B to your report, are there any
22 other documents that you have received but elected not
23 to rely upon?

24 A. When you say "received" --

25 Q. That you were provided by anyone in relation

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1 to this case that you did not rely upon.

2 A. Well, we talked about the Industrial Heat
3 spreadsheet, all right, that I, you know, gave a little
4 bit of -- you know, a little bit of credibility to, but
5 no.

6 Q. Sir, going back to page 1 of your report --

7 A. Is that -- okay.

8 Q. -- under Statement of Opinions, Equipment
9 Description, you state that you have not been able to
10 inspect the E-Cat site in Florida?

11 A. Correct.

12 Q. Okay. But you state that based on the
13 information provided to you, you believe the equipment
14 is the E-Cat device invented by plaintiff, Andrea
15 Rossi, a purported chemical processing/production
16 facility run by J.M. Chemical Products or J.M. Products
17 and related piping, electrical and -- equipment,
18 utilities, et cetera, to support the two ventures. The
19 author believes that the purpose of the E-Cat was to
20 sell steam via Mr. Rossi's company, Leonardo Corp., to
21 J.M.

22 A. Yes.

23 Q. Where did you get that information from?

24 A. It was provided by counsel.

25 Q. In what form?

1 A. Electronic and conversations and -- and
2 documents.

3 Q. Would that be -- would the documents be
4 contained in -- in the list attached as Exhibit B to
5 your report?

6 A. Yes.

7 Q. What were you told in conversation regarding
8 the two entities?

9 MR. LOMAX: Objection.

10 Are you seeking conversation with counsel?

11 MR. ANNESSER: I'm seeking anything that he
12 was told.

13 MR. LOMAX: I object.

14 MR. ANNESSER: Any -- any information
15 provided by counsel is not privileged to the extent
16 that it had any relation to something in the report.

17 MR. LOMAX: If you're asking specifically
18 about that, okay. Otherwise, I would object.

19 BY MR. ANNESSER:

20 Q. I'm asking what information you were provided
21 with respect to the paragraph that we just went through
22 by counsel.

23 A. One more time, please. I got lost in the
24 back and forth.

25 Q. What information were you provided orally

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1 with respect to your statements made in the first
2 paragraph starting on page 1 and carrying over to page
3 2 of your report?

4 A. Obviously, we've had a lot of discussions. I
5 don't remember most of the conversation verbatim. But
6 they provided some of the fill-in data as opposed --
7 about, you know, who did what to who, who J.M. was, who
8 some of the players were, just, you know, kind of
9 filling in some of the blanks, if you will, to give me
10 a little more understanding or kind of the overview of
11 the case.

12 Q. Now, sir, in the Background, Observations and
13 Narrative, you say it's -- that it's the author's
14 understanding is that the plaintiffs contend that the
15 report dated 3-28-2016 by Dr. Engineer Fabio Penon is
16 validation of the E-Cat's performance.

17 The purpose of the author's investigation --
18 that would be you, correct?

19 A. Yes.

20 Q. -- is to determine if the E-Cat data, in
21 fact, produced more energy than it consumed as
22 Mr. Penon reported.

23 Was that the purpose of your evaluation, sir?

24 A. Consistent with paragraph 1 and 2, or, yeah,
25 under Introduction, again, looking at the document as a

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1 whole, yes.

2 And I would -- if you will indulge me, you
3 asked me about my conclusions. I would add that there
4 is another opinion that I have formed. Again, it was
5 not included in my report. But based upon the ongoing
6 work that I've done, I would add a conclusion number 4
7 that the E-Cat never produced superheated steam. And
8 the E-Cat probably did not produce much steam, if any
9 at all.

10 Q. Okay. We will come back to that.

11 A. I'm sure we will.

12 Q. Okay. The -- jumping ahead to the next
13 section entitled Basic Thermodynamics, you go
14 through -- well, let me ask you this: There's a lot of
15 information that appears to be very generic in there.

16 A. Yes.

17 Q. Okay. Did you write that yourself, or did
18 you --

19 A. You mean this section here? Absolutely, I
20 wrote it.

21 Q. Did you borrow any of the language from any
22 other source?

23 A. Well, the photographs or the illustrations,
24 those come out of the slides I use for teaching. And
25 then I reference Dr. Wark's book on thermal also.

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1 Q. Now, you reference Dr. Wark.

2 Who is Dr. Wark?

3 A. Dr. Kenneth Wark, he was my thermodynamics
4 professor at Purdue.

5 Q. What was the purpose to this generic again?

6 A. The purpose was is that if this is -- if this
7 is indeed a jury trial or if it's a bench trial,
8 regardless, the triers of fact are going to need to
9 understand some basic thermodynamics to have an
10 understanding of the real issues involved and the
11 points I'm making.

12 Without that understanding, they are likely
13 to be overwhelmed or confused with the issues, because
14 engineering is somewhat like medical, you know, we have
15 our own jargon and our own way of doing things and our
16 own expert -- area of expertise that a normal person
17 doesn't have.

18 Q. Well, let me ask you a couple things.
19 Starting first with the first law of thermodynamics --

20 A. Uh-huh.

21 Q. -- what is the first law of thermodynamics?

22 A. The first law of thermodynamics, and this is
23 quoting Wark and, you know, that's -- he writes very
24 badly --

25 Q. I'm not asking you to read your report, I'm

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1 asking you to tell me.

2 A. Oh, sure, certainly. The first -- the first
3 law of thermodynamics is generally that energy can
4 neither be created nor destroyed, it only changes form.
5 And -- and also -- well, yeah, that's it.

6 Q. And there are many forms of energy, correct?

7 A. There are, yes, sir.

8 Q. Would you state that there are chemical,
9 electrical, mechanical, nuclear, thermal,
10 electromagnetic and so on?

11 A. And so on, correct.

12 Q. Now, on page 3 of your report, you go on to
13 discuss and state that the energy forms are all
14 interchangeable?

15 A. Theoretically, but go ahead.

16 Q. Okay. And you can convert one form of energy
17 into another?

18 A. Theoretically.

19 Q. Okay. But then you state that nuclear energy
20 is generally a one-way street?

21 A. Yes, it is.

22 Q. Why is that?

23 A. It's because -- again, I'm not a nuclear
24 engineer, understand that. But to go from, say,
25 mechanical energy to nuclear energy is typically not

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1 possible. And I cited a nuclear weapon and a nuclear
2 power plant. And usually with -- with nuclear energy,
3 it's a one-way street outbound.

4 Q. What were you told of the E-Cat process?

5 A. That it is a -- not a nuclear reaction.

6 Q. Who told you that?

7 A. I read Mr. Stokes' report in which Mr. Rossi
8 said that there's not a nuclear reaction involved.

9 Q. I'm sorry, Mr. Stokes' report?

10 A. The Florida radiological guy.

11 Q. That wasn't listed on the documents that
12 you -- that are included in your report.

13 A. I believe it's in the -- I believe portions
14 are in that 277-page response, and I'm not -- I can't
15 look, I don't have all 277 pages of the third amended
16 answer.

17 Q. Do you know what the nature of the reaction
18 underlying the E-Cat is?

19 A. I do not.

20 Q. So as far as you know, it may be nuclear?

21 MR. LOMAX: Objection to the form of the
22 question.

23 A. Again, based on Mr. Stokes' report, it does
24 not appear to be nuclear.

25 Q. Okay. But, again, you're saying based on

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1 Mr. Stokes' report.

2 What in Mr. Stokes' report indicates to you
3 that it is not nuclear?

4 A. Okay. This is the 15 February '16 report of
5 his, on the last line of item 20, Description of
6 Investigation, he uses no process that generates
7 ionizing radiation and uses no radioactive materials in
8 the construction.

9 Q. Have you ever heard the term LENR, L-E-N-R,
10 before?

11 A. I have.

12 Q. Okay. What does that stand for?

13 A. It purportedly stands for low energy nuclear
14 reaction.

15 Q. Have you done any research on that subject
16 matter?

17 A. Prior to this case, not much. I was -- I was
18 vaguely familiar with Pons and Fleischmann when it
19 happened, but I, you know, quit following it after the
20 controversy.

21 Q. What about as part of this case?

22 A. Well, it -- Mr. -- what I do understand is
23 that what Mr. Rossi is claiming kind of falls under the
24 general rubric of LENR. But I believe that LENR is now
25 a generic term as opposed to a specific term describing

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1 a specific phenomenon.

2 Q. Okay. And so other than Mr. Stokes' report
3 which states that it does not use -- or does not emit
4 ionizing radiation or use radioactive materials, do you
5 have anything other than that to base your statement
6 that it is not a nuclear reaction?

7 A. I believe that Mr. Rossi has stated that
8 maybe in one of his depositions.

9 Q. Okay. Do you, sir, have any independent
10 knowledge other than what you believe other people have
11 said?

12 A. Well, when you say "independent knowledge,"
13 help me out here because this is an official report
14 from the State of Florida, it's an official document.

15 Q. And it's somebody's interpretation. In our
16 profession, we call it hearsay. Okay.

17 So what I'm asking you is, is there anything
18 that you know that does not rely upon what somebody
19 else says?

20 A. Well, I've not -- I've not been allowed to
21 look at anything inside the facility. All right. I've
22 not had a description of what is purported to happen,
23 so I have not been allowed to get that far to make an
24 independent determination yet.

25 Q. Would that be within your field of expertise

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1 is to make a determination?

2 A. I believe I said already, I'm not a nuclear
3 engineer, but I believe this is a non-nuclear device.

4 Q. Okay. Then what type of reaction may be
5 occurring?

6 A. I have no idea. It looks like just a heat --
7 a thermal heat reaction on a glorified electric heater.
8 I'm not sure that there's any reaction going on.

9 Q. Has anyone ever told you that samples of the
10 catalyst had been taken were transmutation of the
11 materials used appear to be indicated?

12 A. Appear to be? That's a little nebulous --

13 Q. What have you been told, sir?

14 A. I've not -- I've not been told anything in
15 that regard.

16 Q. So you don't know whether there's been any
17 transmutation or not? You don't know the nature of its
18 reaction, correct?

19 MR. LOMAX: Object to the form of the
20 question.

21 Q. And other than what you've read, you have no
22 knowledge whatsoever or opinion with respect to whether
23 it's nuclear or any other type of reaction?

24 MR. LOMAX: Objection to the form of the
25 question.

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1 A. Again, I'm not going -- I'm not going to
2 agree to your assertion because Mr. Stokes was a Navy
3 nukie, he's an official with the State of Florida, he
4 is stating that there's no ionizing radiation, there
5 was not a nuclear reaction.

6 And I read some other -- maybe it was him --
7 nuclear analysis that said if there were a nuclear
8 reaction going on in there, it would be a very
9 dangerous place for people to work.

10 Q. Okay. And what was that that you read?

11 A. Again, I read -- I've done a lot of Internet
12 research, but I take that with a huge dose of
13 scepticism.

14 Q. But you rely on it? But you still rely on
15 it?

16 A. If I can -- if I can independently confirm
17 it. You know, and just because it's -- oh, wait, no, I
18 forgot, if it's on the Internet, it must be true,
19 right?

20 No, I take -- I take a lot, particularly in
21 areas like that, alternative in energy so for, there's
22 a lot of quackery going on. I take all that with a
23 huge, huge grain of salt, sir.

24 Q. What is Mr. Stokes -- what is the basis for
25 his statement? Was there a methodology that he

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1 applied?

2 A. He describes it in his report.

3 Q. Other than his description, do you know what
4 he did or did not do to come to that conclusion?

5 A. How would I know if it's not in his report
6 and I wasn't there?

7 Q. But I'm asking you.

8 A. I've answered.

9 Q. To the extent that you rely upon something, I
10 want to know if you know what basis he had for his
11 opinion.

12 A. What he put in his report, his experience as
13 a Navy nukie and being a radiation safety officer for
14 the State of Florida.

15 Q. Okay. So your -- your opinion with respect
16 to whether it's nuclear or not is based solely upon the
17 opinion that he's stated in that report?

18 A. And Mr. Rossi's statements, if I understand
19 them correctly.

20 Q. Where are those statements?

21 A. I believe they're in one of his depositions.

22 Q. Okay.

23 A. And I -- and I believe he stated on the
24 Internet that this is not a nuclear reaction. Again,
25 there's so much stuff out there, it's hard to find it

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1 all.

2 Q. Why isn't the deposition of Mr. Rossi
3 contained within --

4 A. Well, because it wasn't taken until Friday.
5 So, again, that's why, if you will notice in my
6 report -- let me finish, please.

7 Q. Sir, there's no question pending. In fact --

8 A. Oh, I'm sorry. My bad. My bad. I stepped
9 on you then. My bad. I apologize. I thought there
10 was.

11 Q. My question to you, sir, was this: Your
12 report was generated prior to Mr. Rossi's deposition,
13 correct?

14 A. I believe, yeah, at least -- at least the one
15 last Friday, obviously.

16 Q. So you would not have relied upon a statement
17 by Mr. Rossi that was made allegedly after your report
18 was?

19 A. Well, not at that time; I couldn't,
20 obviously. All right.

21 Q. Now, sir, going through looking at page 4 of
22 your report, which appears to be an image British
23 thermal unit, did you create that image?

24 A. I did.

25 Q. Okay. And was it created specifically for

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1 this or something --

2 A. No, as part of my training classes.

3 Q. Okay. This is just a generic image that
4 you've created but doesn't particularly apply to this
5 case, does it?

6 A. Well, yeah, it does particularly apply,
7 because you're putting heat into fluids. So anytime
8 you're putting a BTU in or out, yeah, it does apply.

9 Q. Okay. So was Dr. Penon's measurements in
10 BTUs?

11 A. They were in watts and joules, I believe.
12 It's an easiest enough conversion. Same stuff, just a
13 different way to talk about it.

14 Q. Okay. But, again, this slide is particularly
15 generic. It does not -- it's not an analysis that you
16 performed on the E-Cat plant or the J.M. plant or that
17 facility, correct?

18 A. But this is -- yeah, this is generic to any
19 thermal system, so, yeah, it does apply to the E-Cat
20 plant.

21 Q. Well, I understand. This is comprised of
22 your experience and knowledge, is that fair to state,
23 in terms of that's what this is? This is not any
24 analysis that you've performed specifically for this
25 case?

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1 A. Well, yeah. Well, let me back up. This is
2 -- this analysis is generic in that it applies to all
3 thermodynamic systems. The E-Cat, regardless of
4 whether we agree or disagree on most -- we're probably
5 going to disagree on most everything, but I think we
6 can agree that it is a thermal system of some type. So
7 thermodynamics and these concepts do apply to it.

8 Q. Looking at page 5, sir, the first paragraph
9 says, a conventional steam power plant might have steam
10 leaving the boiler at a pressure of 2485.

11 A. Uh-huh. Yes.

12 Q. Is the E-Cat plant a conventional steam power
13 plant?

14 A. It's not a power plant. All right. It
15 allegedly produces steam. And, again, the purpose of
16 this was not to talk -- this slide was not to talk
17 about the E-Cat, per se, it was to talk about the more
18 generally accepted way of producing power now.

19 Q. Where did you get this statistic that a
20 conventional steam power plant might have steam leaving
21 the boiler at a pressure of 2485?

22 A. My power plant experience. That's a typical
23 number.

24 Q. Okay. Is that something I could look up
25 online?

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1 A. Sure. You know, if it's on the Internet, it
2 must be true.

3 Q. And you talk about the gauge pressure has a
4 local atmospheric pressure of normally 14.696 PSIA at
5 sea level.

6 Is that something similarly that is widely
7 known, or is that specific to this?

8 A. Yes. It's widely known, yes, sir. And it is
9 specific to this case also.

10 Q. How is it specific to this case?

11 A. Well, it's in -- my next sentence says Think
12 Miami. Doral, Miami, what, 41 feet above sea level,
13 give or take, it definitely applies.

14 Q. Okay. You said 41 feet above sea level.
15 Where did you get that information?

16 A. That might be the elevation. I don't exactly
17 what the elevation is. I used it as a number. It
18 could be determined what the exact elevation is.

19 Q. Looking, sir, at pages 6, 7, 8 and 9 up until
20 the point where it says E-Cat MW1 Energy Plant Final
21 Report --

22 A. Yes, sir.

23 Q. -- would you consider that all generic as
24 well? There's nothing specific to the facts in this
25 case? Is that generic background?

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1 A. It is generic and it is specific to the facts
2 in this case in that thermodynamics applies to the
3 facts in this case.

4 Q. Other than thermodynamics applying to the
5 facts in the case, you go through a number of different
6 examples. For example, on page 8, you have a place
7 where it says at Leadville, Colorado, which is an
8 elevation just over 10,000 feet.

9 We're not in Leadville, Colorado, are we?

10 A. No, we're not.

11 Q. That's just an example?

12 A. Correct, to illustrate a point.

13 Q. And where did you come up with that
14 information, sir?

15 A. Well, I haven't been to Leadville, but I've
16 been close. And so it's just -- it's an understanding
17 that as you go up in altitude, the pressure drops. So
18 I know, you know, Leadville, it's just a little over
19 10,000, so you can calculate the pressure and then the
20 boiling point.

21 Q. Why did you choose Leadville?

22 A. Because it's, I think, the highest elevation
23 airport in the country. I think it's one of the
24 highest places that people want to live, just as an
25 example.

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1 Q. And this graph is predicated upon the
2 information that you have above in the paragraph
3 relating to Leadville, Colorado; is that correct?

4 A. Actually, it applies to the whole thing about
5 boiling, saturated water, saturated steam, so it
6 applies to that whole area.

7 Q. Who prepared this graph, sir?

8 A. I pulled it off the Internet.

9 Q. Okay. So you don't know who prepared it?

10 A. I have no idea.

11 Q. Do you know what website you got it from?

12 A. I don't remember. And the reason I picked it
13 is it looked about like the best one that would rep- --
14 to illustrate what I was trying to -- to -- to talk
15 about.

16 This is a very, very generic slide. There's
17 dozens and dozens of different variations out there. I
18 just happened to pick this one because it seemed to
19 help my illustration the best.

20 Q. Sir, turning to page 9 at the bottom -- well,
21 let me -- before I -- before I start into the report,
22 let me ask you just generically, did anyone assist you
23 in preparing this report other than counsel?

24 A. No.

25 Q. Did Mr. Murray assist you in preparing the

1 report?

2 A. He did not assist me.

3 Q. Did he request any changes be made to the
4 report?

5 A. No.

6 Q. Did you make any changes predicated upon his
7 advice?

8 A. No, definitely not.

9 Q. Did you make any changes predicated upon
10 anyone's advice?

11 A. Other than wording changes and, again, in
12 working with counsel to wordsmith the report, no.

13 Q. How did you decide on what data to review in
14 this case?

15 A. Some of it's relevant, some of it's not. I
16 looked at all of it. And let's use an example of
17 Mr. Fabiani's electric data. All right. I looked at
18 those computer files. Those looked like comma
19 delimited files. I thought, okay, this might be nice
20 to do at some later date, but I don't need it right
21 now. So that -- that's one example of many decisions I
22 made.

23 Q. Did you request any additional documents
24 other than what was provided to you before rendering
25 your report?

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1 A. Request from counsel?

2 Q. From anyone.

3 A. I don't believe I did.

4 Q. Is there any additional information that you
5 would have liked to have before rendering your report?

6 A. Not that I can presently think of.

7 Q. So sitting here today, there's no additional
8 data that may have any effect on the opinions that
9 you've rendered in this case?

10 A. I'm not going to consent to that at all.
11 There may be a lot of data that I may need to look at
12 and re-evaluate.

13 Q. Such as?

14 A. Well, again, I haven't been to the site,
15 okay, so that's one thing. You know, there's
16 potentially a lot of data there.

17 I have not been given, or at least I've not
18 seen, the originals of Mr. Penon's data. All I've seen
19 is a PDF representation of that. That could be quite
20 useful. Those are two that I can think of off the top
21 of my head. And, again, that is not an exhaustive list
22 that I've given you, those are two examples of maybe a
23 much larger list, sir.

24 Q. Tell me, sitting here, is there anything else
25 that you would have liked to have reviewed prior to

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1 rendering your report other than a site inspection and
2 seeing Mr. Penon's original --

3 A. Again, not that I can think of now. But I'm
4 not going to -- I'm not going to consent that that's my
5 -- a limiting answer on my part.

6 Q. Did you ever request an original of
7 Mr. Penon's data?

8 A. I believe I did.

9 Q. Who did you make that request to?

10 A. Either Mr. Lomax -- you know, one of the --
11 one of the attorneys that I'm working with, I don't
12 remember who.

13 Q. Do you know if that was ever requested of
14 Mr. Penon?

15 A. I don't know.

16 Q. What about the site inspection, when did you
17 first request a site inspection?

18 A. I don't remember a date, but typically I like
19 to do a site inspection, so I'm sure I mentioned it
20 early on.

21 And let me -- let me go back, if I may go
22 back. Going back to Mr. Penon's dep last week, as you
23 well know, the record is going to be far from clear
24 because of the issues involved, Mr. Pace may have
25 requested that data during the deposition. I don't

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1 remember for 100 percent. He may have. I'll have to
2 -- we'll have to look at the record to sort that out.
3 But Mr. Pace may have brought that up during his
4 portion of the dep.

5 Q. Did you request Mr. Penon's data prior to
6 rendering your report in this case?

7 A. I'm sure I did.

8 Q. Did you review any data that was provided to
9 you by anyone other than counsel?

10 A. I don't believe I did.

11 Q. Did you review any literature or other
12 publications that you used in rendering your opinion in
13 this case?

14 A. Again, I can't give you a specific list.
15 But, yeah, going back to my background, you know, the
16 thermodynamics textbooks, things like that, yeah,
17 generically, yes.

18 Can I give you specifics? Not right now,
19 because -- like my steam tables, all right, I used
20 those, okay, that's one example, Keenan and Keyes steam
21 tables is one example. You know, my thermodynamics
22 textbooks, those are a couple examples, but it's not
23 exhaustive. So whatever I needed at the time, I
24 grabbed, looked it up, put it back, went on.

25 Q. But you don't have a list today other than

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1 the steam tables?

2 A. No, but that -- no, but I'm not going to say
3 that's a limiting list. Those are two I can think of
4 off the top of my head right now.

5 Q. What did you use the textbook for?

6 A. The textbook?

7 Q. Yes.

8 A. Did I say thermal textbook? We'll just talk
9 -- we'll just say Mr. Wark's book. You know, to make
10 sure I'm clear on the -- on the first and the second
11 law. And then to look up perpetual motion machines and
12 see what he had to say about that.

13 Q. Perpetual motion machines?

14 A. Yes, sir.

15 Q. Is there a perpetual motion machine that you
16 know of in relation to this case?

17 A. The E-Cat is alleged to be one. But in my
18 opinion, it is absolutely not one.

19 Q. What is a perpetual motion machine?

20 A. One of the -- in reference to the subject at
21 hand, a device that creates energy from nothing or
22 creates more energy than it use- -- consumes or
23 produces more energy than it consumes.

24 Q. So you have Mr. Wark's book.

25 A. Uh-huh.

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1 Q. How did you rely upon the steam tables?

2 A. Well, that's -- that's where all of the
3 specific numbers for steam properties are. Commander
4 Data could memorize that, but I unfortunately cannot.

5 Q. Who published those steam tables?

6 A. Keenan and Keyes.

7 Q. When was that published?

8 A. I have no idea. I think it was the early
9 '60s, my edition.

10 Q. Can you summarize the pertinent information
11 theory or methodology from that publication that you
12 used?

13 A. I don't follow your question.

14 Q. Can you summarize the pertinent information
15 that you used from that document, from that -- the
16 steam tables by Keenan and Keyes?

17 A. The properties of steam and the properties of
18 saturated water and the properties of superheated
19 steam.

20 Q. And what are those properties?

21 A. I can't give you numbers, that's why I have
22 the book.

23 Q. Are those -- are all the numbers that you
24 relied upon for -- contained within your report?

25 A. I use -- yeah, when I do steam calculations,

1 I use those steam tables, yes.

2 Q. What about the textbook by Mr. -- your prior
3 professor, Mr. --

4 A. Wark?

5 Q. Wark.

6 A. Well, predominant -- again, looking at the
7 definitions of first and second and then perpetual
8 motion machines like we talked about.

9 Q. Okay. What about perpetual motion machines
10 did you rely upon out of that textbook?

11 A. I can show you exactly what I looked at if
12 you'd like.

13 Q. Sure.

14 A. Are -- are we done with the fee schedule and
15 stuff so I can get this paper off of my stack?

16 Q. You can put it here for now.

17 A. Okay. Let me give you the -- do you have the
18 -- okay, that's the exhibit, so all these other copies,
19 I can -- I can get those off the table --

20 Q. Yes, sir.

21 A. -- and clean this mess up. Okay.

22 All right. Here are some extracts from
23 Professor -- is that one or two copies? It doesn't
24 make a difference. All right. And you can mark that
25 one if you want because they're all the same.

1 - - -

2 (Deposition Exhibit 9 marked.)

3 - - -

4 Q. We will mark this document as Exhibit 9. And
5 I'll have you refer to the marked document. If I
6 may --

7 A. Sure. Absolutely.

8 Q. -- have a copy of this. Thank you.

9 So you referred, sir, to the provisions
10 contained in Mr. Wark's book.

11 And Mr. Wark was the author of this?

12 A. Correct, he is.

13 Q. And you don't know when this was published?

14 A. I want to say late '60s, early '70s. I took
15 thermo in, what was it, '73 or '74.

16 Q. Do you know if there are any publications
17 that disagree with Mr. Wark's rules or information that
18 he's provided?

19 A. There may be some publications out there that
20 disagree with it. I'm not aware of them. But I know
21 Dr. Wong fully agrees with him.

22 Q. Did you at all look for any information that
23 disagrees with --

24 A. No, because I believe the laws of
25 thermodynamics are inviable and there's no reason to

1 look.

2 Q. So you don't -- you don't know, sitting here
3 today, whether anybody has challenged this publication?

4 A. I don't know for a fact. I'd be really
5 surprised if somebody did.

6 Q. And specifically, sir, with respect to -- I
7 know you said you looked at perpetual motion machines.

8 A. Correct.

9 Q. Can you summarize what information contained
10 within this document you relied upon?

11 A. Yeah.

12 Q. I'm going to ask you -- I don't want you --
13 you can look at it. I don't want you to read it word
14 for word.

15 A. Well, I won't read it. No, no, I won't do
16 that to you. It's on page 213, 6-10. This is Wark's
17 book. And then -- and then 214 describes -- yeah, page
18 213 and 214, Sections 6-10, perpetual motion machines,
19 he gives me a general description of them.

20 Q. Okay. And did you find that -- did you use
21 that description in any way in formulating your
22 opinions in this case?

23 A. I did.

24 Q. Okay. How so?

25 A. If you go to page 214, middle of the page

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1 just above Heat Reservoir, the next -- the second
2 sentence up, a perpetual motion machine, excuse me, of
3 the kind -- first kind, a PMM1, in parenthesis, is a
4 device which creates energy and thus violates the first
5 law of thermodynamics. Any process which creates a
6 PMM1 or a PMM2 is impossible.

7 Q. What is a PMM1 or PMM2?

8 A. Perpetual motion machine.

9 Q. What is the difference between 1 --

10 A. Okay. The difference, the first one is it
11 violates the first law in that it creates energy. And
12 then the second one violates the second law in that you
13 can have a machine that basically keeps on running of
14 its own accord.

15 Q. Now, we'll -- we'll get into the laws of
16 thermodynamics shortly, but are you familiar with the
17 author's reputation?

18 A. Dr. Wark? He was a good professor. I've
19 never -- I've not heard anything negative about him. I
20 mean, there may be negative stuff about him, but I have
21 not followed his career, so I don't know good, bad or
22 indifferent.

23 Q. Do you know if he maintains good standing in
24 his field?

25 A. I don't know if he's even alive.

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1 Q. Okay. What about Joe Murray, are you
2 familiar with his reputation or experience?

3 A. No. I've never met the man.

4 Q. Do you know if this publication, specifically
5 the Thermodynamics book written by Kenneth Wark, was
6 peer reviewed?

7 A. I don't know that textbooks are peer
8 reviewed.

9 Q. Now, with respect to your opinions in this
10 case, can you state every methodology that you've
11 relied upon in forming your opinions?

12 A. No, because -- and the reason for that is not
13 that I don't have them, it's just that it's a thought
14 process that I've developed over 40 years of being an
15 engineer, four years undergrad, graduate degree, and
16 everything that I've done. So it's just an ongoing
17 process that it would take weeks to try to even sort it
18 out.

19 I have one, but I can't give you --
20 unfortunately, I can't give you the specific answer
21 that you're looking for. It's just it's in there and
22 that's how I think and that's how I work.

23 Q. Okay. So there's no direct methodology you
24 can point me to that, for example, Dr. Wong, our
25 expert, can look at and say, yes, that methodology is

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1 correct, or, no, that methodology is incorrect based
2 on --

3 A. Well, you know, when you say a methodology,
4 you know, we can wrangle some words here if you'd like,
5 but, you know, methodology seems to be more like in
6 devising an experiment to figure out A, B or C. Okay.
7 You know, here's the methodology, we're going to do
8 this. All right.

9 My methodology is just a way of thinking that
10 engineers typically use. I would imagine -- again,
11 never met Dr. Wong either. I would imagine his thought
12 processes along these regards and mine are probably
13 quite similar, same for Mr. Wark, same for Mr. Murray.
14 Okay. I should say Dr. Wark. My bad. You know what I
15 mean.

16 Q. Is there -- so there's no defined, for
17 example, formula that you have applied in formulating
18 -- in formulating your opinions in this case? It's a
19 culmination of your years of experience that you've
20 relied upon in forming your opinions?

21 A. All of the above. I've used some formulas in
22 talking about, you know, the heat rejected by a power
23 plant, okay, that's a calculation. You know, the
24 definition of COP, that's a calculation. All right.
25 So there are formulas I used.

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1 But, you know, your -- the answer to your
2 question is yes. And not to be a wise guy, but it's a
3 combination of both.

4 Q. And just to follow back through, the
5 methodology that you have used in this case, have you
6 ever -- or theories that you've applied in this case,
7 have you ever published any material with respect to
8 that methodology and these -- those theories?

9 A. No. The two articles that we talked about
10 earlier, the only -- I shouldn't say that. I did write
11 another article, I think, for a trade magazine about
12 using contract engineers, but it has nothing to do with
13 this case. Those are the only technical articles that
14 I've written.

15 Q. Can you identify any literature that would
16 support the theory or methodology that you've applied
17 in this case?

18 A. The whole body of mechanical engineering work
19 related to thermodynamics.

20 Q. But there's no specific literature that you
21 would point me to?

22 A. I'm going to reiterate my answer, sir.

23 Q. Can you summarize, by any chance, that
24 methodology or theory that you've applied?

25 A. I thought I just did.

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1 Q. Well --

2 A. Forgive me, but I -- I thought I just did.

3 Q. Just that it is the -- the experience and
4 knowledge that you've acquired over your --

5 A. And the training.

6 Q. And the training.

7 A. All of the above, yeah. I mean, it's -- you
8 know, engineers think in a certain way. All right.
9 You can ask -- again, to be a little wise guy, you can
10 ask my wife, sometimes I drive her nuts because I'm so
11 logical. All right. So engineers think in a -- you
12 know, kind of an orderly -- what's the word? I don't
13 want to say constrained, but, you know, a methodical,
14 orderly manner.

15 You know, other people are more -- like
16 artists are more free-form thinkers. All right.

17 Engineers and scientists and technical types
18 tend to be more linear, step-by-step-type thinkers.

19 And, again, I know that's grossly general,
20 but that's about the best I can do to give you a good
21 answer to your question, sir.

22 Q. Can -- can your methodology or theory be --
23 is it possible that that methodology or theory could be
24 falsified?

25 MR. LOMAX: Objection to the form of the

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1 question.

2 A. No. The methodology, if it's blatantly
3 fraudulent, it could be falsified. But, you know,
4 we've all done litigation here in the room. All right.
5 Experts can come to -- we all -- you know, the
6 plaintiff's and defendant's experts come to different
7 conclusions, generally speaking.

8 You know, if they came to the same
9 conclusion, then the case settles. So, you know,
10 people of equal training and so forth and integrity can
11 come to quite different conclusions about the same
12 facts of a case.

13 So I can't answer your question because, you
14 know, honest people can differ on things.

15 Q. Does your methodology or theory have a known
16 error rate?

17 A. How could it? It's qualitative, not -- it's
18 quantitative in some regards, qualitative in another.

19 Q. Are you familiar with any dissenting views to
20 the methods and theories that you've applied in this
21 case?

22 A. Not that I'm aware of now.

23 Q. Are there certain types of questions that
24 your methodology can't answer? For example, the
25 causation of any of the facts that have been reported

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1 or testified to in this case or -- well, let me -- let
2 me restate this.

3 Is there any type of question in this case
4 that you do not believe your methodology can answer
5 with respect to the operation of the E-Cat or the use
6 of the steam, such as why certain measurements resulted
7 in the way that they did?

8 MR. LOMAX: Objection to the form of the
9 question.

10 A. Could you break -- break -- that's a little
11 -- could you break that down step-wise for me, please?

12 Q. Okay. I understand that you believe that the
13 E-Cat did not produce much, if any, steam?

14 A. Correct. Your understanding is correct.

15 Q. Does your methodology allow you to opine as
16 to why the recorded results by various different
17 equipment indicate that steam was created?

18 A. I would -- I would disagree with your
19 contention that there may be recorded results. I'm
20 starting to become of the opinion that the numbers were
21 manufactured and not necessarily genuinely and
22 legitimately recorded.

23 Q. Okay. We'll -- we'll go through that.

24 A. I'm sure we will.

25 Q. Do not worry.

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1 Have you ever worked with LENR projects prior
2 to this case?

3 A. No, sir.

4 Q. Have you ever reviewed test plans prior to
5 this case for LENR technologies?

6 A. Not for LENR, no.

7 Q. What about other power plants, power
8 producing plants?

9 A. Yes, I have.

10 Q. Okay. In what context?

11 A. When we put the coal-fired boiler in at Ohio
12 State University, I was -- I was the backup engineer on
13 that. There was an older engineer. He was the prime
14 on that one. I was the prime engineer on the steam
15 line that we talked about earlier.

16 So as a part of that closeout process after
17 the boiler was built and up and running, we used the --
18 and, again, this is an old version of it, but we
19 modified an ASME, American Society of Mechanical
20 Engineers, they call them performance test codes now,
21 but we took this, modified it to our own use to
22 actually determine what was the boiler doing. And we
23 did a similar thing for the generator. We measured the
24 steam input, the temperature, all that other stuff,
25 measured the electrical output so that we'd have an

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1 accurate determination of the efficiency of the boiler
2 and the efficiency of the turbine generator.

3 Q. Okay. So -- and let me kind of circle back
4 around because maybe I don't understand how boilers
5 work.

6 But from the 10,000 foot level with a boiler
7 --

8 A. Sure.

9 Q. -- is it generating energy?

10 A. It's -- a boiler -- all right. A boiler is
11 kind of like an automobile. All right. Our car --
12 because everybody is familiar with a car, that's why I
13 often use automotive analogies when I'm teaching. A
14 car has got a motor, it's got doors, a hood, seat, a
15 fuel tank, drivetrain, tires, brakes, all that stuff.
16 All right. Collectively we call that a car or an
17 automobile or truck, whatever vehicle. All right.

18 A boiler is the same in that semantic regard.
19 A boiler has lots of different components. It's got a
20 burner, it's got a control system, it may have an ash
21 removal system, it's got a draft system, fans, all
22 those other systems that we collectively call a boiler.
23 Okay.

24 So the burner itself, the burner is the, what
25 I call the front end of the boiler. The burner

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1 converts -- and, again, let's just use a gas-fired
2 boiler. All right. A burner is the energy conversion
3 device that takes the chemical energy in the fuel,
4 converts that to heat energy in the form of a flame,
5 and then hot gas when the flame burns out, and then
6 that hot gas passes through the boiler.

7 What we call the boiler proper is actually a
8 heater exchange then that extracts heat from that gas,
9 puts it into the water.

10 That's why my answer early in the deposition
11 about heat exchangers, a boiler, technically, is a heat
12 exchanger. Okay.

13 And then in the case of like the boiler here
14 at OSU or big utility units where we need superheat,
15 then the steam will actually leave the boiler itself,
16 the boiler steam drum, and go to a separate set of
17 tubes called a superheater, which then adds heat over
18 and above the saturation temperature of the steam to
19 put hot dry steam into the turbine.

20 Sorry about the long answer, but that was
21 about as short as I could make it, sir.

22 Q. So in summary, a boiler does not generate
23 energy, it -- it consumes it and transfers energy from
24 one point to another?

25 A. Right. But the boiler -- and let me -- let

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1 me break your question down, if I may, to help you.

2 The boiler proper is the heat exchanger. It absorbs
3 heat and then transfers it from the gas to the water.
4 The burner is actually the energy conversion device.

5 So if you take the two as a whole, you are
6 correct. We're bringing in chemical energy, whether
7 it's coal, gas, oil, whatever it might be, converting
8 that energy into heat and then putting in the water to
9 do something useful with it someplace else.

10 Q. Now, have you ever worked with an energy
11 generation plant, a plant that generates energy as
12 opposed to transfers energy from one form to another?

13 A. When you say --

14 Q. Well, let me --

15 A. Help me out, please.

16 Q. Have you ever worked in a nuclear power
17 plant?

18 A. No, I've not.

19 Q. Okay. To your understanding, sir, how
20 does -- understanding the first law of thermodynamics
21 that energy can neither be created nor destroyed --

22 A. Right.

23 Q. -- how does that work with a nuclear power
24 plant?

25 A. Again, I'm not a nuclear engineer, but my --

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1 and, again, this is where I believe Dr. Wong is at
2 variance with Dr. Wark, but I think -- I believe even
3 Dr. Wong thinks that nuclear plants do not necessarily
4 obey the first law. Okay.

5 Having said that, my understanding is you
6 take a more fissile form of -- it's usually uranium,
7 like 235 typically, and then that energy that's in the
8 atomic structure as opposed to the molecular structure
9 breaks down into heat as it decays, and then that heat
10 is used as the heat source for the boiler. So we're
11 going from a more concentrated energy source and then
12 into a lower energy source.

13 I believe -- and, again, not being a nuclear
14 engineer, but I believe that there's still -- you know,
15 instead of using -- let's just say to generate a
16 certain amount of power, instead of using a gazillion
17 tons of coal, a nuke plant might use a hundred pounds
18 of uranium fuel or a ton of -- you know, whatever.
19 Okay.

20 So the energy form is much more concentrated,
21 but I don't believe that nuclear plants are capable --
22 and I could be wrong, but I don't believe nuke plants
23 are capable -- I don't believe they violate either the
24 first or the second law.

25 Q. What about -- what about chemical energy, how

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1 -- how does chemical energy -- chemical energy plants,
2 either coal or otherwise, how does that work?

3 A. Again, you're just taking the chemical energy
4 that's combined in the fuel -- that's contained in the
5 fuel and then releasing that in a combustion process to
6 reduce -- release that chemical energy that's within
7 the molecular bonds.

8 Q. Okay. So when you're considering the
9 efficiency of whether it be a chemical plant or a
10 nuclear plant, you consider the amount of energy it
11 takes to enable this reaction to occur, correct?

12 A. Yeah. I think if I'm understanding you
13 correctly, yeah.

14 Q. And you compare that with the amount of
15 energy that is released either by the chemical process,
16 or in the case of a nuclear plant, by the decay of the
17 atomic matter?

18 A. Help me. Could you break that down? I'm --

19 Q. Well, considering the first law of
20 thermodynamics --

21 A. Okay.

22 Q. -- I mean, it can never be created or
23 destroyed?

24 A. "It" being?

25 Q. "It" being energy.

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1 A. Correct.

2 Q. Okay.

3 A. And matter and energy can neither be created
4 or destroyed, they only change form.

5 But go ahead, my apologies.

6 Q. In a nuclear power plant, you would agree
7 that the energy required in a plant to operate, turn
8 the lights on, turn the machines on, put the control
9 rods in, et cetera, is less than the amount of energy
10 that is put out by that plant, correct?

11 A. Oh, yeah, yeah.

12 Q. Substantially less?

13 A. Oh, yes. Yeah. It's called parasitic power,
14 but yeah. And that's true -- that's true of any power
15 plant. You need a certain amount of power to run the
16 fans. Like you say, all that power that's required to
17 run the plant is subtract- -- again, depending on where
18 you want to draw the boundary of where -- how you
19 define the efficiency, and that could be a long
20 discussion, too, but, yeah, that -- that energy is --
21 has to be consumed to run the plant, you are correct.

22 Q. Okay. So in that case, for example, a
23 nuclear power plant, the amount of energy input into
24 this facility, I'll call it Turkey Point down in
25 Miami --

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1 A. Okay. Sure.

2 Q. -- or otherwise --

3 A. Yeah.

4 Q. -- the energy going into the facility is
5 substantially less than the energy coming out of the
6 facility, correct?

7 A. When you say the energy coming in, meaning
8 the energy released by the reaction? Help me out here.

9 Q. That's the energy going out.

10 A. So are you -- when you say the energy coming
11 -- the energy coming in, the energy is contained in the
12 fuel rods.

13 Q. Okay.

14 A. In the fuel. Okay.

15 Q. Okay. Go ahead.

16 A. Please run that by me again one more time. I
17 apologize.

18 Q. I tell you what, we'll come back to it.

19 A. I apologize.

20 Q. We will come back to it. I'll tell you what,
21 I don't want to spend too much time.

22 A. I apologize.

23 Q. Did you perform any tests or simulations of
24 your own with respect to any of the facts or opinions
25 that you've rendered in this case?

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1 A. You mean in tests as in physical -- like
2 metallurgical or anything like that, no, sir, I did
3 not, although I do -- do reserve the right if, you
4 know, if need be.

5 Q. Okay. Does your report contain the complete
6 basis of and reasons for your opinions stated therein?

7 A. It does at the time of the report. Other
8 information has since come in. And, again, that's part
9 of why I keep making this caveat about, you know,
10 information coming in and me possibly modifying my
11 report.

12 But at -- at the time it was written with the
13 information I had, I stand by it.

14 Q. Okay. Is there anything that you would
15 change sitting here today regarding your report?

16 A. Well, again, you know, I did not add that I
17 don't believe -- in the report I didn't say that I
18 don't believe that it was producing -- not producing
19 steam.

20 Did I say that clearly?

21 I did not opine that the E- -- I don't
22 believe the E-Cat is not -- the E-Cat is not producing
23 steam, in my opinion. There we go. All right.

24 Q. Were you aware that Mr -- Mr. Stokes, who
25 testified in this case, testified -- in fact, you've

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1 relied upon his testimony, that he testified that he
2 was there when there was a minor steam leak?

3 A. Well, I read that. And the thing is, even
4 200 degree water will vapor and produce vapor. And so
5 if he saw a steam leak -- and, again, he was a nukie in
6 the Navy. He understands steam reasonably well, I
7 would understand, there may have been very, very hot
8 water that when it leaks out, it's going to give the
9 appearance of a steam leak, and that's what he may have
10 thought was going on.

11 Again, you know, he was there to do a
12 radiological study, not necessarily a steam system
13 survey like I do on a semi-regular basis.

14 Q. So he couldn't tell the difference between
15 water in a gaseous form as opposed to water in a liquid
16 form?

17 MR. LOMAX: Objection to the form of the
18 question.

19 A. I -- run that by me again.

20 Q. Well, you said the water could have been
21 releasing in a man- -- in a manner that appeared to be
22 steam?

23 A. Well, steam is invisible. You can't see it.
24 Water vapor, condensed steam you can't see. You cannot
25 see steam. And not only you, nothing personal, nobody

1 can see steam. So he may have very well seen vapor,
2 which he called steam.

3 Q. Within your report of the opinions that
4 you've expressed, are there any that you would change
5 or retract from?

6 A. Nothing I would retract. I would amend it as
7 we've talked about, but nothing I would retract right
8 now, no, sir.

9 Q. Other than Dr. Penon's original form -- I'm
10 sorry, original spreadsheet and the site inspection, is
11 there any further research that you would find
12 desirable?

13 A. At this time, no. But, again, if it needs
14 be -- if -- if based on other -- those issues, yeah, I
15 reserve the right to -- to do more, if need be.

16 MR. ANNESSER: It's 12:30. We've reached a
17 good stopping point for the moment.

18 THE VIDEOGRAPHER: Off the record. The time
19 is 12:26.

20 - - -

21 Thereupon, the luncheon recess
22 was taken at 12:26 p.m.

23 - - -

February 27, 2017

Monday Morning Session

1:13 p.m.

- - -

THE VIDEOGRAPHER: We are on the record. The time is 1313.

BY MR. ANNESSER:

Q. Sir, before we took a lunch break, we were going through your report.

And do you still have that in front of you?

A. I do, yes, sir.

Q. Okay. If I could ask you to turn to page 9.

A. I'm there.

Q. Okay. Looking at the first paragraph on page 9 of the section entitled E-Cat MW1 Energy Plant Final Report --

A. Yes.

Q. -- the last sentence in that paragraph I believe states that Penon is referred to as the expert responsible for validation in various documents, and will be referred to as such, although the author expresses no opinion on whether Engineer Penon was the ERV as specified in the parties' contractual documents.

Do you see that?

A. I do.

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1 Q. What was the purpose of that statement?

2 A. Let's see, looking at various documents --
3 yeah, at that time, I had not -- and I don't think I've
4 seen -- whatever contract documents I had seen were in
5 the complaint and the third supplemental. So I didn't
6 know for a fact that, you know, in the documents
7 themselves whether Penon was specifically designated.

8 So I -- I didn't know, so I just kind of put
9 that in as a cover-my-backside statement so that if he
10 was, in fact, I was -- you know, I was okay. If he
11 wasn't, I was okay. I just want to kind of preserve
12 that.

13 Q. Did anyone tell you that that was an issue in
14 this case?

15 A. I -- I think they mentioned it in passing,
16 but they didn't -- you know, they didn't make a big
17 deal of it, so I -- you know, I just kind of didn't pay
18 a lot of attention to it.

19 Q. Turning to the next page, page 10, sir --

20 A. Yes.

21 Q. -- you state on the beginning, this author's
22 search of the Internet reveals a prior relationship
23 between Dr. Penon and Mr. Rossi. If true, this author
24 wonders how Dr. Penon could have been an objective,
25 dispassionate third-party verifier.

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1 A. Correct.

2 Q. What is the relationship that you have
3 uncovered on the Internet?

4 A. Well, again, there's a lot of stuff in the
5 LENR world about them. And then, you know, on the
6 Internet, I had observed that they had done some work
7 together, I don't remember the date, prior to this
8 particular project. Okay.

9 Q. Do you know if Industrial Heat or IPH
10 International B.V. were aware of the prior
11 relationship?

12 A. I do not know that. And, actually -- and,
13 again, it was after the fact of my report, obviously,
14 but last week, Dr. Penon pretty much admitted to that,
15 too, under questioning.

16 Q. Okay. Does that affect your -- did that
17 information or your belief that there was a prior
18 relationship affect your report in any manner or your
19 opinions?

20 A. It -- it would -- it would make me tend to
21 look at his data more skeptically than if he had just
22 been, I say -- forgive the phrase -- some guy off the
23 street. But an independent party that had no prior
24 relationship with either Mr. Rossi or anybody, he was
25 just a totally independent expert that had come in to

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1 do the numbers and runs the tests and so forth.

2 Q. Is it your opinion that the prior
3 relationship between Dr. Rossi and Dr. Penon, if any,
4 has somehow caused there to be -- well, somehow
5 affected Dr. Penon's reporting in this case?

6 MR. LOMAX: Objection to the form of the
7 question.

8 A. Obviously I cannot speak to that because I
9 don't know the relationship and so forth. But for my
10 -- my perspective, it -- it casts a bit of a shadow on
11 the results, if you will.

12 And, again, you know, everything may be on
13 the up and up. I'm not willing to concede that. But
14 the fact of a prior relationship, in -- in my opinion,
15 tends to lessen my belief in Dr. Penon's total
16 objectivity.

17 Q. Have you ever worked with any attorneys in
18 the capacity of an expert witness more than once?

19 A. Oh, yes. You know that, yeah, I have. Oh,
20 wait. I'm sorry. You mean with the same attorney?

21 Q. Yes.

22 A. Yeah, Mr. McLaughlin. The guy that Dauberted
23 me, yeah. Yeah, I worked for him twice and then he ran
24 the Daubert challenge on me.

25 Q. Is -- is the work that you've done for him

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1 more than once suspect because of your prior
2 relationship?

3 MR. LOMAX: Objection to the form of the
4 question.

5 A. I don't think it is. But, again, somebody in
6 your position may -- may -- you know, may want to
7 question that.

8 Q. Do you have any other repeat clients?

9 A. I think he's the first one, the first and
10 only, I believe.

11 Q. So you've got no other clients who have used
12 you and then used you again for another project?

13 A. Now you're talking expert witness clients or
14 --

15 Q. Either.

16 A. -- engineering?

17 Q. Either.

18 A. Oh, yeah, I have a lot of expert repeat
19 business, yes. Volcanic has used me a lot, Damon
20 Engineering has used me a lot. Yeah, so I have lots of
21 repeat business, yes.

22 Q. Is your work for repeat clients any different
23 than your work for new clients in terms of the accuracy
24 of your reports?

25 A. No. No. I try to be, you know, down the

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1 line and objective and correct as I can, and accurate.

2 Q. So the fact that Dr. Penon had previously
3 tested the E-Cat device does not invalidate his final
4 report in this matter in and of itself?

5 A. In and of itself, maybe, maybe not. I'm just
6 saying it raises a question in my mind.

7 Q. Well, maybe, maybe not.

8 How would it invalidate the test that he had
9 done a prior test on the --

10 A. I don't know the nature of their
11 relationship. That's the point. You know, my
12 relationship with my clients was purely business.
13 Okay. I do not know the nature of their relationship.
14 So depending on what it was, it could or could not have
15 an effect on it.

16 Q. What methodology or theory did you use to
17 come to that conclusion?

18 A. Well, there's no methodology or theory, just
19 does it pass the smell test or not.

20 Q. Now, I'd like to ask you for a minute about
21 what you're not opining to. Okay.

22 Are you opining to issues regarding the test
23 protocol, whether the test protocol was proper?

24 A. I am opining to that, yes.

25 Q. Are you opining to any issues regarding the

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1 adherence to the test plan?

2 A. I am.

3 Q. Adherence?

4 A. Yes.

5 Q. Okay. And what is your opinion as it
6 pertains to adherence to the test plan?

7 A. I'm not -- depending on some words and so
8 forth, I'm not sure that Mr. Penon totally adhered to
9 it.

10 Q. You're not sure?

11 A. Correct.

12 Q. Are you offering an opinion as to whether he
13 did or did not?

14 A. Well, let me elaborate a little if I may.
15 There's some -- and I didn't -- I did not delve into
16 this, again, because of time constraints.

17 My understanding was at the beginning of the
18 test, that this test was to be run with all of the
19 units or modules running. At some times throughout the
20 test, various modules were shut off. That would appear
21 to us on the surface to be a violation of the -- of the
22 protocol.

23 Q. Sir, looking at page 10 of your report, it
24 states, defendants' third amended answer, additional
25 defenses, counterclaims and third-party claims

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1 identifies many issues regarding the test protocol,
2 adherence to the original test plan, number of cells in
3 service, related issues. Due to time constraints, the
4 author will not address these issues in this report --

5 A. Continue, please.

6 Q. -- but reserves the right to address them in
7 the future.

8 A. Yes, sir.

9 Q. So do you believe it fair to tell us that you
10 will opine to this later, but cannot tell me right now
11 or could not tell us at the time of --

12 A. It is fair, yeah, because like I said, I did
13 not and I still have not had time to opine to that.

14 Q. Okay. And you can't tell me what your
15 opinion is at this point in time?

16 A. Not with any specificity, no, so I will not
17 opine.

18 Q. Okay.

19 A. But I still reserve the right to.

20 Q. The court determines what you are permitted
21 to opine to within its realm, but you're certainly
22 entitled to any opinion you may have outside of the
23 court.

24 MR. LOMAX: Objection.

25 Q. Are you opining as to how LENR works?

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1 A. No, I'm not. But let me, if I may, get back
2 to a question you asked before lunch. And while I was
3 trying to take a nap, your question was rattling around
4 in my brain.

5 And your question was to the effect, does a
6 conventional nuclear plant produce more energy than it
7 uses. And I hope I'm not misstating your question. If
8 I am, please stop me now.

9 Q. Well, there's no pending question, but --

10 A. Okay. If I'm assuming -- if I heard your
11 question properly, the answer to that -- that narrowly
12 -- and it appears -- and, again, no offense intended,
13 that you might have been conflating terms. And let
14 me -- let me use a quick numerical example, if I may.

15 Let's say a conventional nuke plant produces
16 1050 megawatts. That would be its gross electric --
17 and when I say -- I'm talking electric megawatts,
18 not thermal, okay. It may have an internal usage of
19 50 electric megawatts, again, for pumps, fans,
20 controls, rods, blah, blah, blah, so it has a plant
21 net output of a thousand megawatts electrical.
22 Okay.

23 Now, the reac- -- and, again, not being a
24 nuclear engineer, but the reaction that is going on
25 inside the reactor may be -- and, again, this is

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1 just an example for illustration -- may be producing
2 2500, 3000 thermal megawatts to generate one hundred
3 -- or 1050 megawatts of electrical power. The
4 balance of that thermal energy generated is going to
5 the cooling tower.

6 So the efficiency, if you will, of a
7 conventional nuclear plant is still going to be on
8 the order of 35 to 40 percent because it is using
9 more thermal energy from the nuclear reaction than
10 it is producing, if I'm making sense.

11 If the nuclear reaction generates, let's
12 just say 3000 megawatts of thermal heat, the plant
13 is producing a thousand megawatts of electrical,
14 then the rest of that heat has to go to the cooling
15 tower. And every conventional nuclear plant has a
16 cooling tower to get rid of that waste heat. So the
17 conventional efficiency of a nuclear power -- or
18 conventional nuclear power plant is always less than
19 unity.

20 Q. Okay. How much energy is generated by the
21 reaction taking place in the E-Cat?

22 A. You mean how much energy -- are you asking me
23 how much energy is the E-Cat putting out? Is that --
24 is that your question?

25 Q. No. I'm asking you, how much is generated?

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1 So, for example, in the example that we were just
2 discussing where the plant put out 10,050 megawatts --

3 A. Right.

4 Q. -- and it consumed 50, correct?

5 A. Well, when you say "consumed," yeah,
6 parasitic power. I call it parasitic, but, yeah.

7 Q. Parasitic power of 50?

8 A. Uh-huh.

9 Q. Okay. What would the numbers be for the
10 E-Cat?

11 A. I don't know.

12 Q. Do you know what type of reaction is taking
13 place there? I believe I asked you that before.

14 A. Uh-huh. And, again, I do not know. What I
15 believe it to be is just a conventional electric --
16 electric resistor reaction.

17 Q. Have you seen any plans for the E-Cat?

18 A. I've got a drawing I pulled off the Internet.
19 I don't know if they're plans, but I've seen something
20 that appears to show what the E-Cat looks like.

21 Q. Where did you get that drawing? Do you have
22 it with you?

23 A. I certainly do.

24 Q. While you look at that, have you reviewed
25 Dr. Rossi's patent?

1 A. His?

2 Q. Patent.

3 MR. LOMAX: Objection to the form of the
4 question.

5 A. I looked through it. I did not study it. I
6 scanned it. Thank you.

7 Q. All right. You know what, I'll move on.

8 A. I know it's in here, yeah. It's in the
9 stack.

10 Q. Something you pulled off the Internet,
11 though?

12 A. I did. And it purports to show a cutaway of
13 the E-Cat. And I think the fellow's name that did it
14 was Bob Higgins, who I understand to be -- that have
15 worked with Dr. Rossi on other projects. Again, that
16 may not be true, but right now I believe that to be the
17 case.

18 Q. Did you -- did you rely upon that information
19 in formulating --

20 A. No. I just -- I just found that out
21 recently.

22 Q. Okay. So you're not going to be testifying
23 as to the nature of the reaction that's taken place?

24 A. Other than the fact that I don't believe it
25 can produce more energy than it consumed, I will --

1 that I'm not going to back off from, sir. Okay.

2 Q. We'll come back to that.

3 You're not also testifying regarding the fact
4 that a heat exchanger would have on heat transfer at
5 the Doral facility; is that correct?

6 A. Say again, please.

7 Q. Are you aware, sir, that there was a heat
8 exchanger at the Doral facility?

9 A. Where?

10 Q. Are you aware of that? Did anyone tell you
11 that, sir?

12 A. I've been told there have -- there's multiple
13 heat exchangers, so that's why I'm saying where. I'm
14 not trying to be difficult. I need to know which one.

15 Q. Okay. What have you been told?

16 A. Well, I've been told that there was one in
17 the black box, I've been told there was one in the mezz
18 and --

19 Q. And the mezz, what's the mezz?

20 A. Mezzanine, the area over the office.

21 Q. The second floor?

22 A. In the front of the -- and, yeah, second
23 floor in the front of the building.

24 Q. Okay.

25 A. And actually, the E-Cat itself is a bit of a

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1 heat exchanger, because you -- again, regardless of the
2 technology, putting the technology aside, the E-Cat is
3 giving off heat. We will agree to disagree of the
4 manner thereof. Okay. But then that heat-by-heat
5 exchange process goes into the water to heat it up.

6 Q. Okay. Are you opining as to the dissipation
7 of the heat being generated by this system and where
8 that heat could have gone?

9 A. Or not gone, yes.

10 Q. Or not gone. Okay. Did you perform any
11 calculations to determine how much heat could have been
12 dissipated by the heat exchanger in what you called the
13 mezzanine, the second floor?

14 A. Well, A, I'm not sure that that heat
15 exchanger ever existed because I have no pictures of
16 it, I have no drawings of it, I have no calcu- --
17 calculations prior to Dr. Wong's report.

18 Two people claim to have seen it, so I'm not
19 sure that it even exists, so it's going to be hard for
20 me to answer your questions with any specificity on a
21 device that may or may not have existed.

22 Q. Okay. So you said you haven't seen any
23 pictures of it.

24 Did you ask for pictures of it?

25 A. Who would I ask, Counsel?

1 Q. Anyone.

2 A. I probably did. You know, I can't say for
3 sure, but I said, well, show me something.

4 Q. Okay. Did you ask for any drawings of it?

5 A. Again, something would incorporate everything
6 that I've referenced here, sir.

7 Q. Did you ask whether there was a heat
8 exchanger on the site at all?

9 A. Who would I ask?

10 Q. Counsel, anybody, Mr. Murray.

11 A. I believe -- I probably -- I think I did ask
12 Mr. Murray. But, again, nobody on our side has been
13 allowed into -- into the gray wall, so we wouldn't --
14 our side -- I say our side -- how would we know,
15 because we've not been allowed access to it, if it
16 existed.

17 Q. So your assumptions are all based on the
18 fact -- your opinion is entirely based on the
19 assumption that there was no heat exchanger; is that
20 correct?

21 MR. LOMAX: Objection to the form of the
22 question.

23 A. It's not an assumption that there was no heat
24 exchanger. There's never -- there was no heat
25 exchanger mentioned until after my report came out,

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1 which I find a little suspicious, quite frankly, sir.

2 Q. There was no heat exchanger mentioned to you?

3 A. Correct.

4 Q. Okay. But you don't know whether there was
5 one there or not?

6 A. I'm going to assume there was not until I see
7 some hard evidence of it.

8 Q. Okay. And the testimony of witnesses isn't
9 sufficient for you?

10 A. Let's see, considering that one of them is
11 Mr. Rossi and one was Mr. Bass, yeah, I'm a little
12 skeptical of that, sir, with all due respect.

13 Q. Okay. So you're basing your opinion on that
14 matter, the fact that there was no heat exchanger,
15 on -- on your evaluation of their testimony?

16 A. I'm not saying there was no heat exchanger at
17 this point. I'm saying I'm from Missouri, show me,
18 please.

19 Q. Okay. Have you been selected as a juror in
20 this case?

21 MR. LOMAX: Objection to the form of the
22 question.

23 A. What's your question mean?

24 Q. Well, I'll retract it.

25 Would you agree that if there was a heat

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1 exchanger, sir, that it would, in fact, negate some of
2 your opinions as set forth in your report?

3 MR. LOMAX: Objection to the form of the
4 question.

5 A. Absolutely not.

6 Q. Your -- your report was predicated upon the
7 assumption that there was no heat exchanger, correct?

8 A. Correct.

9 Q. Okay. So if there was a heat exchanger,
10 there would be different variables that you had not
11 accounted for in this report, correct?

12 A. I -- I can't answer that. Knowing nothing
13 about it and -- and a heat exchanger, even if it's
14 installed, may not work. There may have been a heat
15 exchanger there; it may not have functioned.

16 Q. But you don't know one way or another. If
17 there was a functioning heat exchanger there, sir,
18 would that change the findings in your report?

19 A. It may, it may not. It probably will not.

20 Q. Why is that?

21 A. Because, again, I don't believe it was there,
22 based on my understanding of thermodynamics and what I
23 have -- what pictures I have seen of the facility, I
24 have no reason to believe that it was there.

25 Q. Well, I'm asking you to assume, sir, that it

1 was.

2 A. I'm not taking that assumption. Sorry.

3 Q. Okay. Are you making or giving any opinion
4 as to whether this was the guaranteed performance test
5 required under the parties' contract in this case?

6 MR. LOMAX: Objection to the form of the
7 question.

8 A. I'm not speaking specific to the contractual
9 obligations. What I'm basing mine on is the test plan
10 report and then Dr. Penon's final report.

11 Q. Did anyone from Industrial Heat or counsel
12 inform you that they had never objected to Penon's test
13 plan?

14 MR. LOMAX: Objection to the form of the
15 question.

16 A. I believe I've heard that, yes.

17 Q. Okay.

18 A. In fact -- well, even last week during -- you
19 questioned Dr. Penon quite extensively on that.

20 Q. Did anyone ever tell you why they had not
21 objected?

22 MR. LOMAX: Objection to the form of the
23 question.

24 A. No, that, I'm not privy to that, no, sir.

25 Q. How long did it take you to evaluate the

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1 Penon test plan?

2 A. I don't recall.

3 Q. An hour?

4 A. I just said I don't recall.

5 Q. Can you tell me roughly, was it more than ten
6 hours?

7 A. Less than ten hours.

8 Q. Less than ten hours.

9 Had you been asked prior to this litigation
10 to review the test plan, could you have done so?

11 A. Oh, sure. Yes. Yes.

12 Q. And you -- it's your belief that you would
13 have looked at the same plan and said this isn't
14 sufficient, something has to change?

15 A. More than likely, yes.

16 Q. Did you review the Lugano test reports? Do
17 you know what I'm talking about there?

18 A. I looked at them. I did not study them in
19 depth.

20 Q. Okay. Are you aware that a test was
21 performed in Lugano by a number of Swedish and/or
22 Italian professors?

23 A. I'm vaguely aware, yes.

24 Q. Okay. Are you opining at all as to the
25 validity of the Lugano test reports?

1 A. No. The Lugano test did not -- it did not
2 play into my opinions, sir.

3 Q. Okay. Are you aware of what test plan was
4 used in Lugano?

5 A. No.

6 Q. What about the validation test that was
7 performed as part of this, as part of the parties'
8 contract?

9 MR. LOMAX: Objection to the form of the
10 question.

11 Q. Are you familiar with what I'm talking about?

12 A. Now, are you talking -- are you Lugano or
13 back to U.S.?

14 Q. I'm asking about a validation test. Are you
15 aware that a test was performed in -- in Italy, in
16 Ferrara, Italy called the validation test?

17 A. I am aware, yes, sir.

18 Q. Okay. Did you review the test protocol used
19 for that test?

20 A. I'm not sure I reviewed it prior to my
21 report. I know I reviewed it afterward.

22 Q. Are you --

23 A. I'm pretty sure.

24 Q. Are you opining as to the sufficiency of that
25 test?

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1 A. If it is -- if it's substantially similar to
2 the U.S. test, my opinion will be pretty much the same.

3 Q. Do you know if it is or isn't?

4 A. I'll have to look and study it line by line.
5 I haven't dug into that. I haven't drilled down into
6 it that deeply.

7 Q. You don't plan on testifying, do you, sir,
8 that the validation test performed in Ferrara, Italy
9 was improper, do you?

10 A. Again, I haven't -- I've looked at it. I've
11 not studied it in depth. I can't answer your question
12 right now.

13 Q. Okay. But sitting here today, that's not an
14 opinion that you've formed?

15 A. Not right now, no.

16 Q. Now, in your report, specifically the third
17 report on page 10, you state that you have not -- that
18 you have seen no documentation of the machine itself,
19 is that correct, regarding the E-Cat?

20 A. Correct.

21 Q. Have you seen any as of this date?

22 A. Other than the -- you know, I mentioned that
23 picture I saw on the Internet that I couldn't find.
24 And, again, I'm -- I'm talking the machine proper, not
25 necessarily Dr. Penon's report. So with that caveat,

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1 no, I have not seen documentation of the machine
2 itself.

3 Q. Okay. So are you opining as to the operation
4 of the machine itself, or just simply Dr. Penon's
5 report?

6 A. Both.

7 Q. Even though you've seen no test plan of the
8 machine -- or, I'm sorry, no documentation of the
9 machine?

10 A. Correct, because I'm a boiler expert, I
11 understand boilers. The machine in question is a
12 boiler, so I can make -- and I understand
13 thermodynamics, so, yes, I can opine.

14 Q. As to whether the E-Cat works?

15 MR. LOMAX: Objection to the form of the
16 question.

17 A. Could you be more specific on "works"?

18 Q. Are you opining as to whether the E-Cat is
19 capable of generating 1 megawatt worth of power?

20 A. I am opining on that, yes, sir.

21 Q. Even though you have not seen any
22 documentation on the machine itself?

23 A. The documentation on the machine may be
24 fraudulent. The other information I've seen and the
25 analysis I've done leads me to believe that it does not

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1 work.

2 Q. Okay. Let me ask you, you said it may be
3 fraudulent.

4 What facts or evidence have you been shown to
5 that effect or what do you base that opinion on?

6 A. In looking at some of the data and so forth,
7 it looks very, very suspicious, the fact that I've
8 been -- I'm asked to opine on a heat exchanger that
9 there's -- I've seen nothing on.

10 In actuality, in looking at a lot of
11 Fabiani's data and looking in some of the things I've
12 seen, it appears a lot of this data were made up.

13 Q. Okay. We're -- we're going to get to that.
14 But you said you were asked to opinion on a heat
15 exchanger that you've seen nothing on.

16 Did you request any information on the E-Cat
17 unit from counsel?

18 A. I believe I did.

19 Q. Did you receive it?

20 A. No.

21 Q. Okay.

22 A. Now, I take that back. I take that back. I
23 did get some pictures recently -- a picture.

24 Q. Of?

25 A. Not the machine itself, but the window on the

1 front of the building.

2 Q. Okay. And what did that picture show you?

3 A. Sir, I don't --

4 - - -

5 (Deposition Exhibit 10 marked.)

6 - - -

7 Q. Who took this photo, sir? And we're going to
8 mark this, I'm sorry, as Exhibit 10.

9 Do you have a copy in front of you?

10 A. I do.

11 Q. May I borrow it, please?

12 A. Oh, yeah. I'm sorry. My bad.

13 Q. I'll mark that as Exhibit 10.

14 Who took this photo?

15 A. I believe Joe Murray.

16 Q. You believe or you know?

17 A. Actually, I know, because Mr. Murray gave it
18 to counsel and counsel gave it to me.

19 Q. How do you know that?

20 A. I was told that by counsel.

21 Q. You were told that by counsel.

22 Do you know who took this screenshot or who
23 superimposed this --

24 A. I know exactly -- I know exactly who did it.

25 Q. Who?

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1 A. Me.

2 Q. Okay. Now, it doesn't state on here who took
3 the photograph.

4 A. Correct.

5 Q. Is there a reason --

6 A. Because anybody could use any camera. Unless
7 somebody puts a name in their camera, somebody else
8 could use it.

9 Q. Do you know when it was taken?

10 A. I do. I do.

11 Q. How do you know when it was taken?

12 A. Because there's a date taken right up there
13 in the property on the right-hand side of the page.

14 Q. Other than what's reflected here --

15 A. That's the metadata off the JPEG.

16 Q. Now, if I change the date on my camera and I
17 take a photograph, wouldn't it reflect the date that my
18 camera records onto that image?

19 MR. LOMAX: Objection to the form of the
20 question.

21 A. Oh, yeah. But this was taken -- I believe it
22 was taken with an iPhone. So if it was taken with an
23 iPhone, it is going to have the date and time that's --
24 that the cell phone system is producing.

25 Now, with my stand-alone camera, any little

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1 stand-alone camera, yeah, you can change the date and
2 time. A cell phone camera, that's the date and time
3 that's on the cell phone.

4 Q. Okay. Looking at this, sir, what does this
5 depict?

6 A. All right. That is the front of the -- the
7 sign on the door says J.M., and that is the front of
8 the Doral -- I say front, the main street facing side,
9 not the loading dock side, of the Doral test facility.

10 Q. And how many photographs -- or, I'm sorry,
11 how many windows are there at the J.M. facility?

12 A. Now, I -- you say "windows." Help me out
13 here. I see -- I see some in the front downstairs,
14 obviously the office area, I see six here, and I
15 believe that's all there are, because there are no
16 windows in the backside of the facility.

17 Q. Now, looking over directly above that appears
18 to be a Cadillac, you see another set of four windows?

19 A. To the left?

20 Q. Yes.

21 A. Correct.

22 Q. And do you know if that column is blocking
23 the view of any other additional windows?

24 A. It may be. I'm not sure.

25 Q. Do you know if those go to the Doral facility

1 or not?

2 A. Help -- can you be more specific?

3 Q. Do you know if those are windows that are
4 part of the Doral location, specifically the -- the
5 facility used by Leonardo Corporation and J.M.?

6 A. As it stands now, I'm reasonably certain of
7 that. Again, a site visit will confirm or deny.

8 Q. Whether -- whether those belong to that
9 facility or not?

10 A. Correct.

11 Q. Okay.

12 A. Assuming we're allowed unfettered access to
13 the facility.

14 Q. Okay. But you don't know sitting here today?

15 A. I have -- I'm fairly confident, because when
16 I had looked at the outside the other day, it looked
17 like that was the only set of windows specific to that
18 address.

19 Q. Did you rely upon this in formulating your
20 opinion?

21 A. No, I did not, because I just got it
22 recently.

23 Q. And what have you relied upon this photograph
24 for?

25 A. Well, this -- you know, again, there was --

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1 Dr. Wong was saying that the heat was discharged
2 through this particular window. And, you know, if it
3 was, in fact, this particular window, it's got some
4 kind of glass or plexiglass -- plexiglass covering on
5 it that would preclude airflow through it.

6 Q. Now, was the test still ongoing as of
7 February 17, 2016?

8 A. To my understanding, it had stopped the day
9 before.

10 Q. Sir, looking at the bottom of page 10, the
11 last paragraph on the page, it states, the Penon
12 reports generally (with some variation) contain certain
13 data. The author understands that these data were
14 provided to Industrial Heat as PDF files and not Excel
15 spreadsheets. The columns are not labeled as in an
16 Excel spreadsheet.

17 What do you mean by that?

18 A. Well, an Excel spreadsheet has, you know, A,
19 B, C, D and so forth over to -- as far to the right as
20 it goes, and we call them labels.

21 Q. Can -- can you convert an Excel spreadsheet
22 to PDF?

23 A. You can.

24 Q. Okay. Why would someone do that?

25 A. If they didn't -- if they wanted to, say,

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1 send it out to somebody and they didn't want the
2 contents changed, they would convert it to a PDF for
3 display purposes and then send it off.

4 Q. Okay. Do you know if that's what was done
5 here?

6 A. I do not know.

7 Q. Okay. So if Mr. Penon did not want anyone
8 altering his data, he may have sent it in a PDF,
9 correct?

10 A. Yes. That would be -- that would be a good
11 reason to do so.

12 Q. Okay. So the fact that Dr. Penon sent the
13 file in a PDF is not indicative as to whether the
14 results are accurate or not, correct?

15 MR. LOMAX: Objection to the form of the
16 question.

17 Q. There's nothing untoward about sending a
18 report in PDF, is there, sir?

19 A. No. No.

20 Q. Now, in PDFs, can you identify the columns
21 and see underlying formulas or values that may have
22 existed?

23 A. No, not that I'm aware of.

24 Q. Okay. Looking -- now, sending it in PDF,
25 that doesn't invalidate the results contained within

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1 the report in and of itself, does it?

2 A. My report or Penon's?

3 Q. Penon's.

4 A. No. The PDF in itself does not validate.

5 Now, just the form- -- let me make it more precise.

6 The PDF format does not inval- -- itself invalidate.

7 Q. Okay. Did you ever ask for the Excel form of
8 that document?

9 A. I did. I did.

10 Q. Who did you ask?

11 A. Probably Pace. I don't know if I asked
12 Mr. Lomax, because Pace and -- and Bernie for sure.

13 Q. Do you know if they ever asked Dr. Penon for
14 an Excel form of that?

15 A. I don't remember. And, again, during the dep
16 last week, Mr. Pace may or may not have asked him for
17 it. I -- I didn't hear that if he did, but the record
18 will show.

19 Q. Do you know if it was ever asked before you
20 prepared this report?

21 A. That, I do not know.

22 Q. Do you know if you asked Mr. Pace for it
23 prior to preparing your report?

24 A. I did.

25 Q. And what did he tell you?

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1 A. He said that they've been trying to get it
2 and they've had no luck, I think was a rough
3 paraphrase, but that's pretty much what he said.

4 Q. And in that portion of your report, did you
5 rely on any special methodology or technique to arrive
6 at your conclusions there?

7 A. Well, I'm moderately good at data analysis,
8 so I did look at the data as best I could under the
9 limitations of a PDF.

10 Q. Looking, sir, to the fourth paragraph down
11 that starts with, The column entitled Average Power
12 Supply --

13 A. Yeah.

14 Q. -- now, you state that this would appear to
15 be the average power supplied to the E-Cat is
16 watt-hours per hour, which equals watts?

17 A. Correct.

18 Q. Some months, watt-hours per hour equals
19 watts, what does that mean?

20 A. Yeah, watt-hours per hour, if you just --
21 because you've got watt-hours of the numerator and
22 hours in the denominator, the hours are canceled,
23 making the unit watts. It's just a numerical
24 convention -- or I should say an arithmetic convention.

25 Q. Okay. You say some months are in watt-hours

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1 and others are in kilowatt hours --

2 A. Correct.

3 Q. -- this difference in units is of no concern?

4 A. Correct.

5 Q. That doesn't bother you at all?

6 A. The units proper, no, no. Because kilo- --
7 kilowatts and watts are -- you know, it's a thousandths
8 difference, so I understand what's going on there.

9 Q. An interesting thing occurs starting June
10 2015. If one takes the number in the column entitled
11 Supplied Energy Watts Per Day and divides it by 24, one
12 gets the exact number in the average power supply?

13 A. Uh-huh, to five --

14 Q. Why --

15 A. -- to five-digit precision.

16 Q. Why is that curious, sir?

17 A. Because, let's see, did I put -- include that
18 in there? Could I -- if you have a copy of that, I'd
19 like to see it so I can -- if you don't mind.

20 - - -

21 (Deposition Exhibit 11 marked.)

22 - - -

23 Q. Sir, I will show you and mark as Exhibit 11 a
24 copy of the E-Cat MW1 Energy Plant in Miami Energy
25 Multiple Evaluation Final Report.

1 So since you say starting in June, let's look
2 at July 2015.

3 A. Okay.

4 Q. Specifically, why not, we'll choose
5 Independence Day, July 4, 2015.

6 A. Good day.

7 Q. Looking at that, sir, why is it curious to
8 you or an interesting thing that if you divide the
9 number that's been given for supplied energy watts per
10 day by 24, that you get that number?

11 A. If you look at all -- all the numbers in
12 supplied energy are rounded to the nearest thousandth.

13 Q. Do you know if -- do you know if the
14 equipment used to measure that measured in kilowatts
15 and watts?

16 A. I don't recall seeing it, so I don't know.

17 Q. You don't know what equipment was used to
18 measure the energy supplied?

19 A. No.

20 Q. Okay. So you're not opining as to whether
21 the equipment was accurate or not with respect to the
22 energy supplied?

23 A. No.

24 Q. Okay. So looking at July 4th, it says
25 200,000 watts per day.

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1 A. Right.

2 Q. Now, correct me if I'm wrong, but that would
3 be 200 kilowatts per day?

4 A. You are correct.

5 Q. Okay. So if we had 200 kilowatts per day or
6 200,000 watts per day, you divide that by 24, which
7 would give you the average hourly supply, correct?

8 A. 8333.3 or use a thousandth and move it over
9 three places, yeah.

10 Q. Why is that curious?

11 A. It's curious because in looking at a number
12 that's rounded to thousandths, and then over in the
13 column before, you go to five-digits precision, that
14 just strikes me as curious and odd. I would think the
15 numbers, the energy supplied would be more of a random
16 nature. As an example, 200,038, 206,015, just to cite
17 two numbers, in which case, then, dividing that by 24
18 would come up with a somewhat different number.

19 I just find it odd to see all these zeros and
20 then divide those by 24 to get that exact number in the
21 column immediately to the left.

22 Q. Okay. You're not saying dividing the
23 supplied energy by 24 was improper, are you?

24 A. Well, I just -- if you're looking at, you
25 know, on an hourly basis versus by 24, it's just a math

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1 calculation. Improper or not, it's just a division
2 problem.

3 Q. Okay. And you were in Mr. Penon's
4 deposition. Did you hear his explanation for the
5 rounded numbers?

6 A. With -- with all of the goings on with the
7 interpreter and stuff, it -- I didn't have as good a
8 comprehension as I would have liked. Sorry about that.

9 Q. So -- so if he rounded to the nearest
10 kilowatt, right?

11 A. If that's --

12 Q. I'm sorry, that's in yours, but if he rounded
13 up to the next kilowatt --

14 A. I do kind of remember him saying that, yeah.

15 Q. -- then that would explain why you have a
16 number such as 200,000, would it not?

17 A. Yeah, it would.

18 Q. Okay. Now, you say that it is interesting.
19 That doesn't invalidate his report, does it?

20 A. Not -- not stand-alone. But it just -- you
21 know, in having analyzed a lot of data over my career,
22 it's usually not this clean and pretty, if you will.
23 When I say "clean and pretty," all these nice zeros.
24 You know, the steam pressure is the same, the output is
25 the same, for the most part.

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1 The data I'm normally seeing is a lot --
2 what's the word I want? I don't want to say dirtier,
3 but less refined, I guess, might be a better word.
4 Okay.

5 Q. Do you know whether this test was designed to
6 measure the specifics and for exactness or whether it
7 was designed to determine whether the device, the E-Cat
8 device satisfied the contractual requirements?

9 MR. LOMAX: Objection to the form of the
10 question.

11 A. Obviously, you know, I'm not -- I've said I'm
12 not dealing with the contractual issues. But were I
13 doing this test, I would try to be as accurate and
14 specific as I can.

15 Considering, again, our disagreement aside,
16 if this technology is valid and it works, the potential
17 import for the human race is pretty big. So were I
18 doing it with those kind of stakes riding on it, I
19 would be as precise as I absolutely could and not round
20 stuff. I'd let it -- you know, what it is is what it
21 is and that's what I'd write down in the report.

22 Q. Is it easy to determine the amount of thermal
23 energy being produced by a power plant?

24 A. Yeah. I mean, it takes work. You've got to
25 have instrumentation and so forth. When you say

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1 "easy," you know, to my standpoint it's easy, yeah.

2 Q. And how do you do that?

3 A. You put in steam flow meters, temperature --
4 you know, steam pressure, steam temperature. You put
5 in the proper instrumentation for the job.

6 Q. Well, specifically, steam flow meter you
7 said, steam temperature?

8 A. Yep. Steam pressure.

9 Q. What else?

10 A. That's just a few of them. If -- if I were
11 going to do a test like this, I'd probably use
12 something like the -- did I mention the ASME
13 performance test code as a backbone and then I'd go
14 from there to start modifying my test based on what we
15 have compared to what the -- you know, the code is
16 designed for big steam generating units.

17 Q. Is that the only way, or is it the best way?

18 A. It's certainly not the only way, but it's an
19 industry standard way that's pretty well recognized
20 across the country.

21 And as I mentioned, you know, for something
22 of this potential import, I would want -- I would want
23 the absolute most rigorous test I could use.

24 Q. And, again, you -- you had been informed that
25 Industrial Heat agreed to the test plan provided by

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1 Mr. Penon?

2 MR. LOMAX: Objection to the form of the
3 question.

4 Q. Am I correct that you had been informed of
5 that?

6 A. I'm sorry, I got crossed up on the objection.

7 Q. You know what, I'll come back to it.

8 Specifically, sir, with respect to what you
9 found interesting, the five-digit precision of the
10 average power supply per hour, did you apply any
11 special methodology or technique or otherwise to come
12 to that conclusion?

13 A. No. And let me clarify, those -- the
14 five-digit precision you just mentioned, that's what --
15 this is what I would be more likely to see on a test
16 report. And then when you multiply that by 24, it will
17 come out to something.

18 Now, you know, if Dr. Penon says he did that,
19 multiplied by 24 and then rounded, I'll stand
20 corrected.

21 But if it was me, again, since we're doing
22 this in Excel, why round? It takes a special round
23 function to do that, which is just an extra step. I'd
24 just let the numbers be what they may. And then when
25 it's all rolled up, maybe then you could, you know,

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1 round it up or down then. But for each of these, I'd
2 just leave them, you know, whatever times 24 and call
3 it a day.

4 Q. But, again, that's -- that's how you would do
5 it, right, sir?

6 A. Yes. Yeah.

7 Q. But because it was rounded by Engineer Penon,
8 does that invalidate his test?

9 MR. LOMAX: Objection to the form of the
10 question.

11 A. It -- it does not. And that stand-alone does
12 not invalidate it, per se. Again, to me, it just
13 looked curious and I commented on it.

14 Q. Was there any special methodology, technique
15 or theory that you've applied to come to that
16 conclusion that it was a curious anomaly, if you will?

17 MR. LOMAX: Objection to the form of the
18 question.

19 A. Having done a fair amount of data analysis,
20 again, just, you know, what we talked about at length
21 earlier, my procedure is to let the numbers fall where
22 they may.

23 Q. Okay. So -- and that's what you relied upon
24 in making that --

25 A. That would -- my methodology was my

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1 experience in data analysis.

2 Q. Now, looking at the next paragraph that
3 starts with, The column entitled supplied energy, this
4 is apparently the daily energy supplied to the E-Cat.
5 If one takes the values in average power supply column
6 and multiplies by 24, one obtains the almost exact
7 value in the supplied energy watts per day.

8 Here is the problem: Instead of a value of
9 24 -- I'm sorry, 247,000, this column on February 6,
10 the author would expect to see a calculation here that
11 would not result in each entry in a rounded number.
12 The report does not explain the calculation or
13 estimation that Penon made to arrive at the reported
14 number.

15 Additionally, this is inconsistent with the
16 Florida Power & Light records, which cast further doubt
17 on the data in Penon's report.

18 I'll just start one step at a time. The
19 first part, is that what we've just been discussing,
20 the same issue that you do not believe that Penon
21 should have rounded his numbers for the supplied
22 energy?

23 A. Correct.

24 Q. You're not saying that there's a problem with
25 the fact that if you multiply the average power supply

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1 watts per hour by 24, that it equals or nearly equals
2 the supplied energy?

3 A. What it -- what it looks like to me is in
4 looking at these numbers, you know, you've got per day,
5 per hour, you take each of these numbers and call them
6 what, the supplied energy watt-hours per day, that
7 column divided by 24, and you get the exact number in
8 the column just to the left, I find that curious,
9 that's what I'm saying.

10 Q. Wait. You -- okay. Let's --

11 A. I stepped on you. I'm sorry. Let me -- my
12 bad.

13 I would -- I would more expect to see you
14 take a five-digit number here in the average power
15 supply and -- whatever that might be, if you multiply
16 it by 24, then you're going to get a -- you know, a
17 number over here that's not into the thousandths. Now,
18 I understand that Penon rounded them, okay, but --

19 Q. Hold on. I'm going to interrupt you for a
20 second.

21 A. Sure. Yes, sir.

22 Q. So you're saying that they -- that you would
23 have preferred if he took the average power supply,
24 multiplied it by 24?

25 A. Yeah, that would -- yeah, that would be my

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1 preference. And then --

2 Q. How do you -- how do you come to your average
3 power supply? How do you get that number?

4 A. I've not been told that, per se. All right.
5 Again, making an assumption on what I know about
6 machinery and so forth is they take whatever metering
7 they were using and when -- you know, at a certain
8 24-hour clock period, either the data logger will say
9 it used this much or you do a subtraction, time period
10 A minus time period B.

11 Q. Okay. So you would take the total amount
12 supplied for the day --

13 A. Uh-huh.

14 Q. -- and divide it by 24?

15 A. You could do it that way.

16 Q. Okay. And so that -- that's actually, in
17 fact, what was done here, right?

18 MR. LOMAX: Objection to the form of the
19 question.

20 A. It -- it appears that way, yes.

21 Q. Okay. And so you would expect that if you've
22 taken the supplied energy watts per day, divide that by
23 24 to get your average power supply, if you then
24 multiply that average power supply by 24, you should
25 result in the same number as you began with, right?

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1 A. Sure. You're going back and forth doing
2 numbers, yeah.

3 Q. Precisely. Okay. Now, you state that,
4 additionally, this is inconsistent with the Florida
5 Power & Light records, which cast further doubt on the
6 data in Penon's report.

7 How is it inconsistent?

8 A. What I've seen on the records -- and, again,
9 I did not do a huge study on Florida Power & Light.
10 Mr. Murray did, you know, a lot more of an extensive
11 study on that than I did, just I guess I should have
12 maybe referred to his report, but what -- you know, he
13 showed what he considered to be some anomalies between
14 FP&L's data and Mr. Penon's data.

15 Q. Okay. So the only information that you've
16 reviewed with respect to that opinion that it was
17 inconsistent was FP&L records was the reports prepared
18 by Mr. Murray?

19 A. Murray, yeah.

20 Q. Okay. Going down two paragraphs from that to
21 the paragraph starting with -- well, actually, hold on.

22 Before we leave that last paragraph, you
23 didn't create your own charts or comparison, did you,
24 between the FP&L records and the MG supply recorded by
25 Engineer Penon?

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1 A. No, sir.

2 Q. Are you aware of Mr. Murray's background,
3 educational background?

4 A. Somewhat, yeah, I've read some about it. He
5 was a P -- you know, a Ph.D. candidate. I think he was
6 pretty much all but dissertation, I believe.

7 Q. Okay. Do you know if he was ever involved
8 with Industrial Heat in any manner, or was he an
9 independent expert by himself?

10 A. Well, he's been both. He was an employee of
11 Industrial Heat, and now I believe he's consulting with
12 them.

13 Q. Okay. So he's not an independent expert, is
14 he?

15 A. No. He --

16 MR. LOMAX: Objection to the form of the
17 question.

18 Q. From what you understand?

19 A. Well, he -- well, he was an in-house employee
20 doing an analysis. So from the classic definition of
21 an independent consultant, no.

22 Q. Do you know what methodology or technique
23 that he used in performing his comparison?

24 A. I saw all the -- in that one report, I saw
25 the code that he wrote and so forth and I looked at it

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1 and thought, good job, Joe.

2 Q. You saw the code that he wrote?

3 A. There was in one of the appendixes -- at the
4 body of his -- and this may be work product because it
5 was labeled --

6 THE WITNESS: Should I stop?

7 Q. Well, did you rely upon it in coming to your
8 conclusion that it was inconsistent with Florida Power
9 & Light?

10 A. I -- I based my comment upon Mr. Murray's
11 concerns with the discrepancy. I'll leave it at that.

12 Q. Okay. And did you base your comment upon the
13 code that he wrote that you agreed with?

14 A. I -- I saw the code, I looked at it, and I
15 did not analyze it any further. That would have taken
16 a lot of time to dig into it.

17 Q. Well, you just said you said, good job, Joe.

18 A. Well, because it looked like a pretty --
19 yeah, it was a -- all right, a little bit of a snarky
20 comment, but it looked like a very thorough analysis.

21 Q. But you didn't analyze it to --

22 A. I didn't go over it line by line. I did
23 not go --

24 THE REPORTER: You're talking on top each
25 other.

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1 THE WITNESS: Sorry.

2 THE REPORTER: Okay. But you didn't --

3 BY MR. ANNESSER:

4 Q. But you did not analyze it?

5 A. I did not go into it line by line, no, sir.

6 Q. So you don't know if it is accurate or not?

7 A. Not by my own independent analysis.

8 Q. Now, sir, looking down to the paragraph I
9 referenced before this, it starts with, The column
10 entitled effective flowed water.

11 A. Yes.

12 Q. To begin, it states, The pictures of their
13 flow water meter shows that it reads in meters cubed or
14 cubic meters. This author wonders if the data logger
15 converted cubic meters to kilograms or is done in the
16 spreadsheet -- or is it done in the spreadsheet.
17 Sorry.

18 What do you mean by that?

19 A. Well, cubic meters is a volume measurement.
20 Kilograms is a mass measurement. Now, under standard
21 conditions, if I understand the metric system
22 correctly, a kilogram -- a cubic centimeter of water
23 may be a gram.

24 Again, don't quote me on that because, you
25 know, I know the English system, not the metric system.

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1 But there are some small conversions for
2 temperature and pressure that will -- even though water
3 is incompressible, it will expand and contract a little
4 bit due to heat. So there's a little bit of a
5 correction there. I was just wondering out loud if
6 that -- if that had been done.

7 Q. And you say, this author has the same concern
8 with respect -- I'm sorry -- in this column as with the
9 column entitled supplied energy watts per day regarding
10 the cell contents seeing the rounded number.

11 A. Correct.

12 Q. We've discussed that.

13 Does the fact that the number was rounded
14 invalidate the report?

15 MR. LOMAX: Objection to the form of the
16 question.

17 A. Again, the fact -- that fact by and of itself
18 does not. I just -- it -- I would rather see lots of
19 numbers rather than lots of zeros.

20 Q. Preferred methodology, that's your preferred
21 methodology?

22 A. Yes.

23 Q. So in this paragraph, you're -- you're just
24 expressing the opinion that you don't see why he
25 rounded it, not necessarily that rounding invalidates

1 the final, correct?

2 MR. LOMAX: Objection to the form of the
3 question.

4 A. Correct. Yeah, the rounding may have, may
5 not have affected it, it just -- it makes it a little
6 harder. Without -- when you're looking at a PDF like
7 this as opposed to the spreadsheet with the formulas
8 where you can look at each cell and look at the
9 formula, it makes it harder for somebody coming in
10 after the fact to try, okay, what was he doing, what
11 was he thinking here.

12 Q. Okay. The next paragraph down that begins
13 with, The column entitled reduced flowed water.

14 A. Right.

15 Q. And you discuss that Dr. Penon has reduced
16 the flow by 10 percent.

17 A. Correct.

18 Q. And your concern, again, is that there's a
19 rounded number in this column?

20 A. Yes. It's kind of a standing concern on the
21 numbers.

22 Q. If you take one rounded number and reduce it
23 by 10 percent, it's going to be rounded, right?

24 A. No. No. Because if I round -- if I take
25 35,402 and round it up to 36,000 and divide it, it's a

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1 different numbers, so that's where you start getting
2 into round-off errors and things like that. So, no,
3 they don't come out clean that way.

4 Q. If you take a rounded number, sir, say
5 100,000, and you reduce it by 10 percent --

6 A. It's 90,000.

7 Q. -- it's a rounded number?

8 A. But if you take 103,000 and round it down to
9 100,000, 90 percent of 103- is a different number,
10 because a rounded number is not the same number as a
11 number. 103,000 and 100,000 are not different -- I'm
12 sorry, are not the same. My bad. So the 90 percent of
13 103 and 100 are different numbers.

14 Q. Okay. But you're talking about a rounding of
15 what, 3,000?

16 A. I'm just pulling a couple numbers out of the
17 air just to illustrate my point.

18 Q. But, again, it's just that -- it's the same
19 point that you made before, correct, in terms of you
20 would not have rounded?

21 A. I would not have rounded.

22 Q. Okay. But the rounding itself does not
23 invalidate the finding, correct?

24 MR. LOMAX: Objection to the form of the
25 question.

1 A. Not standing by itself.

2 MR. ANNESSER: What's your objection, Chris?

3 MR. LOMAX: Invalidate the findings of what,
4 the entire report? This specific --

5 MR. ANNESSER: Invalidate the measurements
6 for the findings in his report.

7 BY MR. ANNESSER:

8 Q. Did you understand the question?

9 A. If you would repeat it again for me, I was
10 getting a drink.

11 Q. The fact that Engineer Penon used rounded
12 numbers, that standing alone does not invalidate the
13 findings of this report?

14 A. And I believe my --

15 MR. LOMAX: Objection to the form of the
16 question again.

17 MR. ANNESSER: That's fine.

18 MR. LOMAX: Go ahead and answer.

19 A. Again, and I'll restate, standing by itself,
20 it does not invalidate the report. But it does not
21 give me a warm, fuzzy feeling about what his
22 methodology may have been.

23 Q. Okay. Did you apply any specific
24 methodology, theory or technique to come to that
25 conclusion?

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1 MR. LOMAX: Objection to the form of the
2 question.

3 A. 40 years of being an engineer and doing lots
4 of data analysis.

5 Q. Okay. Now, were you aware, sir, that, in
6 fact, Engineer Penon, in his test plan, indicated that
7 he would apply a 10 percent reduction to the water flow
8 calculation?

9 A. I'm aware of that, yes, he did.

10 Q. And, in fact, that 10 percent reduction would
11 result in a lower COP, would it not --

12 MR. LOMAX: Objection to the form of the
13 question.

14 Q. -- based on the way the test was set up?

15 MR. LOMAX: Objection to the form of the
16 question.

17 A. It would result in a lower calculation of the
18 COP, which is not the proper measurement to use for
19 this type of machine.

20 MR. ANNESSER: What's your objection on this
21 one?

22 MR. LOMAX: You're asking -- I don't think
23 you've laid a foundation about his way of determining
24 how to calculate the COP for this test.

25 MR. ANNESSER: Okay.

1 BY MR. ANNESSER:

2 Q. So applying -- or calculating the COP, which
3 I understand you don't believe is the proper technique
4 for performing this test, but if COP was going to be
5 used, the 10 percent reduction would result in a lower
6 calculated COP.

7 A. It would result in a lower calculated number
8 called COP. And I use -- and I use -- let me emphasize
9 called, because, again, I'm just going to throw in kind
10 of a standing caveat, if I may, about my total
11 objection to the use of COP as a proper measuring
12 yardstick or metric, if you will, for this type of a
13 machine.

14 Q. Did you apply any methodology, technique or
15 theory in coming to your conclusion that -- I'm sorry.
16 No. Let me -- let me back off that for one second.
17 I'm going to come back to that question.

18 Sir, looking at the first paragraph on page
19 12, at the end of the paragraph, seeing a number in
20 each cell as opposed to seeing a formula was an issue
21 of concern for you.

22 A. Where are we? I lost where you were. I'm
23 sorry.

24 Q. The first paragraph on page 12. This author
25 has the same concern with this column as with the

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1 Supplied Energy column regarding the cell contents, for
2 example, seeing a number in each cell as opposed to
3 seeing a formula.

4 A. Gotcha. Okay.

5 Q. Do you know if a formula was used --

6 MR. LOMAX: Objection to the form of the
7 question.

8 Q. -- by Dr. Penon?

9 A. For what?

10 Q. In populating that -- this column, in
11 populating the Effective Flowed Water column.

12 A. It would --

13 Q. Or I'm sorry. I apologize. It's the Reduced
14 Flowed Water column.

15 A. Okay. If it's -- if he's reduced it by 10
16 percent, then the -- I would expect to see a formula
17 down -- and, again, this is a PDF, so you can't see
18 formulas. Were it a spreadsheet, I would -- let's go
19 to the very top -- oh, let's go to July 4th. All
20 right. Just -- yeah.

21 So you take 36 -- in the column -- I wish
22 these were numbered, but let's just go effective versus
23 reduced, reduced, you'd have something -- a statement
24 equals, cell, whatever times .9. That's what I would
25 expect to see in this reduced column.

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1 Q. Do you know if Dr. Penon did that or not?

2 A. I do not, because I don't have his
3 spreadsheet.

4 Q. Okay. So you're not saying he did it wrong,
5 you're just saying you don't know?

6 A. Correct. Yeah. I mean, you know, the
7 numbers between the two of them are -- they appear to
8 match up.

9 Q. Okay. The next paragraph on page 12 says,
10 The column entitled steam T min -- is that minimum?

11 A. Yeah, that should have been a sub --

12 Q. -- is the measured temperature of the fluid
13 leaving the E-Cat (this author has used fluid instead
14 of steam intentionally. This will be discussed later
15 in the report). We'll get to that. But it says, The
16 numbers themselves are unremarkable. What they
17 actually represent is a different matter.

18 What do they represent, sir?

19 A. Well, they suppose- -- they're alleged to
20 represent the alleged steam leaving the E-Cat.

21 Q. Okay. What facts or evidence have you seen
22 that undermines those measurements?

23 A. All right. I'm glad you asked that question.
24 Again, that is a number, all right. We're looking at a
25 number here. And, again, that would be reported as a

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1 number. And I'm -- again, just for the sake of
2 discussion, let's assume this is the average number for
3 the day so we don't have to, you know, go through all
4 that other about the math and so forth.

5 But I'm firmly convinced that the -- well,
6 number one, the way I understand and the way I'm firmly
7 convinced the boiler portion of the E-Cat, there was no
8 superheater, so there could be no superheat leaving the
9 steam. Because if the temperature was actually
10 atmospheric, the steam temperature should be 100
11 degrees.

12 Q. Okay. Hold on. If the temperature was
13 atmospheric, the steam --

14 A. If the pressure. Did I say -- my bad. If
15 the pressure was atmospheric, ambient temp- -- ambient
16 pressure, this steam temperature should be 100.

17 Q. Could not be heated beyond 100?

18 A. Not without a superheater.

19 Q. What's the superheater?

20 A. As I mentioned, it's a separate device that
21 is external to the boiler proper, not necessarily the
22 whole box, but is external that heats the steam above
23 the saturation temperature.

24 Q. How does it heat the steam above the
25 saturation temp- --

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1 A. Some heat source. Usually it's a separate
2 set of tubes that get radiant or convective heat from
3 the flame.

4 Q. But you don't know and you haven't seen
5 specifications on how the E-Cat works?

6 A. I've seen pictures of the exterior of it, and
7 I know enough about boilers to know there's no
8 superheater in the E-Cat, sir.

9 Q. How do you know that?

10 A. What did I just -- not being argumentative,
11 what did I just say? I know boilers. I'm a boiler
12 expert.

13 Q. Is this a boiler, sir?

14 A. Yeah, it's a boiler.

15 Q. You haven't seen documents regarding the
16 components of the E-Cat, but you've declared it's a
17 boiler.

18 What do you base that on?

19 A. If he's claiming to make steam, it's a
20 boiler, period.

21 Q. So anything that gets hot enough to evaporate
22 water is a boiler?

23 A. Say again.

24 Q. Anything that gets hot enough to evaporate
25 water is a boiler?

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1 A. No. An open pan of water is not a boiler.
2 It boils water; it is not a boiler. A boiler has a
3 closed vessel to generate steam or hot water.

4 So the E-Cat as a whole is a boiler. The
5 E-Cat module may not be, but the blue boxes that it's
6 sitting in is a boiler.

7 Q. And do you know if there's a progression of
8 the steam as it leaves the E-Cat so that they're -- so
9 that the steam could be heated on the way out of the
10 E-Cat? Is that a possibility?

11 A. It's a remote. Based on what I've seen,
12 there's no means to do that.

13 Q. But, again, you haven't seen any drawings of
14 the inside of the plant, have you?

15 A. No.

16 Q. Okay. You haven't seen the inside of the
17 plant?

18 A. Well, again, what I've seen of the pictures,
19 I've seen of the boiler, there's no superheater.

20 Q. And that's, again, just something that heats
21 up the steam for -- right?

22 A. Above the saturation temperature, yes, sir.

23 Q. Why is it that the E-Cat itself couldn't heat
24 the water above the saturation temperature?

25 A. It's physically impossible to do so.

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1 Q. Why is that?

2 A. It's just physically impossible. It can't
3 happen. It's the laws of physics. They're emperical,
4 not theoretical.

5 Q. How do you explain the temperature
6 measurements that are indicated in Mr. Penon's report
7 of 103 -- 102 to 104 on most occasions in that event?

8 A. All right. I see numbers on a page. So
9 explanation, there could be heaters near the
10 thermocouples that are buried under the insulation.

11 Q. I'm sorry, there could be --

12 A. Heaters, I'm sorry, strip electric heaters.
13 There could be a box between the thermocouple and the
14 computer that allows somebody to bias the signal from
15 the thermocouple to the computer, or the numbers are
16 just made up and stuck on a page.

17 Q. Or they could be legitimate?

18 A. No, they cannot.

19 Q. Based on what? Based on what facts, sir?

20 A. What I just --

21 Q. Because you do not believe that there was a
22 way to heat the steam beyond --

23 A. It's -- no. It's not that I do not believe,
24 I know for a fact there was no superheater on that
25 machine.

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1 Q. How do you know that for a fact?

2 A. I'm a boiler expert. I do boilers. I've
3 looked at it. I've looked at the photos and the
4 videos. There's no superheater, sir.

5 Q. How do you know that?

6 A. Asked and answered.

7 Q. You're not going to tell me?

8 A. I just did.

9 Q. I don't think you did.

10 A. Well, then, we agree to disagree.

11 Q. What methodology did you use to come to that
12 conclusion?

13 A. 40 years of being a power plant engineer, a
14 stationary engineer's license, a couple engineering
15 degrees, P.E. licenses. Other than that, not much.

16 Q. And you don't know what exists inside of
17 those blue boxes that you refer to?

18 A. I don't, but actually it's not that relevant
19 to my determination of why this machine is bogus.

20 Q. Okay. Why -- why is it that there couldn't
21 have been a superheater within those boxes?

22 A. Because you can't have steam in the box and
23 it's not -- and it's superheated.

24 Q. Why not?

25 A. There's no external way to heat it.

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1 Q. How do you know?

2 A. How do I know?

3 Q. You said that there could be external --

4 A. You have to have an external heat source to
5 superheat it.

6 Q. You said there could be heater strips by the
7 thermocouple.

8 A. This is on the outside pipe, not inside the
9 -- this is on the outside where the -- where the
10 temperature was measured. I should have been more
11 specific. My bad. I apologize.

12 Where the thermocouples were inserted to the
13 outlet pipe, there could have been strip heaters around
14 those.

15 Q. Do you have any evidence whatsoever that
16 there was?

17 A. I have no evidence that there wasn't.

18 Q. So you can't draw a conclusion one way or
19 another as to whether that was the case or not?

20 A. Not right now. And I'm really -- I would
21 really like to see that steam pipe between the Cat box
22 and the black box to take a look at it both inside and
23 outside. So I hope it's there later in the week.

24 Q. Now -- okay. So I think -- I think you said,
25 and I don't mean to belabor the point, but other than

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1 your 40 years of experience in the field, you didn't
2 apply any other methodology or theory or technique to
3 determine that there was no superheater or that the
4 steam could not achieve levels above a hundred degrees
5 C?

6 MR. LOMAX: Objection to the form of the
7 question.

8 MR. ANNESSER: What's the objection?

9 MR. LOMAX: It's very compound and broad and
10 vague.

11 BY MR. ANNESSER:

12 Q. Did you understand the question, sir?

13 A. Not really.

14 Q. Okay. Then let me repeat it.

15 A. Please.

16 Q. Other than your 40 years' experience, sir,
17 was there any technique that you used to determine that
18 there was no superheater or any other method of
19 allowing the steam to reach the temperature above a
20 hundred degrees C?

21 A. The laws of thermodynamics and boiler
22 construction.

23 Q. And what are those laws?

24 A. Well, again, I think I've mentioned multiple
25 times already, when you have liquid and vapor in the

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1 confines of a pressure vessel, the steam and water will
2 both be at saturation temperature. You cannot
3 superheat. It's not possible, sir.

4 Q. So you can never have -- okay. Well, let me
5 ask you this: Can water in its liquid form, okay, not
6 steam form, but liquid form, ever exceed 100 degrees C
7 at -- at atmospheric pressure?

8 A. Well, let's assume that atmospheric pressure
9 is sea level; okay? Let's agree to that first, because
10 it's very, very --

11 Q. We can agree on that.

12 A. -- very temperature dependent.

13 Water at that pressure will exist at 100 C.
14 It's saturated water.

15 Q. And if it's heated beyond that point?

16 A. It will convert to steam at the same
17 temperature and pressure. It will convert to saturated
18 steam if more heat is added.

19 Q. Okay. So if more heat is added, it converts
20 to saturated steam?

21 A. Yes, sir. And let me -- and the reason --
22 and this gets back to, you were asking me earlier about
23 my generic description of thermodynamics and so forth.
24 And this discussion we're having goes back to the
25 figure on page 8 that looks kind of like a dome with a

1 bunch of lines on it, that is -- what I was trying to
2 do here is give people that are not engineers a
3 graphical depiction of what's going on so that they
4 could actually see on the diagram what's physically
5 happening rather than try to describe all this in
6 words.

7 Q. Now, sir, specifically with respect to that
8 second paragraph on page 12, you see where it says
9 steam T minimum, right?

10 A. I do, yes.

11 Q. Do you have any problem with Dr. Penon's use
12 of the minimum temperature of the steam during the time
13 period?

14 A. Well, you know, yeah, the use of the word
15 "steam" bothers me because I don't think there was any.
16 But as far as "T min," I can live with that. "Steam,"
17 no.

18 Q. I believe you had testified earlier that with
19 respect to one of the projects you worked on where you
20 were transferring steam I believe across a river --

21 A. Yeah, OSU.

22 Q. Yeah, at OSU, you had testified, I believe,
23 if I'm not mistaken, that the steam was 558 degrees
24 Fahrenheit?

25 A. That sounds about right, yeah.

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1 Q. Okay. How did the steam get that high?

2 A. We superheated it. We had a separate
3 superheat in the boiler, so we had a boiler and then a
4 separate set of superheater tubes to superheat it.

5 Q. So if the E-Cat had separate chambers for its
6 heating, could that have accomplished a superheated
7 steam, in your opinion?

8 A. Not with the construction I saw of the E-Cat,
9 no. Now, if we can get in one and take it apart, then
10 I -- you know, then you may force me to change my
11 testimony. But until I see that, I'm not changing it.

12 Q. Okay. So until you -- you see the inside,
13 you're not willing to make any assumption whether that
14 could exist or not?

15 A. Correct. And let me -- let me further amend
16 -- let me amend my statement, if I will, to see it in
17 the condition that it was during the test, not that it
18 necessarily may be now, because there's been a year
19 interval between the test termination and -- about a
20 year interval -- over a year interval, I don't know
21 what's happened. You know, those -- all the things
22 could be changed.

23 Q. But, again, you never requested any diagrams
24 or drawings of what these units look like?

25 A. I can't say that I did or did not. I

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1 probably did knowing me, but I can't say with 100
2 percent certainty.

3 Q. Don't you think it would have been prudent
4 to -- before formulating that opinion, to know what --
5 or how the device operated?

6 A. Well, I may have asked, and if nothing is
7 forthcoming from plaintiffs, then I can ask all I want.

8 Q. Well, do you know if -- do you know if the
9 defendants or counsel has that information?

10 MR. LOMAX: Objection to the form of the
11 question.

12 A. They have not -- I -- I will just -- I will
13 say that I have asked for it, because I know myself
14 well enough when I do this, and the answer was no, we
15 don't have that.

16 Q. Can you think of any reason why they wouldn't
17 have provided it to you?

18 A. You would not have provided it to them.

19 Q. Okay. So sitting here today, if we had
20 provided it to them and they didn't provide it to you,
21 can you think of any reason why that might be?

22 MR. LOMAX: Objection to the form of the
23 question.

24 A. Yeah, they -- they either -- they forgot it
25 or they don't want to.

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1 Q. Might be.

2 Number 9 on my list is steam pressure, which
3 is the third paragraph down on page 12.

4 A. Uh-huh.

5 Q. You state, The numbers themselves are
6 unremarkable. What they actually represent is a
7 different matter. Every cell under steam pressure is
8 zero in the entire spreadsheet.

9 What does that represent, sir?

10 A. I understand it to be the outlet steam --
11 again, outlet so-called steam pressure of the E-Cat.

12 Q. Okay. And you say what it represents is a
13 different matter.

14 What does it represent?

15 A. It represents steam, which I don't believe is
16 present.

17 Q. Okay. So that statement goes directly to
18 your belief that there was no steam present?

19 A. Correct.

20 Q. Okay. The next paragraph says, the steam
21 pressure in the steam pressure column is uniformly
22 reported as 0.0 bar. 0.0 bar is 0.0 atmosphere --
23 atmospheres absolute. And then you go on and say, if
24 the ERV meant 1 atmosphere, the column should have been
25 labeled 1 bar.

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1 So your -- just so I understand, your
2 objection to that particular column is that he did not
3 state 1 bar or that it was atmospheric as supposed to
4 absolute?

5 A. Correct. Because if it was absolute,
6 obviously we can't have steam. So this is probably
7 just an innocent typo, truth be told.

8 Q. Okay. Now, you state that -- and so that
9 typo doesn't invalidate the report, does it?

10 MR. LOMAX: Objection to the form of the
11 question.

12 A. Standing -- stand alone, no. Now, again, if
13 he meant that it was steam pressure and absolute bar,
14 yeah, that's a big problem.

15 Q. You were at his deposition.

16 Did he indicate one way or another?

17 A. I don't recall. Again, with the -- all the
18 goings-on with the translator, sometimes it was hard to
19 keep focused on what he was saying.

20 Q. Now, you state here, another very serious
21 data anomaly is the steam temperatures are almost all
22 reported as being over 100 degrees C. The saturation
23 temperature of water at atmospheric pressure is 100
24 degrees C.

25 Is that what we just discussed? Is that --

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1 A. Yes, sir, it is.

2 Q. Okay. There's nothing different there?

3 A. No.

4 Q. So your testimony would be the same as what
5 we just discussed with respect to the steam temperature
6 above 100 degrees C?

7 A. Yeah.

8 Q. The next paragraph refers to the column
9 entitled Produced Energy.

10 And the first thing that you note here is
11 that the columns contain cells as opposed to formulas,
12 correct?

13 A. Yes, numbers as opposed to formulas, correct.

14 Q. Okay. And, again, you don't know whether
15 Penon, Dr. Penon, used a formula or if he just put in
16 numbers?

17 A. And, again, I don't know, correct.

18 Q. Okay. The next paragraph says, The produced
19 energy numbers should have been generated and provided
20 by a calibrated energy measuring device to include
21 steam flow, steam quality, temperature and pressure.

22 Is there such a thing as a device that
23 includes all those?

24 A. Not -- I think they're -- they're generally
25 separate devices.

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1 Q. Okay. And temperature was measured in this
2 case, was it not?

3 A. Allegedly, yes.

4 Q. And pressure was?

5 A. Allegedly, yes.

6 Q. Okay. Now, steam flow and steam quality,
7 let's talk about those for a moment.

8 Steam quality. If, in fact, the temperatures
9 were -- and I'm asking you to assume because I know you
10 disagree, but if, in fact, that they were at 103.9 or
11 anywhere between 101 and 104; okay?

12 A. Okay.

13 Q. Would you agree with me that the steam
14 quality be -- would be 100 percent?

15 A. If all of your assertions are true, yes, I
16 would agree in that limited context.

17 Q. Okay. So if there were measurements -- okay.
18 If the temperature measurements were correct, then you
19 would agree that the steam quality is, therefore,
20 already defined? You don't have to do any additional
21 analysis for steam quality where the temperatures are
22 over 101 C?

23 A. But the whole -- the whole crux of your
24 question relates on the if, and I'm not assenting to
25 that if.

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1 Q. Okay. I understand. You don't -- you don't
2 subscribe to the temperature measurements?

3 A. Correct.

4 Q. Now, I understand that. But I'm trying to
5 define where your areas of concern are and whether this
6 is a separate issue of concern or whether this stems
7 from a prior issue.

8 So right now, you -- specifically, I know you
9 don't agree with the temperature measurements. You
10 believe that those are faulty in some manner. Okay.
11 But assuming that they are correct, there would not be
12 an additional need for a steam quality measurement of
13 any sort; is that correct?

14 A. I'm going -- I'm going to answer your
15 question a little obliquely. If this were a
16 conventional boiler, conventional steam system putting
17 out steam at 0 pounds gauge and temperatures above 100,
18 I would agree in that context, yes, to quality 100
19 percent.

20 Q. Okay.

21 A. In the current case, no, sir, I do not.

22 Q. What is the difference between the current
23 case and the -- a traditional boiler?

24 A. A tradition boiler has a real superheater.

25 Q. So, again, this -- this is what I was

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1 discussing in terms of that goes back to your belief
2 that there was no superheater.

3 And so if there was a superheater, you would
4 agree with me that that would change your opinion?

5 A. If there was a superheater, I would be hugely
6 surprised.

7 Q. So that's what you were referring to, though,
8 in terms of -- for steam quality.

9 What about steam flow?

10 A. What about it?

11 Q. How would you measure steam flow?

12 A. With a steam flow meter.

13 Q. And what does the steam flow meter do? How
14 does that work?

15 A. There are -- there are a whole bunch of them
16 out there.

17 Q. Sir, the question is what does a steam flow
18 meter do?

19 A. Yeah, that, I'm going to answer your question
20 with a -- rather than try to describe them verbally, I
21 apologize, I downloaded some information from
22 Spirax-Sarco, who is a client of mine, but they sell --
23 they were selling stuff long before I was ever around.

24 They have a nice disposition -- it's in here.
25 There we go -- on types of steam flow. If you'd like

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1 that. Unfortunately, I only made one copy of that, but
2 that's available at Spirax's website with no problem.

3 Q. Would the steam flow meter indicate how much
4 liquid water had been converted to steam?

5 A. A steam flow, no. It would -- all it would
6 indicate was the amount of steam passing through a
7 given pipe.

8 Q. When you say "the amount of steam," how is
9 that measured, in what --

10 A. Well, in -- in this country, it's pounds of
11 steam per hour.

12 Q. Pounds per hour?

13 A. Yes, sir.

14 Q. Okay. Now, steam is water in vapor form,
15 correct?

16 A. No. Steam is a gas.

17 Q. And, I'm sorry, in gaseous form? I
18 apologize.

19 A. You're correct, yeah.

20 Q. Yes. So the weight of steam is really the
21 weight of the water molecules; is that correct?

22 A. Well, a pound of steam is a pound of steam,
23 so a pound -- a pound of steam is a pound of water.
24 The same pound of water is the same pound of steam.
25 The difference is in the volume.

1 Q. Okay. A pound of water converted to steam,
2 in a boiler, you boil a pound of water, it converts to
3 steam?

4 A. One pound of steam.

5 Q. One pound of steam?

6 A. Correct.

7 Q. The same exact amount, correct?

8 A. Yes.

9 Q. So -- and when that steam is cooled, the
10 steam returns back to the liquid state of water,
11 correct?

12 A. That's correct.

13 Q. Okay. And in a perfectly closed system with
14 no losses whatsoever, it would be a pound of water
15 again?

16 A. Correct.

17 Q. Correct. So -- so a steam flow meter is one
18 way to measure.

19 Would another way be to determine how much
20 steam was produced, how much water was heated to steam
21 and turned into a gaseous form?

22 MR. LOMAX: Objection to the form of the
23 question.

24 A. I don't understand your question.

25 Q. So, for example, in -- in our 1-pound

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1 scenario, you put 1 pound of water into the boiler and
2 you boil it all, it's turned into a gas, correct?

3 A. Correct.

4 Q. There's nothing left in our boiler --

5 A. Right.

6 Q. -- right?

7 So without a steam flow meter, we know,
8 though, that we have created 1 pound of steam?

9 A. Correct.

10 Q. Beyond a doubt?

11 A. Yep.

12 Q. Okay. So knowing how much water was boiled
13 and turned into a gaseous state tells us how much steam
14 was created, that it created 1 pound of steam?

15 A. In your hypothetical, yes. In this
16 hypothetical, yeah.

17 Q. Okay. So similarly, and applying that to the
18 E-Cat, if we knew the amount of water that was boiled
19 by the E-Cat or converted into a gas, we would then
20 know the amount of steam that was created, correct?

21 A. No, because an input is not an output.

22 Q. Okay.

23 A. The test plan indicated measuring the water
24 coming back from across the wall. That's an input to
25 the E-Cat. It is not an output.

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1 Q. Okay.

2 A. They're different. No matter -- no matter
3 how you try to conflate them, one is a goesouta, the
4 other is a goesinta.

5 Q. Okay. Let's talk about the goesoutas and the
6 goesintas. If there is a substantial amount of
7 goesinta, water that goes into the plant, and the only
8 means for it to go out of the plant would be as steam,
9 would you agree with me that in order for there not to
10 be a flood, that the same amount coming in would have
11 to go out?

12 A. In a -- in a perfectly closed loop with
13 absolutely no leaks, it's totally tight, I would agree
14 with that.

15 In the present case, I do not agree, because,
16 again, we're trying to measure the efficiency of a
17 heat-producing machine and we have to measure the
18 output. Measuring the input won't cut it.

19 Q. Okay. Why doesn't measuring the input --
20 again, in our little hypothetical with the 1 pound of
21 water, we were able to measure the 1 pound of water
22 going into the boiler and know that that 1 pound was
23 the amount of steam produced.

24 So what is the difference in our E-Cat unit
25 that we cannot make that same presumption?

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1 A. There's leaks. There may be blowdown. Okay.
2 Those are the two things that pop immediately into my
3 mind.

4 Q. What is "blowdown"?

5 A. Blowdown is water that is drained off of a
6 boiler to reduce the solids in the water.

7 Q. Where does that water go?

8 A. To the drain.

9 Q. Okay. Was there a drain in the Doral
10 facility to your --

11 A. I would hope there was. I haven't seen it
12 yet, but I would certainly hope there was at least one.

13 Q. Why?

14 A. Well, because it's an industrial facility.
15 You've got to have drains.

16 Q. Okay. And if there wasn't a drain, then --

17 A. Then it would go on the floor.

18 Q. Okay. And was there any reports that you
19 know of of water all over the floor?

20 A. I can't -- you won't be able to pin me down,
21 because I don't remember exactly where, but I've seen
22 -- I've heard reports of fixing leaks. In looking at
23 some of the fittings, I've seen evidence of leakage.
24 Mr. -- I saw a picture that had been provided to
25 counsel of vapor coming out of the E-Cat -- the Cat

1 box, so that vapor could only come from one place.

2 So -- but, again, to get back to your perfect
3 hypothetical, yeah, I agree with you. All right. But,
4 again, this is -- this is a performance test of an
5 energy-producing machine. There is no reason not to
6 measure the output.

7 Q. Okay. The -- the volumes of water that we're
8 talking about processing through this plant, we're
9 talking in the neighborhood between 1.2 and 1.6 cubic
10 meters per hour?

11 A. I'll not argue with that. That sounds --
12 yeah. Fine. I'll not argue with that.

13 Q. That's a fair amount of water?

14 A. It's not -- yeah, it's a chunk.

15 Q. It's a good chunk.

16 And that's per hour, correct?

17 A. I can't say one way or the other, but --

18 Q. So if there was -- if there was a leak of
19 that amount, even one hour's worth of water, that would
20 be noticeable, would it not?

21 A. I would -- I would expect so, yeah.

22 Q. Okay. Did you talk to any of the gentlemen
23 that were in the plant?

24 A. I've not talked to anybody that worked there,
25 no.

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1 Q. Okay. Did you know that Industrial Heat had
2 a representative on site named Barry West?

3 A. I did not know that he worked for Industrial
4 Heat. Apparently if he did, then I thought he was
5 working for Mr. Rossi.

6 Q. Do you know if he reported ever any massive
7 leaks? And I'm talking over a cubic meter in an hour.

8 A. No, I don't.

9 Q. Okay. Now, you said there was some loss due
10 to -- to vapor?

11 A. Leaks in the casing and so forth.

12 Q. Leaks in the casing. Okay.

13 And that -- do you know if that's why
14 Engineer Penon calculated a 10 percent reduction off of
15 the recorded waterfall?

16 A. I recall reading that was part of his
17 rationale.

18 Q. Okay. Do you have any problem with that?

19 A. I -- that ration- -- I still have the whole
20 problem -- the whole rationale of calling it input and
21 output.

22 Now, an attorney -- and, again, this is a
23 shot at both of you, so don't take it personally, but
24 attorneys can call anything anything. I'm an engineer;
25 I can't do that. I cannot call an input an output.

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1 They were not measuring the output. They were
2 measuring the input. And, again, that's another thing.
3 You know, we can wrangle about this as long as you
4 want. I'm not backing off of that. They should have
5 measured the output.

6 Q. Okay. I'm not asking, though, sir, what --
7 what they should have done. Okay. What -- what I'm
8 asking in this case -- and I may even come to the point
9 to agree with you that there may have been better ways
10 in which it could have been done, but the question is
11 is whether these results are entirely invalid --

12 A. Yes.

13 Q. -- or --

14 A. I'm sorry, I stepped on you. Again, I
15 apologize.

16 Q. -- whether they're entirely invalid or if
17 they're off by even 30 percent?

18 A. They're entirely invalid because the whole
19 methodology of testing a heat-producing machine is to
20 measure the outputs and measure the inputs.

21 And don't forget, the output from this
22 machine was going across the gray wall into another
23 black box. And Mr. Penon was pretty -- and this I do
24 remember because I did pay pretty close attention at
25 this point, he did not know nor did he care, and I

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1 even -- I think he spells it out in his test plan what
2 happened over there.

3 So they could have been putting water in,
4 they could have been taking water out. We don't know
5 what happened. And so that's my problem with this
6 methodology, is we -- since we don't know what happened
7 over there, we don't know if what's coming back is what
8 was really being sent out.

9 Q. Well, let me ask you in this matter, again,
10 if more water was coming into the E-Cat on the
11 quantities that we're talking about between, we'll call
12 it 1 and 1.6 cubic meters per hour, if more water was
13 constantly coming in than was going out in the form of
14 steam, then there's only one result, the water is going
15 to come out somewhere, correct, either to a drain,
16 correct --

17 A. Yeah.

18 Q. -- or water vapor, although that would be an
19 awful lot?

20 A. Correct.

21 Q. Or some other manner, otherwise, it would
22 just continue to build up inside of this box and we'd
23 have a swimming pool, right?

24 A. Correct.

25 Q. Okay. So if the water that was coming in was

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1 a correct measurement, we know generally that the water
2 going out, in some form or another, must have been
3 equals; otherwise, there would have been an imbalance
4 and we would have been collecting more water than the
5 facility could have handled?

6 A. Again, I'm not going to assent to your if.
7 All right. Because, again, J.M. Products as opposed to
8 Leonardo may have been draining the water off. I
9 haven't seen the drains. And Penon didn't care. So
10 that's -- the whole methodology is flawed.

11 Q. Again --

12 A. It's totally flawed. And so based on it
13 being totally flawed, the test as a whole is -- is
14 invalid, in my view, because we're not looking at a
15 true output. We're looking at an input that is now
16 supposedly correlated to make it an output.

17 And a lawyer might make an output an input,
18 but an engineer cannot make an output an input.

19 Q. Okay. Sir, in going back to our hypothetical
20 with our 1 pound of water, okay, if I pour 2 pounds of
21 water into the boiler, assuming that there is no drain
22 or leaks, and the boiler is dry at the end, is it safe
23 to assume that 2 pounds of steam were created?

24 A. Again, absolutely, very safe assumption.
25 It's a -- that would be a fact.

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1 Q. Okay. Do you have any facts or do you have
2 any information of any other source by which water
3 could have left the E-Cat unit other than as steam?

4 A. It could have left as water. They could have
5 just circulated water all the time. And that's what I
6 think happened, is they were circulating water.

7 Q. In the steam pipe?

8 A. Yes. In the pipe; not the steam pipe, in the
9 pipe.

10 Q. Okay. First of all, what level was the pipe,
11 this -- I'm going to call it a steam pipe, and I
12 understand --

13 A. Fine. We'll agree to disagree.

14 Q. At what level, how high was that?

15 A. I don't know.

16 Q. Do you know if it was above head level?

17 A. Again, I don't know for sure.

18 Q. Well, you've seen pictures, sir. You saw --

19 A. It looks -- again, you know, the angles were
20 kind of -- but I would -- hopefully it was designed to
21 be above head level.

22 Q. Okay. If it was liquid water, how would the
23 water go from an E-Cat unit up to a pipe that is above
24 head level?

25 A. If it's a closed loop, water is going to

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1 circulate by natural convection. Warm water --
2 everybody says heat rises. All right. Heat is
3 omnidirectional. Warm water is less dense than cool
4 water.

5 I will -- I will agree that the E-Cat module
6 heated the water in some method. I've got no problem
7 with assenting to that. All right.

8 So that heated water is going to be less
9 dense than the cooler water coming back to it. So that
10 will set up a natural circulation loop. And that's
11 actually the way boilers work that don't have pumps, is
12 because of that buoyancy difference, will set up an
13 internal circulation flow.

14 Q. Okay. That can overcome gravity?

15 A. Yeah. Yeah, because it's a closed loop.
16 What goes up, comes down. It's a closed loop. Now, if
17 it was an open system, it would not go up. But being a
18 closed system, what goes up must come down.

19 Q. That means it's got to be watertight,
20 literally watertight?

21 A. Or pretty close to it.

22 Q. Okay. Now, you mentioned that you saw
23 pictures with vapor being released. That means the
24 system wasn't watertight, was it?

25 A. At least at the time of the leaks. Now, the

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1 leaks may have been fixed so that it did get tightened
2 back up.

3 Q. Do you know if there were leaks?

4 A. The evidence I saw indicates there were some.

5 Q. Okay. So if it was -- if it was not
6 watertight, if this system inside the E-Cat is not
7 watertight -- and we may get a chance to see that here
8 soon when we go to the site -- would there be any other
9 method that you can think of in which water could
10 somehow overcome gravity, absent a pump, to flow
11 through that pipe?

12 A. Even if -- even if it's not watertight and
13 there's a little bit of a leak, the leak is going to be
14 small in comparison to that large volume of water that
15 you just talked about flowing. So that little leak is
16 not going to allow atmospheric pressure to enter. So
17 it's -- it's still going to be, I'll call it a
18 quasi-closed system for lack of a better term, so
19 you're still going to have a natural convection heat
20 loop in it.

21 Q. Okay. Well, let's just say -- and what
22 you're saying is that the flow would overcome the
23 amount that could leak, and I understand that.

24 What if there was a -- what if it wasn't
25 small, I mean, if it was just wide open, an open area

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1 of -- like an open holding tank for water to feed into
2 the E-Cats?

3 A. But that -- that tank is separated by a
4 water -- a bit of a water column to create a water seal
5 to keep atmospheric pressure from coming in.

6 Q. I'm sorry, say that again, please.

7 A. That was bad. If there was a tank like that
8 and it was connected to the E-Cat, there would be a
9 static line between the two of them unless that tank
10 was acting and feeding water in through a pump, you
11 know, if there was a make-up water pump, then that
12 water would be coming in under pressure.

13 And also don't forget that the -- these --
14 all these little pumps, you've got all these little
15 what, a hundred or so small peristaltic pumps that are
16 pumping water into the E-Cat. They're going to keep it
17 full more so than the leaks.

18 Q. Okay. Sir, to come back, because I got off
19 track a little bit, and I apologize for that, coming
20 back to your statement that you can't measure the input
21 as opposed to the output --

22 A. Well, we could have measured the input. Oh,
23 we did -- I'm sorry. My bad. We could have -- we did
24 measure the input. We could have measured the output.

25 Q. Okay. Is there any specific methodology,

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1 technique or theory that you've applied to arrive at
2 your conclusion that the measurement of the water input
3 into the system does not sufficiently allow a
4 measurement of the output of steam?

5 A. Haven't I kind of answered that question in
6 the last ten minutes or so pretty concisely?

7 Q. Well, but I'm asking for specific
8 methodologies or theories or --

9 A. The theories of hydraulics and fluid flow,
10 the methodology being the ASME, the performance -- or
11 the power test code, the industry standard for
12 determining these kind of things.

13 In the 40 years of engineering, I have never
14 seen a device that's called an input and output or vice
15 versa. An input is an input, an output is an output
16 and you can't measure the output by inferring the
17 input.

18 Q. If there were -- if there were no way to
19 measure the output, let's say shot out a hole in the
20 side as opposed to into this pipe, the steam, if
21 instead of going through the pipe -- and I know you
22 disagree with the word "steam" -- if there were no
23 measurement or either an inability or a failure to
24 measure the steam flow out of the unit, would you agree
25 that you could look at the amount of water input into

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1 the system to try to determine how much steam was
2 generated?

3 A. I disagree with your premise that there's no
4 way -- way -- sorry -- there's no way to measure the
5 output. I totally disagree with that.

6 Q. I understand that. But I'm asking you if --
7 if we could not or just failed to measure the steam
8 outflow --

9 A. But you could have and you didn't, so it's
10 not that you failed to, you chose not to and did not.
11 And, again, I don't mean you personally. My bad.

12 Q. I'm going to correct you, sir, and it wasn't
13 even my client, in fact, because the test plan and test
14 protocol were agreed to by both parties.

15 A. Okay.

16 Q. Okay. So both parties.

17 A. Then to be totally objective, on both of
18 them.

19 Q. And had they contacted -- had they contacted
20 you before the test, would you have been happy to
21 assist them with their test plan?

22 MR. LOMAX: Objection to the form of the
23 question.

24 A. Probably, yeah.

25 Q. Okay. Sir, looking at the second to last

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1 paragraph on page 12, with respect to the column
2 entitled COP, based on the above discussion, these
3 numbers do not appear to have been properly calculated.

4 A. Uh-huh.

5 Q. Is that statement solely premised upon
6 your -- the exceptions that you've taken with respect
7 to the measurements that we've discussed previously?

8 A. Partially. I don't know if I talked about
9 the use of COP as a proper measuring metric, but I
10 disagree with that also.

11 Q. Okay. We're going to get to that.

12 But specifically with your statement that
13 these numbers do not appear to have been properly
14 calculated, okay, for COP, how do you measure COP?
15 What is the formula?

16 A. Well, COP, the formula in a work-absorbing
17 machine such as an air-conditioner or a heat pump,
18 is -- it's like -- it's shown in both of the
19 professors' books, it's Q moved, if you will, divided
20 by work in. The amount of heat -- I should say Q is
21 engineering shorthand for heat. Okay. So when you get
22 in the books, both professors will use the letter
23 capital Q typically. That's our engineering shorthand
24 for heat quantities.

25 Q. Okay.

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1 A. I imagine Professor Wong has probably already
2 told you that, but if he doesn't, he will.

3 So COP, coefficient of performance, is
4 technically and correctly defined for a work-absorbing
5 device such as a refrigerator, air-conditioner, heat
6 pump, as the amount of heat moved from point A
7 typically inside a conditioned space to outside a
8 conditioned space. And then that's divided by the
9 amount of work that it takes to move that heat.

10 Q. What do you mean by a "work-absorbing
11 device"?

12 A. Your air-conditioner. You've got electric
13 lines going into it. It runs a compressor and some
14 motors. It's absorbing electric power to move heat
15 around.

16 Q. Okay. And the E-Cat, for example, absorbs
17 electrical input, correct?

18 A. Yes.

19 Q. Okay. And puts out thermal energy --

20 A. Yes.

21 Q. -- in the form of steam?

22 A. It puts out thermal energy.

23 Q. Okay. It puts out thermal energy.

24 Again, you -- you take exception with the
25 steam. I understand that.

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1 So, in fact, it is a work-consuming process?

2 A. No. It's an energy conversion device. A
3 boiler is an energy conversion device. So the E-Cat is
4 actually an energy conversion device.

5 Q. Well, let me -- let me ask you -- hold on for
6 a second -- does the E-Cat convert the electrical
7 energy input into thermal energy, is that what it's
8 doing?

9 A. Eventually, yeah.

10 Q. Eventually. Okay. What happens in between?

11 A. Well, I don't know. That's supposedly
12 Rossi's proprietary mix in the elements and so forth.
13 Okay.

14 But, again, I believe it's just an electric
15 heater. You know, he may -- obviously he would
16 probably vehemently disagree with me. But regardless
17 of that disagreement, within the confines of Rossi's
18 model, we are bringing electricity in, heat is an
19 output product.

20 Q. What is the source of that heat?

21 A. In my -- I think it's just electric
22 resistance.

23 Q. Do you have any evidence that you've seen to
24 indicate that? What -- what do you base that belief
25 on?

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1 A. Well, there's just no -- there's no other
2 input that I'm aware of.

3 Now, that does raise an interesting point,
4 because I understand hydrogen may be part of this
5 process and therein another flaw in the test report and
6 the -- in the test plan and test report, because if
7 hydrogen is an input, then that should be measured as
8 an input, the amount of hydrogen. Because hydrogen is
9 a combustible fuel with a fair amount of heat value,
10 that being brought in should be considered in the
11 calculations as an energy input.

12 Q. And when you say "heat value," are you
13 talking about calories?

14 A. Yes, well, calories, BTUs. Again, you know,
15 same stuff, different way of measuring it.

16 Q. Okay. Do you know what was being used in the
17 E-Cat unit?

18 A. What I've read is nickel and some other kind
19 of hydride-type stuff. And I've -- and I've seen --
20 I've also been led to believe that there might be even
21 actually hydrogen gas used.

22 Q. Okay. And do you believe that those have
23 sufficient calories to -- strike that.

24 Calories is important to consider in chemical
25 reactions, correct?

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1 A. Yeah. Yes.

2 Q. Because that's -- that determines how much
3 energy can be released, the number of calories that can
4 be released in that reaction?

5 A. Correct. How many calories/BTUs, yes, sir.

6 Q. Is that the same consideration in nuclear
7 energy?

8 A. I believe it is, because the decay --
9 regardless of -- again, not being a nuclear engineer,
10 but I do know heat. And the decay of the fuel,
11 elements in the fuel, the nuclear decay produces heat,
12 so there are calories being generated from the atomic
13 interactions as opposed to the molecular interactions
14 in a conventional chemical reaction.

15 Q. Well, calories are consumable normally
16 without altering the underlying molecules --

17 A. Well, wait a minute. You say calories are
18 consumable --

19 Q. Okay. You're correct. Let me rephrase this.
20 In a chemical reaction, you're not decaying
21 the atoms, correct?

22 A. Not the nuclei.

23 Q. Okay. You're not decaying the nuclei?

24 A. Correct.

25 Q. Now, in a nuclear reaction, you are decaying

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1 the nuclei?

2 A. Correct.

3 Q. And, in fact --

4 A. Or fusing them, decaying them or fusing them.

5 Q. Okay. And in those reactions, you are
6 altering the nuclei. They are being changed, correct?

7 A. Yes.

8 Q. They give off an immense amount of energy --

9 A. Yes.

10 Q. -- correct?

11 Far more than can ever be achieved in a known
12 chemical reaction?

13 A. Correct. Well, when you say -- let me go --
14 I mean far more on a unit -- unit mass basis. Let's --
15 let's quantify it that way. Okay.

16 Q. Do you know what reaction is occurring in the
17 E-Cat?

18 A. I believe I've said I do not.

19 Q. Okay.

20 A. But I also said that my understanding is that
21 it is a non-nuclear process.

22 Q. And that's based on Mr. --

23 A. Stokes.

24 Q. -- Stokes?

25 A. And I believe Dr. Ross's assertions, too,

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1 that he said it's a non-nuclear process.

2 Q. Then what is it; do you know?

3 A. It's electrical. It's an electrical
4 resistance heater, maybe bringing in some hydrogen, I
5 don't know, but it's probably predominantly an
6 electrical resistance heater.

7 Q. Now, you -- you had mentioned that you were
8 aware of the Lugano report?

9 A. I'm aware of it.

10 Q. Okay. Have you read it?

11 A. I scanned through it. I did not study it in
12 detail.

13 Q. Are you aware that a number of Swedish
14 scientists as well as Italian scientists, professors,
15 in fact, performed a test on the E-Cat device?

16 A. I'm aware of that.

17 Q. Are you aware that they reported to have
18 achieved a positive CO fee -- COP, coefficient of
19 performance, on those tests?

20 A. If that's what you say and if that's what's
21 reported, then I'm not -- if that's what they reported,
22 I can't argue with that.

23 Q. You haven't looked at the report, though?

24 A. Like I said, I scanned it, I did not study
25 it.

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1 Q. So you had that at your disposal, but you did
2 not consider that before coming to the conclusion that
3 there's no way that the E-Cat could have worked?

4 A. My reason being is that in the module itself,
5 what goes on is what goes on. All right. The laws of
6 thermodynamics state that for a perpetual -- we
7 discussed a perpetual motion machine, that cannot
8 create energy. Even a nuclear reaction does not create
9 energy. It just changes the highly dense nuclei as
10 opposed to molecular bonds.

11 Q. Okay.

12 A. So I'm looking at -- and to me, the whole --
13 if you're not measuring the output, as far as I'm
14 concerned, the whole test is invalid. And -- and I
15 have -- I have a strong enough belief in the laws of
16 thermodynamics that I absolutely do not believe that
17 any device can produce more energy than it consumes.

18 Q. Okay. Let me -- let me simplify this. So
19 then, again, your opinion is that the test protocol,
20 the test plan was deficient, not necessarily -- you're
21 not opining that the measurements were -- specifically
22 with respect to the water flow, that the water flow was
23 somehow erroneous?

24 A. I -- I have questions about the water flow.

25 Q. Well, there's a difference, would you agree,

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1 between having questions and formulating an opinion
2 that it's erroneous?

3 A. Well, it's -- it is a -- I agree there is a
4 distinction. All right. Number one, it was not the
5 way to measure the performance of the total machine.

6 Number two, Mr. Murray has done a lot more
7 work into investigating the water meter than I have.
8 He's looked at it, I believe, and so forth and found
9 some discrepancies. So that raises issues as to the
10 validity of the report also.

11 Q. But you don't have information as to those
12 discrepancies allegedly reported by Mr. Murray?

13 A. I've looked at some of the issues he raised
14 with Dr. Penon in that one letter.

15 Q. Did -- did you do any testing of your own?
16 Did you do any investigation as to the water flow?

17 MR. LOMAX: Objection.

18 A. Again, how could I? Not physically possible.

19 Q. How did Mr. Murray?

20 A. He was there.

21 Q. He was where?

22 A. At the Doral site.

23 Q. Okay. What do you understand his test
24 protocol to have been?

25 A. Well, he looked at it, and I believe he also

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1 purchased some meters, identical meters and tested
2 them.

3 Q. But you haven't checked his data or his --
4 his assumptions on those, correct?

5 A. I've looked at it. I haven't studied it in
6 depth yet.

7 Q. Okay. Do you know if the -- the angle of the
8 meter was the same?

9 A. Again, I've looked at it, I've read those
10 issues.

11 Q. Well, my question is, do you plan on opining
12 as to the accuracy of the water flow meter?

13 A. I may. I'll reserve that right.

14 Q. Based on what?

15 A. I have not yet.

16 Q. Okay.

17 A. But based -- based on the rust water line
18 that I saw in the rotor, that raises some major issues
19 for me.

20 Q. But you haven't opined to that yet?

21 A. Not yet.

22 Q. Is there a reason you haven't done so yet?

23 A. I haven't gotten to it.

24 Q. But you were retained over a month ago,
25 right?

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1 A. I haven't been allowed access to the site.

2 Q. Well, you said you saw pictures that -- you
3 saw pictures, I believe, of a rust -- a rust line?

4 A. Yes.

5 Q. Okay. Now, sir, have you taken the numbers
6 in Mr. Penon's report and calculated what you believe
7 the efficiency of the E-Cat unit to be?

8 A. No.

9 Q. How would you calculate the efficiency of the
10 E-Cat unit if not COP?

11 A. Through, again, the conventional way. I
12 would use this. "This" being the power -- there again,
13 power test code, performance test code. They changed
14 the terminology. I would use that as a backbone. I
15 would measure the output by an appropriate steam flow
16 meter, output temperature, output pressure, output
17 steam quality. And then I'd measure all the other
18 inputs, return water, make-up water, hydrogen if there
19 is any, electric power input and then do the math.

20 Q. What's the math? Is there a formula?

21 A. Inputs -- on -- on the denominator, it's
22 outputs divided by inputs.

23 Q. That's COP, isn't it?

24 A. No. You're conflating the issues. COP is
25 the measurement of heat moved by a work-absorbing

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1 device. This is an energy conversion device. They're
2 two separate critters.

3 Q. What is the difference?

4 A. I've described it already. Should I do it
5 again?

6 Q. Okay. Well, besides the difference in the
7 devices, I believe you testified to measure COP, you
8 measure the energy output divided by the energy input,
9 correct?

10 A. I believe I did, yeah.

11 Q. Okay. And I believe that's what you just
12 described now for your cal- -- or how you would
13 calculate the efficiency of the E-Cat unit --

14 A. But --

15 Q. -- the only difference being how you
16 described the units.

17 A. No, sir. No. It's not how I describe the
18 unit, it's what they physically are. The E-Cat, for
19 all of our disagreement, is an energy conversion device
20 of some -- some type. The proper way to measure --
21 should I cut it off and wait till the change?

22 Q. Go ahead.

23 A. The proper way to measure is the -- the total
24 output, divide- -- in BTUs or whatever units used,
25 divided by the total input. That is the proper and

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1 correct way to measure the efficiency of the E-Cat or
2 any heat conversion device.

3 Q. Okay. Total output divided by total input?

4 A. Yeah.

5 Q. Okay.

6 MR. ANNESSER: And we will take a break so we
7 can change the tape.

8 THE VIDEOGRAPHER: We're off the record. The
9 time is 1511.

10 (Recess taken.)

11 THE VIDEOGRAPHER: We are on the record. The
12 time is 1521.

13 BY MR. ANNESSER:

14 Q. Sir, do you know where the thermocouples were
15 placed in the -- I'm going to call it the steam line.
16 I know you take exception to that -- in the steam line
17 coming out of the E-Cat plant?

18 A. I think one -- the second one was put in the
19 bottom of the pipe. And, again, I can't tell you the
20 lateral distance from the E-Cat unit. And I believe
21 the other one was put in the top of the pipe or close
22 to it.

23 Q. Okay. Do you know if that was done at the
24 request of Mr. Darden?

25 A. I don't know that. Wait a minute. He -- I

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1 seem to recall he and Mr. Rossi did have a discussion
2 about that, and he might -- Darden might have had some
3 input to that. I stand corrected, I think.

4 Q. Now, if one of the thermocouples was at the
5 bottom of the pipe, if water was running over that
6 thermocouple in liquid form, the reading would always
7 be below 100 degrees Celsius, correct?

8 A. It might be 100, but it would be 100 or
9 below, correct.

10 Q. So if the reading on that thermocouple
11 exceeds 100 degrees Celsius, that would mean that there
12 was no water running over that line, correct?

13 A. Or those -- the other -- the other reasons
14 that I mentioned earlier.

15 Q. I'm sorry, go through them again for me.

16 A. Sure. Heaters near the thermocouple, a box,
17 an electric/electronic box between the thermocouple and
18 the computer to bias the signal, or, again, the numbers
19 are just totally made up and written down.

20 Q. Okay. You said a box near the thermocouples?

21 A. Yeah, electronic box.

22 Q. How would that --

23 A. If you put -- and, again, I'm not an
24 electronic tech or a double E, but by taking the output
25 from the thermocouples and then running that through

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1 some electronic device with an adjustment on it, you
2 could bias that signal so that regardless of what
3 temperature the thermocouples were actually seeing --
4 even -- and I will -- I will, because I -- I heard very
5 clearly all your discussion with Penon about the
6 calibration of couples, all right, so, you know, I'll
7 -- I'll not argue that the couples were probably
8 properly calibrated. All right.

9 Even so, they could have been -- the
10 thermocouples proper could have been properly sensing
11 the temperature, but with an electronic device between
12 their wires and the computer input or whatever other
13 circuitry there was, an electronic device could have
14 been placed to bias that signal.

15 Q. Okay. And what type of electronic device
16 would that be?

17 A. Again, I'm not a double E. Most likely some
18 kind of a small resistor.

19 Q. A small resistor?

20 A. Again, I'm not a double E, but a double E or
21 an electronic tech could give you a hard-and-fast
22 answer.

23 Q. Have you seen any facts that would support
24 the conclusion that some type of device was put on this
25 line?

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1 A. I'm giving you reasons why the superheater
2 number could be high with water passing over it.

3 Q. Okay. But what I'm asking you, not just is
4 there any reason or any way to manipulate, certainly
5 that's -- that's a broad question.

6 A. Okay.

7 Q. But what I'm asking you is, have you seen
8 anything in this case to indicate that there was some
9 sort of box put around the thermocouple or the wire for
10 the temperature device -- temperature-reading device?

11 A. I have not seen anything, per se, yet. But a
12 flow analysis that I have done, as limited as it was,
13 indicates that their -- that these -- the pipes, the
14 size of the pipes could not possibly pass 1 megawatt of
15 thermal -- of steam much less, what was it, 780, 790,
16 800, whatever that year-long average was, could not
17 physically have happened.

18 So that further leads me to believe that
19 something was done to adjust that signal to give an
20 improper reading.

21 Q. Why do you say it could not have happened
22 that the pipes would have passed that much steam?

23 A. All right. Here we go. I'm looking -- what
24 I have in my hand, this is just a -- the rough of --
25 partial rough of Mr. Bass' dep.

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1 And when he was talking about the size of the
2 pipes, I have an Excel spreadsheet that I developed a
3 long time ago, because I do, obviously, a lot of steam
4 work. So rather than go through the calculations every
5 time, I just came up with a spreadsheet. And a copy
6 is -- I can make a copy available to you, because it's
7 in the information I provided on these discs, so I have
8 a copy of the spreadsheet, not a PDF, showing you my
9 logic. So what I have -- and if I -- do you want to
10 make this an exhibit?

11 Q. May I take a look at it?

12 A. Sure, you may. We may have to go back and
13 forth because that's the only one that I printed.

14 Q. Can you tell me what this is?

15 A. Yeah. What -- again, what it is, it's a
16 spreadsheet I developed for various pipe sizes. You
17 input the steam pressure and gauge pressure and then
18 that goes to a lookup table, which is on the second
19 page. That comes back with the properties of steam at
20 that pressure. And then from that look at, up table,
21 the flow of steam through a given size pipe at a given
22 velocity is automatically calculated.

23 And then what I did -- so that's the right or
24 the three main columns there on the -- I'm sorry, the
25 left as I'm looking at it.

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1 And then the right three columns are the
2 blatant BTU flow. Because as a steam engineer, the
3 steam flow is nice. If I'm sizing the boiler, I may
4 want 50- to 100,000 pounds of steam, but what I'm
5 really looking for is if one of the customers of the
6 steam is, let's just say, brewing beer, all right,
7 they're going to need X number of BTUs per hour in the
8 kettle to brew so many gallons of water to make beer.
9 Okay.

10 So I'm -- I'm really as much interested in
11 the BTU flow as I am the steam flow.

12 So see what I did was I converted megawatts
13 to BTUs, and that's a factor of 3,413. And I did the
14 calculations down on the bottom.

15 So if you look in the left-hand column -- and
16 I normally use 6,000 feet a minute steam flow. That's
17 a good conservative number. Pipes don't get too big to
18 be expensive and there's room for capacity expansion
19 within a given pipe. 12,000 is the upper limit that
20 anybody in the industry really uses. And, again,
21 that's in 12,000 feet per minute of steam flow.

22 So the two highlighted rows there, those are
23 the numbers that Mr. Bass indicated were probably the
24 size of the output pipe from the E-Cat. So looking
25 at --

1 Q. Hold on.

2 A. Sure.

3 Q. So the first column, NOM Size?

4 A. That's the nominal pipe size, nominal English
5 pipe size.

6 Q. Is that in inches?

7 A. Yes, sir.

8 Q. Okay. How many -- okay. And what is the
9 schedule?

10 A. That's -- that's the wall thickness of the
11 pipe. Schedule 40 is standard pipe wall thickness.
12 The higher the schedule number, the thicker the wall,
13 the flow area gets resume- -- reduced.

14 Q. Do you know the pipe size that was used?

15 A. No, I don't, that's why I'm relying on
16 Mr. Bass. He recalled it was a 3 or 4 inch.

17 Q. Okay. What if it was a 6 inch?

18 A. Then the numbers would flow through -- you
19 know, that would be a 6 inch number then. You know, so
20 you go down to the row number six, if it was a 6 inch,
21 then add those -- again, if it was steam, at those flow
22 rates, that's what the BTU throughput would be. Make
23 sense?

24 Q. Somewhat, but I -- I need some clarification.

25 A. Sure. All right.

1 Q. So looking here at your schedule, and I
2 apologize --

3 A. Yeah, and I apologize to Mr. Lomax, I only
4 made one copy.

5 - - -

6 (Deposition Exhibit 12 marked.)

7 - - -

8 Q. Okay. So looking at Exhibit 12, at a 4 inch
9 pipe size --

10 A. Correct.

11 MR. LOMAX: Have you said -- have you said
12 what it is on the record?

13 MR. ANNESSER: Okay.

14 BY MR. ANNESSER:

15 Q. And Exhibit Number 12 is a -- Pipe Steam
16 Carrying Capacity that has been put together by the
17 witness.

18 Now, what formulas underlie these
19 calculations?

20 A. It's the -- it's called the continuity
21 equation. And the -- the engineering use for that is
22 the mass flow equals the density times the velocity
23 times the flow, or $M \dot{=} \rho V A$.

24 Q. Okay. Do you make any assumptions in this
25 table?

1 A. No.

2 Q. Okay. So there could be no disagreement as
3 to these numbers?

4 A. No.

5 Q. So looking sort of at these numbers, on a
6 nominal size pipe, 4 inches, right --

7 A. Right. Okay.

8 Q. -- we follow that over with a presumptive
9 schedule 40, what is this next number?

10 A. That's the nominal flow area in square
11 inches, the idea of internal -- the internal diameter
12 of the pipe, the flow area at that ID for a schedule 40
13 pipe.

14 Q. Okay. So the -- that's the circumference?

15 A. The internal, it's the internal. You've got
16 the OD, the outer diameter of the pipe, the internal
17 diameter and then the -- the wall thickness.

18 Q. Okay. So looking at the next column, you've
19 got LMB per hour. What is that?

20 A. Pounds mass per hour.

21 Q. Pounds mass per hour at 6,000. What is
22 6,000?

23 A. Feet per minute. That's the steam flow
24 velocity.

25 Q. Okay. How do you determine the steam flow

1 velocity?

2 A. Through the formula I just told you about, M
3 dot equals row VA.

4 Q. Okay.

5 A. And then you take -- you just do simple
6 algebra to back the velocity out. Velocity equals
7 whatever.

8 Q. So why do you have three different numbers
9 if --

10 A. Because just -- it was just a convenience for
11 me. Again, I do a lot of steam work, so just to
12 indicate what the velocity might be at -- or, I'm
13 sorry, what the flow might be at a given velocity.

14 Q. Okay. So let -- let's just, for the sake of
15 going through this, look at the middle section on this
16 section --

17 A. Sure.

18 Q. -- which is LBM per hour at 9,000.

19 A. 9,000 feet per minute, correct.

20 Q. Okay. And there is a number directly across
21 from the 4 for the size of the pipe?

22 A. Correct.

23 Q. Which is 1,781?

24 A. That is it.

25 Q. What does that represent?

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1 A. That's the pounds of steam per hour that will
2 pass through that pipe under those conditions.

3 Q. Okay. The pounds of steam per hour?

4 A. Yes. And this add -- the other thing that
5 you didn't point out, but I will, is what I've got up
6 in the To block under Steam Pressure, PSIG, that is a
7 drop-down table or drop-down box, so I've inputted, if
8 I may, on the back here, I've just picked some arb- --
9 not arbitrary, but commonly used numbers of PSIG,
10 convert them to PSIA. Then I've got the specific
11 volume and the latent heat. Then this is what I use in
12 the lookup table to do the calculations. These are the
13 steam --

14 We were talking earlier about the numbers
15 from Keenan and Keyes. That's where these numbers come
16 from, is from Keenan and Keyes.

17 Q. Okay.

18 A. All right.

19 Q. Now, going back to this. So, again, looking
20 at our number of 1,781 pounds per hour -- and that
21 increases if the pipe size gets larger, correct?

22 A. Sure. Absolutely.

23 Q. In fact, if we go to a 6 inch pipe, it goes
24 at 9,000 LBM per hour, you actually go to 4,044 pounds,
25 correct?

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1 A. Yeah, that looks right. Yeah.

2 Q. Okay.

3 A. Yeah, that's it.

4 Q. Now, the 6,000, 9,000 and 12,000 in the steam
5 flow section, those are numbers that you've selected as
6 being more in terms of the commonplace?

7 A. Those are indus- -- kind of industry standard
8 numbers.

9 Q. Okay. But you don't have any information
10 regarding what the actual steam flow rate was at the
11 E-Cat plant?

12 A. That's the whole point. That's the whole
13 point of this drill, sir, is looking at -- the E-Cat is
14 represented to put out a megawatt of thermal heat.
15 Okay.

16 Q. Okay.

17 A. So if you go down to the bottom to the
18 calculation there, if you multiply a megawatt by 3,413,
19 which is the conversion number, you'll come up with
20 whatever that two -- whatever that million number is.
21 All right. So that's the number of BTUs in a megawatt
22 of steam at zero PSIG.

23 So then we get over to the BTU flow column,
24 the latent BTU, and you can see that there's a pretty
25 big disparity between what the pipe will pass and the

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1 BTUs in a megawatt thermal.

2 Q. We're going to come back to that in just a
3 moment.

4 Sir, in -- in your report, the next section
5 refers to test instrumentation.

6 A. What page are we on?

7 Q. Page 13.

8 A. Okay. All righty.

9 Q. Does -- the first question I have for you is,
10 does the ASME have a standard procedure for testing
11 energy-producing units similar to the E-Cat?

12 A. Energy conversion units.

13 Q. Okay. And --

14 A. A boiler is the energy conversion unit.

15 Q. Okay. And the E-Cat, which purports to
16 produce energy, more like a power plant?

17 A. No. A power plant is an energy conversion.
18 A power plant converts the chemical energy in coal or
19 natural gas or whatever into electricity. So it's
20 converting energy from one form into another form.

21 Q. Okay. And the E-Cat purportedly does the
22 same?

23 A. Yeah.

24 Q. It's converting the energy stored in the --
25 we'll call it the catalyst as well as the electrical

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1 energy into thermal energy or steam?

2 A. Well, I'll disagree with the first part of
3 your question. You know, the second half, the
4 electrical, I agree with. The catalyst part I disagree
5 with, because the catalyst -- I don't believe the
6 catalyst really -- even if it does enter in -- into the
7 reaction, it's still not going to create more energy
8 than was input to it.

9 Q. So in a nuclear power plant, energy comes in
10 as we discussed in the form of electrical energy, for
11 example, to run the plant and the equipment?

12 A. No. That comes from the generators
13 themselves. That's plant internal power.

14 Q. With respect to the E-Cat, if it were, in
15 fact, a low energy nuclear reaction, you follow so far?

16 A. Okay.

17 Q. Okay. Then it would give off additional
18 energy than the electrical energy put in, correct?

19 A. If it were, but it's not.

20 Q. According to Mr. Stokes?

21 A. And Mr. Rossi.

22 Q. Do you know what type of reaction Mr. Rossi
23 claimed it was?

24 A. Initially, I believe, he claimed it was an
25 LENR. But I think over time, that story changed. And

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1 now I think he's saying it's something like nickel
2 catalyst with hydrogen or some kind of hydrides.

3 Well, a catalyst -- again, I'm not a chemist
4 or a chemical engineer, but what a catalyst does is a
5 catalyst enhances a reaction. It does not typically
6 enter into it.

7 Q. So it's your position and your belief today
8 that the only energy coming out of the E-Cat plant was
9 the energy that was put in -- the electrical energy put
10 in from FP&L?

11 A. Minus losses.

12 Q. Minus losses.

13 Now, I think, sir, I think I'd asked you
14 before, I just want to follow back, other than the
15 picture that you saw where there was water vapor, as
16 you described it, in the E-Cat, you were aware that
17 Mr. Stokes stated that there was a steam leak?

18 A. I think, yeah, he did say that as I recall.

19 Q. And you don't believe that statement that it
20 was steam?

21 A. Well, he called it a steam leak. You know,
22 what he -- you know, he may have just used the generic
23 vernacular to describe a steam leak. Instead of being
24 a hot water leak, it's vapor. You know, I think that's
25 more probable, he was using the generic vernacular

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1 instead of being technically rigorous and -- and picky.

2 Q. Have you talked to him about that?

3 A. Never talked to him.

4 Q. Have you called him?

5 A. Never met the man.

6 Q. Don't you think it would be prudent to give
7 him a call before making an assumption as to what his
8 statements mean or don't mean?

9 MR. LOMAX: Objection to the form of the
10 question.

11 A. I hadn't really considered that, but that's
12 probably going to be on my to-do list now.

13 Q. Okay. So looking at page 14, third
14 paragraph, now, again, this section is entitled Test
15 Instrumentation, although it discusses the boiler and I
16 don't know that it necessarily addresses the
17 instruments used other than in the broad sense.

18 Is it your opinion that any of the
19 instrumentation used by Engineer Penon was somehow
20 defective or flawed?

21 A. Maybe not defective or flawed, but what I --
22 again, I've not delved into this deeply, but I believe
23 the pressure transmitter was only good to 40, 50, 60
24 degrees C, and --

25 Q. And who told you that?

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1 A. I believe it was Joe Murray.

2 Q. But you have no knowledge. You didn't look
3 that up yourself, did you?

4 A. I did not independently confirm that, no.

5 Q. Okay.

6 A. And then the whole -- all the issues with the
7 water meter itself, you know, the sizing of it, the
8 slope and inclination and all those other issues
9 related to the water meter, I have not delved into
10 those in any depth yet.

11 Q. Okay. So you are not formulating at this
12 time any opinion as to those matters?

13 A. Correct, at this time, but I do reserve the
14 right to do so later on if need be.

15 Q. So am I correct in saying that your -- your
16 report states that you would have done things
17 differently, you would have had a steam flow meter?

18 A. Yes.

19 Q. You would have had temperature gauges?

20 A. Well, we do have temperature gauges, so I'll
21 agree with that.

22 Q. Okay. We do have those.

23 You would have had a manometer, is that --

24 A. Well, but a manometer is just another term
25 for a pressure gauge. A manometer measures low

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1 pressure. But some means for pressure measurement,
2 yes.

3 Q. Okay. And -- and we had that?

4 A. Correct, we did.

5 Q. What else would you have had?

6 A. A steam quality meter.

7 Q. Okay. What -- and a steam quality meter.

8 And, again, we agreed that if, in fact, the
9 temperatures being reported were accurate, that there
10 could be no question as to the steam quality?

11 A. True. But, again, for an invention of this
12 magnitude, I would have spent a couple thousand --
13 whatever it costs, a couple thousand bucks extra and
14 put in a steam quality meter and -- just to remove all
15 doubt.

16 Q. Do you know if Industrial Heat ever asked to
17 put in a steam quality meter?

18 A. I do not know.

19 Q. Was there anything else other than --

20 A. Then I would -- again, that's on the output.

21 The input, temperature -- again, I would
22 measure all the appropriate temperatures and pressures
23 on the inputs and the outputs. And then on the
24 electric side, voltage, ampering phase -- amperage
25 phasing, you know, all of the relevant data that I

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1 would think would need to be collected.

2 Again, to get kind of cutesy, all the
3 goesintas and all the goesoutas with the proper
4 instrument for the conditions at that particular
5 service.

6 Q. And what were those conditions and
7 instruments at that particular service?

8 A. Well, again, have -- not having been there,
9 you know, we've talked about the steam flow, the
10 return, whatever it might have been. Some kind of
11 appropriate flow meter, temperature, pressure. Same
12 thing for the make-up water, if there was any blowdown.
13 Typically you don't measure blowdown. Typically it's
14 just considered a little bit of percentage.

15 And then on the electricity coming in, the
16 voltage on each leg, the phasing -- well, voltage on
17 each leg, the phasing. Let's see, voltage, phasing.
18 I'd check the power factor.

19 Q. But you haven't formulated any opinions as of
20 this time on those matters, have you?

21 A. No. And then there's a couple more I'm
22 trying to think of, but -- there's probably a couple
23 more, but those -- those are the big ones right there.

24 Oh, and any hydrogen coming in. And -- and
25 also the weight. I would weigh -- take the weight of

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1 the modules at the beginning of the test, the weight of
2 the modules at the end of the test.

3 Q. Those are all things you'd put into a test
4 plan or a --

5 A. Yeah.

6 Q. Okay.

7 A. You know, and it's kind of interesting
8 because I found that there was a whole lot of -- just a
9 phenomenal amount of precision in the measurements that
10 were made, which kind of -- wow, that's pretty cool.
11 You're going out to four decimal places to measure
12 these -- these -- these parameters they were measuring.
13 I thought that was pretty interesting.

14 Q. Okay. And what do you base that on?

15 A. The data from Fabiani and -- mostly from
16 Fabiani and also from Mr. Rossi.

17 Q. Now, have you plugged that data into the COP
18 calculation that was performed by Mr. Penon to see if
19 -- if that greatly alters the COP?

20 A. No. What I -- what I did is I looked at it
21 just from a data integrity standpoint. A few decimal
22 places out when you're talking hundreds and ten
23 thousands and ten thousands, our difference is deciding
24 on the COP. As far as doing the calculation goes,
25 that's not going to affect it to any significant

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1 effect.

2 Q. Okay. So in that case, if you rounded then,
3 it would not necessarily have any large impact --

4 A. Yeah, it would be -- it would be an impact on
5 the number, but it would be pretty small.

6 Q. Di minimis is the word.

7 A. Thank you.

8 Q. Okay. Now, sir, looking at page 14, the
9 second to last paragraph within the section before we
10 get to E-Cat Heat Rejection --

11 A. Wait. Help me out here. Where are we at?

12 Q. The second to last above E-Cat Heat
13 Rejection.

14 A. Oh, okay. Okay. I gotcha. I'm sorry.

15 Q. The paragraph that starts with, Mr. Joe
16 Murray addressed some of his concerns to the ERV --

17 A. Yes.

18 Q. -- do you know what the ERV's responses were?

19 A. I -- I have not seen those.

20 Q. Did Mr. Murray tell you?

21 A. No, he did not. I think his -- to the best
22 of my recollection, I'm not sure he did get a response.
23 "He" being Mr. Murray.

24 Q. Okay. And then you list a number of things.
25 This author shares -- also shares the other concerns

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1 Mr. Murray has about other issues in his letter, to
2 wit: 2, the consistency of reported flow rate
3 statistics; 3, the number of reactor units in operation
4 varied substantially over time; 4, system alteration on
5 the night of February 16th or the morning of February
6 17th; and, 5, the flow of steam through the pipe to
7 J.M. Products. This author reserves the right to
8 address these issues at a later date.

9 As of this point in time, have you formulated
10 an opinion as to any of those matters?

11 A. Let's see, steam flow rate statistics, I've
12 not looked at those. I would really like to have
13 Mr. Penon's original spreadsheets.

14 I'm not -- Mr. Murray has done more with the
15 number of reactor units, so I need to dig into that.

16 Q. Sir, the -- the question is real specific.

17 A. Oh, maybe I misunder- --

18 Q. Sitting here today, have you formulated any
19 opinions as to the matters listed in this paragraph to
20 which you are prepared to testify?

21 A. Let's see here. Yeah, the flow rate -- the
22 flow rate statistics we've talked about already in
23 great detail so I don't need to opine any more on that.

24 Number of reactors, not now.

25 System alteration, not now.

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1 And then the flow of steam through the pipe,
2 we've talked about that. And I should have put "steam"
3 in quotes, so that's a typo on my part. But, yeah, and
4 we've talked about the steam flow, so I've already
5 opined on that.

6 Q. Okay. Well, with respect to the steam flow,
7 that's not included within this report, is it?

8 A. No, it's not. And I did -- again, I did that
9 -- I did not know what the diameters of the pipe were.
10 When I found -- when I read Mr. Bass's dep and I saw
11 that, I thought, this is something I need to look at,
12 so that's when I did it.

13 Q. So that was done after the fact?

14 A. After the report, yes, sir.

15 Q. And have you done a subsequent report to add
16 that in?

17 A. Not yet.

18 Q. Sir, the next section is entitled he-Cat --
19 I'm sorry, E-Cat Heat Rejection. And to do this, you
20 do a number of calculations here.

21 And I think -- or am I correct in saying that
22 those are predicated upon this chart that you've
23 provided me?

24 A. They're somewhat similar. If you look at 79
25 times 3,413 -- and I hope my numbers come out exactly

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1 the same -- so, yeah, this was predicated on the
2 average over the what, year, 15-month testing period,
3 whatever the number of days was. That's why I used the
4 790 and then the 1 megawatt down at the very bottom,
5 just to give the two numbers for a comparison.

6 Q. Okay. Let me ask you a question. The number
7 3,413 BTU hours divided by kilowatts, where -- where do
8 you get that number?

9 A. That -- that's a standard conversion from
10 metric to English, English to metric.

11 Q. BTUs to --

12 A. BTUs per hour per kilowatt.

13 Q. And, sir, looking at the next page, page 15
14 of your report --

15 A. Yes.

16 Q. -- the first real paragraph, other than your
17 calculations, it says, an 80 boiler horsepower boiler
18 is a small commercial boiler. For illustration, below
19 is a generic picture of a very common Cleaver-Brooks
20 steam boiler of this type.

21 That's not what exists at the E-Cat plant, is
22 it?

23 A. I couldn't hear your last part.

24 Q. That's not what's at the Doral facility?

25 A. Oh, no, no. This was -- this was put in just

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1 merely for comparison to compare the E-Cat to
2 conventional technology of the same output, not
3 necessarily the same physical size --

4 Q. Okay. Is that --

5 A. -- or configuration.

6 Q. Is that 80 boiler horsepower (BoHP) boiler
7 capable of putting out the amount of -- well, capable
8 of putting out -- I believe you used 790 kilowatt --
9 kilowatts per hour?

10 A. Yeah. If you -- if you look at the top of
11 page 15, that's what those two -- those calculations
12 were, just a cross-check. And I converted kilowatts to
13 BTUs and then BTUs to boiler horsepower.

14 Q. Okay.

15 A. And then -- and then the second calculation,
16 I did it just straight, I looked it up off another
17 conversion just to do a cross-check, because I always
18 try to cross-check my work, and they came up pretty
19 close.

20 Q. Okay. So you state here that it does not
21 appear to be greatly different in size than the E-Cat.

22 What does that tell you?

23 A. Just -- I'm just talking phys- -- you know --
24 you know, its output, thermal output -- alleged thermal
25 output would be the same. And then the physical size,

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1 it's roughly the same again, you know --

2 Q. How long is that boiler?

3 A. Oh -- and, again, this may not be an 80
4 horsepower boiler. This is a Cleaver-Brooks picture.
5 All right. So if you look at the man, yeah, probably
6 12 feet long.

7 Q. 12 feet long and --

8 A. Ish.

9 Q. -- what about height?

10 A. Well, it looks like about 8 feet, again,
11 depending on the guy. Total, probably 8 foot-ish.

12 Q. Were you aware that the E-Cat is contained in
13 a 40-foot container?

14 A. I was.

15 Q. Okay. And you said this is 12 foot long.
16 We're talking about --

17 A. This is just to give a comparison of the --
18 of the size of an 80 horsepower boiler to compare it to
19 the size of an E-Cat.

20 Q. You would agree that it is greatly different
21 in size than the E-Cat, wouldn't you?

22 A. Not greatly different; it is somewhat
23 different.

24 Q. In fact, the 40-foot container is more than
25 twice and almost three times -- actually three times as

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1 long?

2 A. Okay. Fine.

3 Q. Did that have any effect on your report, sir?

4 A. Well, just, again, I was doing this for, you
5 know, comparison's sake, not as an exact numerical,
6 here's apples, here's oranges.

7 And when I say greatly different in size, you
8 know, if you would say, now, if we compare it to this
9 building, yeah, it's greatly different. But the whole
10 E-Cat is several modules and that are, you know,
11 different size kind of stacked together. So if you
12 look at the volume and so forth, yeah, they're
13 different. The E-Cat is bigger, I will -- you know,
14 there's no question about that, but they're not hugely
15 different is what I'm saying.

16 Q. Okay. So -- so this boiler, which is
17 approximately a third of the size, is capable of
18 putting out the same amount of energy that the E-Cat is
19 purported to have put out?

20 A. Yes, that's correct.

21 Q. Now, you then, in the paragraph below that,
22 go in and you ask a -- what appears to be a rhetorical
23 question, what happens to this heat --

24 A. Correct.

25 Q. -- the amount of heat that's being put out by

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1 the boiler or by the unit, Doral.

2 And you go on to describe that in a
3 commercial operation, that the heat would be used and
4 the product stream would then have to be cooled for
5 further processing and packaging and shipping, et
6 cetera, basically stating that all of the heat that
7 entered the product stream would leave the product
8 stream either by air cooling or by some sort of heat
9 exchanger?

10 A. Correct. There may -- and I should have
11 probably added a little bit of water cooling depending
12 on the process, but that doesn't change the overall
13 concept of what I'm trying to say. The heat has to go
14 somewhere.

15 Q. In reference to make --

16 A. Did you change pages?

17 Q. Yeah. Go on to page 16. You state, to
18 illustrate, if one boils water (212 degrees Fahrenheit)
19 to make sweet tea.

20 Now, when you make sweet tea, sir, do you
21 turn it into steam, or does it allow -- do you allow it
22 to remain in the liquid form?

23 A. I don't make sweet tea, and I did that
24 because we'd be -- we're going to play to a southern
25 audience, so -- no. But you get the water right where

1 it boils and when it's -- even before it starts to
2 boil, you've seen people put a pan of water on the
3 stove, at maybe what, 195, 200-ish, it's going to start
4 to vapor because the vapor pressure is going up. You
5 know, it's not really steaming, it's vaporing.

6 So, no, once the water starts to boil, then
7 you put it in the tea. Because once it's 212, it's not
8 going to get any hotter than that at sea level. That's
9 as hot as it's going to get.

10 Q. Okay. So you can't really compare that
11 necessarily to steam that you refer to in the paragraph
12 before?

13 MR. LOMAX: Objection to the form of the
14 question.

15 A. I'm not following your question.

16 Q. Well, you state in the paragraph before, all
17 the heat that entered the product stream would have to
18 leave the product stream --

19 A. Yep.

20 Q. -- either by air cooling or some sort of heat
21 exchanger?

22 A. Yep.

23 Q. You go in to illustrate -- and you're talking
24 about hot water as opposed to steam?

25 A. Right. But the same concept applies. The

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1 heat has to go somewhere. The steam or the hot water
2 are hotter than the surroundings. And, again, if we go
3 back to your -- the coffee analogy, you get some 180
4 degree, \$2 million McDonald's coffee and you sit it in
5 a room, over time that coffee is going to cool to room
6 temperature. The heat has to go somewhere.

7 Q. Okay. Now, you say in the second paragraph
8 on page 16, In an industrial process, the product
9 cooling is accelerated by the use of heat exchangers or
10 fans or other mechanical means of cooling.

11 And I believe you go down from there, excuse
12 me, and you say, in the issue at hand, let us first
13 assume that air is used to cool the product stream.
14 Please keep in mind that 2,700,000 BTUs enter the
15 product stream every hour of every day in the test.
16 You go on to say, the same 2,700,000 BTUs per hour then
17 leaves the product stream and has to be rejected to the
18 environment?

19 A. Correct.

20 Q. Okay. Now, the next paragraph, you refer to
21 the simulation videos performed by Engineer Murray?

22 A. Uh-huh, I did.

23 Q. And you don't know what presumptions were put
24 into those calculations or simulations?

25 A. That's correct. I've testified to that

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1 already.

2 Q. Do you know the size of the Doral facility?

3 A. I do not, not -- not with any specificity
4 yet.

5 Q. Okay. And you don't -- and you didn't do
6 your own calculations or projections?

7 A. Not like Mr. Murray did in this regard, no.

8 Q. Did you do any others?

9 A. For airflow?

10 Q. Well, for --

11 A. Or for heat simulations? No, I have not done
12 a heat simulation similar to what he did.

13 Q. Do you know what assumptions Mr. Murray made,
14 such as were there any vents?

15 A. I -- I believe he did show some vents, but,
16 again, how he sized them or so forth, the specifics I
17 do not know at this time.

18 Q. And would those specifics affect your opinion
19 as to the ability of the environment to reject that
20 heat or to dissipate that heat that was generated by
21 the plant?

22 A. To a small degree, yes.

23 Q. To a small degree. Why is that?

24 A. Well, because the heat is being generated at
25 such a high rate that it's going to take a lot of air

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1 movement to get rid of it.

2 Q. And so if, let's say, there were large bay
3 doors at the back of the facility that were left open,
4 would that allow heat to escape?

5 A. It would allow some escape, because, again,
6 hot air rises. Okay. So that air is going -- you
7 know, the heat is going to be generated and that air is
8 going to be continuously heated, it's going to tend to
9 rise, and then some of it will start to spill back
10 down.

11 So I don't know if Mr. Murray did a
12 simulation with doors open or doors closed, but that
13 might be a very productive thing to look at.

14 Q. Okay. Now, the heat rising could go up to
15 vents in the ceiling, correct?

16 A. It could, yes.

17 Q. Okay. Do you know -- do you know how many
18 vents there are in the ceiling?

19 A. No, I don't. The pictures I took when I was
20 outside last week looked like there was one power
21 ventilation fan, and then the other might have just
22 been an area that it might have been a skylight. I
23 couldn't tell from a distance.

24 Q. So you don't know, you're speculating?

25 A. Well, one is -- one is definitely a vent fan.

1 Okay. I know that for a fact. Whether it was running
2 or not, I don't know.

3 The other, I'm just going to have to say I
4 don't know for sure right now.

5 Q. How much -- how much heat could be removed by
6 that vent fan?

7 A. Not knowing the size of it, I can't answer
8 that now.

9 Q. Okay. Do you know if Mr. Murray assumed that
10 that was a vent fan in operation?

11 A. That, I don't know.

12 Q. How much heat could be removed by opening the
13 doors in the rear of the plant?

14 A. Again, that, I can't -- I can't give you a
15 hard answer.

16 Q. Okay. How many vents or windows were there
17 at the facility?

18 A. I don't think there were any windows at the
19 back on the loading dock side. There was a door, there
20 was a man door. I believe there were three -- three
21 bays. And then on the front, I did see -- off of what
22 I'm assuming is the office area, there was a door and
23 the typical glass skylight or lights around it.

24 And then the windows above it we discussed
25 from Mr. Murray. I -- I want to say there were six

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1 windows, there may have been four. Those are the ones
2 that I'm aware of. And, again, having -- we'll have to
3 look at the internal configuration of the building
4 before I can give you a hard number.

5 Q. Okay. Now, you go on to describe, after
6 going through Mr. Murray's reports, which he did not
7 verify, you go on to say that, JMP could have used a
8 roof-mounted fan to remove all the rejected heat.

9 Do you know if that was done or not?

10 A. I -- I didn't -- I have -- I've seen no
11 evidence of it to date. From what I've seen, I don't
12 see any evidence of it.

13 Q. And what you've seen -- well, turning to page
14 17, these are just examples of roof-mounted ventilation
15 units?

16 A. The top one is. The bottom one is a standard
17 cooling tower.

18 Q. Okay. Now, turning the page to -- and do you
19 know if either one of these were present?

20 A. I know a cooling tower was not present.

21 Q. How do you know that?

22 A. I didn't see it. I looked at airflow. I
23 looked at the facility, and I looked at air photos from
24 Google and Bing, and saw nothing anywhere in the area
25 that even resembled a cooling tower.

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1 Q. Let's talk about those photos.

2 Those are the photos that are contained on
3 page 18?

4 A. That is correct, yes, sir.

5 Q. When were those photographs taken?

6 A. That, I don't know.

7 Q. Could they have been taken in 2012?

8 A. They could have been, sure.

9 Q. Okay. Could an overhead unit have been added
10 since that time?

11 A. It's possible.

12 Q. Okay. Could a water tower have been added
13 since that time?

14 A. A cooling tower, depending on the roof
15 loading and so forth, it's possible to install a
16 cooling tower, yes.

17 Q. Okay. What about a roof-mounted ventilation
18 unit?

19 A. Same answer, yes, it's possible.

20 Q. And you don't know whether that happened or
21 not?

22 A. Not at this time, no.

23 Q. Okay. Similarly, a heat exchanger could have
24 been installed within the unit; is that correct?

25 A. Now, you're going -- please be more specific

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1 with me, because I'm still -- you know, when you say --
2 and, again, I'm not trying to be difficult here, but I
3 want to know to which heat exchanger you're referring.

4 Q. Okay. The heat exchanger that we referenced
5 before on the mezzanine --

6 A. Okay.

7 Q. -- and you now have a description of,
8 correct?

9 A. Well, I have what was represented to Dr. Wong
10 as being the heat exchanger.

11 Q. Okay. If that existed, how much heat could
12 that have removed?

13 A. Well, you know, with a huge if, in all caps,
14 were true, I would say Dr. Wong's calculations are
15 probably reasonable.

16 But unless he knew the exact configuration
17 and how the pipes were arranged and how the airflow
18 was, you know, all the -- all of that goes into that
19 calculation. So he's -- he's operating as much in the
20 blind as I am.

21 Q. Okay. So if we were to assume, okay, that
22 the information provided to Dr. Wong that he has
23 reflected in his report were correct, you would agree
24 with me, wouldn't you, sir, that the amount of heat
25 being produced by the E-Cat unit, or purportedly being

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1 produced by the E-Cat unit, could have been dissipated
2 through that heat exchanger?

3 A. How -- well, again, with the huge if, I will
4 give you a qualified yes.

5 But here's the question I have: How did the
6 heat get from the serpentine -- again, I shouldn't be
7 asking you questions, but it's a rhetorical. I don't
8 understand how the heat got from the serpentine
9 exchanger in the black box to the alleged heat
10 exchanger in the mezzanine. Nobody has explained that
11 to me yet.

12 Q. Have you asked?

13 A. I've asked these fellows and Mr. Murray and
14 they don't know.

15 Q. Okay. Do you know if they've asked anyone?

16 A. That, I don't know.

17 Q. Did you write an email to Mr. Barry West and
18 ask?

19 A. I have no idea where he is.

20 Q. What about Mr. Penon?

21 A. I -- no. No. I make it a practice not to
22 talk to people on the other side of the issue, as you
23 can understand.

24 Q. Is Mr. Penon on the other side of the issue?

25 A. He's a defendant.

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1 Q. Is he?

2 A. I believe he's -- isn't he a named defendant
3 in the countersuit?

4 Q. He's not a defendant in this case as it
5 stands now. He was originally named.

6 A. Then I guess I'm at a bit of a loss. Wait a
7 minute. Here. Here it is on the -- yeah, he's -- in
8 this countersuit, Fabio Penon.

9 Q. What are you looking at, sir?

10 A. Exhibit Number 7, the front cover page.

11 Q. Do you know whether he's been dismissed from
12 this suit?

13 A. That, I don't know.

14 Q. So before you went down to Mr. Penon's
15 deposition, did you ask counsel whether he was still a
16 party to the suit?

17 A. No. It didn't seem like -- no, I did not.

18 Q. Did you ask him any questions other than the
19 questions that were asked during the course of the
20 deposition?

21 A. I'm not a lawyer. I couldn't legally ask him
22 questions, I don't believe.

23 Q. Could you have walked up to him and said,
24 hey, how are you doing today?

25 MR. LOMAX: Objection to the form of the

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1 question.

2 A. I think we exchanged a little pleasantries at
3 the end, but that was it.

4 Q. Did you ask him if he wouldn't mind if you
5 asked him questions?

6 A. No, I did not ask him.

7 Q. Now, sir, looking at --

8 A. And, again, at the time, I was -- let me --
9 let me clarify a little. At the time, I was presuming
10 that he was still an adverse party, so ethically I
11 cannot talk to him or ask him questions if he's an
12 adverse party.

13 Q. Who told you that you cannot talk to him?

14 A. That's been my understanding all along. And
15 even if I can, I don't, because he's an adverse party
16 and I just -- I make it a practice not to do so.

17 Q. Okay. The -- looking at page 20, is it fair
18 to say that the first two paragraphs are just simply
19 your description of what you see in that photograph?

20 A. It is.

21 Q. Okay. Then in the third paragraph starting,
22 Is there anyplace else in the facility, then you go on
23 and you perform a calculation to determine whether
24 there could have been -- or city water could have been
25 used to reject that amount of heat energy, correct?

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1 A. Correct.

2 Q. And based on the calculation that you
3 performed assuming the 50 degree inlet water
4 temperature and 130 degree water outlet temperature.

5 Now, you say sewer temperature restriction.
6 Where did you get that information?

7 A. A lot of places use 130 degrees, well, as a
8 sewer temperature restriction, number one, because a
9 lot of sewer pipes are now made out of plastic, and if
10 you put really hot water down them, they don't like it.
11 It will destroy them or damage them. And then a lot of
12 times, waste treatment plants, the bugs like a certain
13 temperature, so --

14 And then Miami-Dade may be different. But
15 most of the jurisdictions that I'm familiar with have
16 some kind of a sewer water temperature restriction to
17 protect their facilities and protect their -- their
18 biological processes in the waste treatment plant.

19 Q. Is it your opinion, sir, with respect to the
20 water flow meter that was used on the E-Cat, that
21 additional water was being supplied from the J.M. side?

22 A. I'm -- I'm raising that as a possibility.
23 I'm not stating it for an absolute fact because, again,
24 our side of the litigation has not been allowed in
25 there yet.

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1 Q. Where -- where would that water have come
2 from?

3 A. The city.

4 Q. Okay. But you checked the -- the water usage
5 for that facility and it averaged 4.6 gallons per hour?

6 A. That's -- yeah, that's what the numbers tend
7 to indicate.

8 Q. Okay. Would 4.6 gallons per hour of water
9 flow be sufficient to result -- wait. Is that between
10 1 and 1.6 cubic meters of water?

11 A. I'd -- I'd have to do the calculation. I
12 can't answer that right now.

13 Q. Okay. So you don't --

14 A. It's a pretty simple calculation, but I can't
15 answer it right now.

16 Q. You don't know whether 4.6 gallons of water
17 is equivalent to 1 cubic meter of water?

18 A. I forget the conversion factor right now.

19 But, again, that -- to me, that's a trivial
20 issue. It's a math calculation.

21 Q. Okay. So you go on and you do that
22 calculation with respect to a fluid cooling system, a
23 water cooling system, correct?

24 A. Correct. Some kind of a heat exchanger,
25 yeah.

1 Q. And based on the fact that there were only
2 4.5 gallons per hour used, you came to the conclusion
3 that there was not enough water usage from city water
4 to have cooled that amount of heat --

5 A. Correct.

6 Q. -- is that correct?

7 A. Yes, sir.

8 Q. Okay. So you've determined that city water
9 was not used for that heat rejection?

10 A. Correct.

11 Q. Now, you then go down and say, where did the
12 rejected heat go? Air cooling, no.

13 What did you base that conclusion on?

14 A. My analysis of the airflow -- a lot on
15 Mr. Murray's -- not my analysis, Mr. Murray's
16 analysis --

17 Q. Okay.

18 A. -- on -- on what happened, how the building
19 would heat up, if that amount of heat will continually
20 reject it into the facility.

21 Q. Okay. But you don't know what presumptions
22 were made and what -- what available avenues for that
23 heat energy were, such as the number of vents, their
24 operational ability or whether there was a heat
25 exchanger up on the mezzanine, as you described it, of

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1 the facility?

2 A. Well, we've discussed that. Again, I'm
3 not --

4 Q. I just want to be very specific here.

5 With respect to your conclusion that it was
6 not done by air cooling, that was predicated upon
7 Mr. Murray's analysis?

8 A. Primarily, yes.

9 Q. Okay. The cooling tower, no.

10 Is that predicated upon your observation of
11 those two aerial photographs?

12 A. Of the two air photos. And then, again, in
13 looking at the picture of the facility, go back up a
14 page to look at the -- the photograph on page 20 of
15 Exhibit 7, I don't see any kind of industrial
16 equipment, I don't see -- I see there might be a couple
17 of pipes on -- on the backs -- on that back wall where
18 they're going up. Those could be for an
19 air-conditioner, those could be roof drains, but I
20 don't see any kind of serious piping, racks, anything
21 that would indicate an industrial endeavor inside of
22 that enclosure.

23 Q. What all -- what would you expect to see --

24 A. Well, let me -- I'm sorry. Let me finish.
25 I'm sorry.

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1 So I don't -- you know, to go up to a cooling
2 tower and back, you're probably -- again, without doing
3 a design calculation right now, probably looking at 6-,
4 maybe 8-inch pipe going up and coming back.

5 Q. How large is that pipe on the back wall in
6 that photograph?

7 A. I don't know. There's no scale.

8 Q. So you don't know, it could be a 6-inch pipe.

9 A. It could very well be.

10 Q. It could be an 8-inch pipe?

11 A. Possibly.

12 Q. So you don't know, you're speculating?

13 MR. LOMAX: Objection to the form of the
14 question.

15 A. It's a speculation -- and speculation may be
16 the wrong word -- based on 40 years of working in and
17 around real industrial facilities.

18 Q. Do you know what they were producing at J.M.?

19 A. Nothing, I don't think.

20 Q. And what do you base that conclusion on, sir?

21 A. The evidence I've seen.

22 Q. What evidence have you seen?

23 A. There's no -- well, again, I see no evidence
24 of an industrial facility here in the picture that we
25 discussed.

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1 Q. What is lacking from that photograph that
2 tells you that there was no production whatsoever?

3 A. May I read to you? I've written it in the
4 report. The second paragraph below the picture, The
5 last interior. All right.

6 And then the second, Other than the small
7 items along the left wall, there are no visible pipes,
8 pipe racks, pipe drops, conduits, cable trays,
9 transformers, switchgears and so on and so on with
10 which one would normally associate even a small
11 manufacturing facility.

12 And that's not exact, but I shortened it a
13 little.

14 Q. Now, those pipe drops, conduits, pipe racks,
15 visible pipes, cable trays, that would vary depending
16 on what you're producing, isn't --

17 A. Oh, yeah, no argument.

18 Q. So what were they allegedly producing there?

19 MR. LOMAX: Objection to the form of the
20 question.

21 A. I've heard various things. I've heard
22 cooking platinum sponge, I've heard graphing. That's
23 really all I've heard.

24 Q. Okay. But --

25 A. Let me finish the question. I'm sorry.

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1 But I've seen no invoices sent out for
2 products sold to customers. I've seen no receipts for
3 incoming materials. I've seen no construction
4 documents that show how the facility was constructed.
5 So there's nothing that leads me to believe they were,
6 in fact, producing anything.

7 Q. Okay. Your -- your evaluation with respect
8 to that, is there any specific methodology, technique
9 or theory that you apply to come to that conclusion, or
10 is that just your observation?

11 MR. LOMAX: Objection to the form of the
12 question.

13 Q. Is that just your observation or the facts?

14 A. It's real-world observation based on 40 years
15 of industrial experience, plus all the other stuff --

16 Q. Is it your belief that a layperson would not
17 be able to come to that conclusion on their own?

18 A. A layperson that works in a factory that
19 understands factory would come to that conclusion,
20 pretty much the same conclusion.

21 Yeah, they could have a small machine shop in
22 there making widgets that wouldn't need heat with what
23 they got there, that could -- that could happen.

24 Q. Okay.

25 A. But for anything that's a massive steam user,

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1 I see no evidence of that occurring in this photograph.

2 Q. How do you -- how do you cook platinum
3 sponge, sir?

4 A. Well, that's an interesting question. I'm
5 glad you asked that question, you know, because I had
6 that same question myself and --

7 Q. Are you an expert on cooking platinum sponge,
8 sir? I've got limited time, so I'm going to try to
9 find --

10 A. No, wait a minute. No, I'm going to answer
11 your question. You asked me a question --

12 Q. Well, then, I'm going to strike the question
13 because I'm not going to waste my time while you look
14 through documents.

15 A. All right. I'll be brief then without the
16 document.

17 The engineer, the product engineer that I
18 sent an email to at one of the platinum facilities said
19 he had never heard of cooking platinum sponge.

20 Q. What facility, sir?

21 A. That's why I'm looking for the piece of paper
22 so I can give you the company.

23 Q. You know what, I don't even need it, it's
24 hearsay.

25 So, sir, going back to your report, now,

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1 you're not an expert on cooking platinum sponge or --

2 A. If it exists, even if it -- if cooking
3 platinum sponge is, in fact, a legitimate industrial
4 process.

5 Q. Sir, it sounds to me like you'd rather play
6 the role of a jury member as opposed to an expert.

7 A. No, but I like --

8 MR. LOMAX: Objection.

9 Q. You seem to be opining to areas outside of
10 your area of expertise.

11 A. You asked me a question. I --

12 MR. LOMAX: Hold on. Hold on. Wait for a
13 question. I haven't heard a question. Until there's a
14 question, you don't need to say anything.

15 THE WITNESS: Sorry, gentlemen.

16 MR. LOMAX: Is there a question?

17 BY MR. ANNESSER:

18 Q. Sir, coming to page 21 of your report, you
19 state, There are now but two alternatives. And, again,
20 we've already established that the air cooling was
21 predicated upon Mr. Murray's findings in his study.

22 So absent that, that the heat just vanished,
23 and I don't think anyone has claimed that in this
24 case --

25 A. Okay. We agree on something.

1 Q. -- that it never existed.

2 A. That's my contention.

3 Q. Okay. If there was a heat exchanger there in
4 place, sir, and I know you have not seen evidence of
5 it, but if, in fact, there was a heat exchanger as
6 described in Dr. Wong's report, could that not have
7 also been a source by which the heat could have been
8 removed?

9 A. Until I know how the heat got from the
10 serpentine exchanger in the black box to the heat
11 exchanger -- the alleged heat exchanger in the mezz, I
12 cannot -- I cannot give you an objective engineering
13 answer to that question, because the heat has to move
14 from point A to point B to point C. Nobody has told me
15 the intermediate step.

16 Q. Okay.

17 A. So you --

18 Q. So your answer is I don't know?

19 A. No. My answer is you have posited no means
20 for me to get -- for me -- for anybody to get the heat
21 from the serpentine coil to the mezz. If you had --
22 don't have a means, it didn't happen.

23 Q. Okay. If there's a -- let me give you an
24 example. If there's a fan in there that pushes the
25 steam along, would that --

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1 A. A fan to push steam, are you serious?

2 Q. Well, okay, how would you move steam, sir?

3 A. At that pressure, you can't.

4 Q. You can't move steam?

5 A. You're going to have to have a pretty cold
6 surface to create the pressure differential to move
7 zero psi steam at those velocities through that size
8 pipe. It's not going to happen.

9 Q. At what velocities, sir?

10 A. Any of them. Any that are listed in that
11 chart in Exhibit 12, it's not happening.

12 Q. And what methodology, technique or theory do
13 you use to come to that conclusion?

14 MR. LOMAX: Objection to the form of the
15 question.

16 A. The same answer as before to multiple
17 questions.

18 Q. 40 years of experience in the boiler
19 industry?

20 A. Thank you, sir.

21 Q. I can give it myself.

22 A. Holy cow.

23 Q. Hey, I might be an expert.

24 Now, sir, you -- so how long did it take for
25 you to do all of your research and compile your report?

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1 A. It was a period -- it was -- the time was --
2 admittedly, the time was compressed. I want to say
3 probably about five days just going almost flat out.
4 And, again, that's not a hard-and-fast number. I'd
5 have to look at my billing record, you know, my hourly
6 numbers in my book.

7 Q. So in five days, you did your full analysis
8 of all those documents and generated your report?

9 A. Of the -- of the information I had at the
10 time, yes.

11 Q. Did counsel, when they retained you, give you
12 any restrictions as to your assignment?

13 A. Well, they said to see what you can find out,
14 you know, dig into the information and come to your own
15 analysis.

16 And, in fact, they were -- on the -- on the
17 initial conference call, they were pretty adamant,
18 because -- about -- because Mr. Murray had written some
19 stuff, they were pretty adamant about not giving me
20 Mr. Murray's analyses so as to taint any conclusions
21 that I would come to. They wanted me to come to the
22 conclusions I came to not totally independent of
23 Murray, because obviously I'm going to rely on his
24 airflow, but pretty much independently of the other
25 things he had concluded.

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1 Q. Yet on day one, actually, in fact, the day
2 before you were retained, you had a copy of his
3 questionnaires.

4 Well, here's -- here's the issue that I've
5 got, sir, is while you tell me that they wanted you to
6 remain completely independent, on -- as of the 24th of
7 January, I believe the day before you were retained,
8 you had been provided a memory stick with, among other
9 things, Mr. Murray's first queries to Engineer Penon,
10 his spreadsheet summarizing the data from Florida Power
11 & Light prepared by Mr. Murray, Industrial Heat's
12 spreadsheet summarizing the data from Penon's file, the
13 final report prepared by -- or on behalf of Mr. Murray,
14 as well as Mr. Murray's October 31, 2016 power
15 analysis, Mr. Murray's photographs of the Doral
16 location, his videos of heat simulation conducted by
17 Joe Murray, and a video and photo of the flow meter
18 time lapse conducted by Joe Murray.

19 So on one side they're telling you, we want
20 you to be completely independent from Mr. Murray, and I
21 understand that, but then on another side, they've
22 produced all this information to you the day before you
23 were retained that results from Mr. Murray's work as
24 opposed to your own.

25 MR. LOMAX: Is -- is there a question?

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1 Q. Is that -- is that correct, sir?

2 MR. LOMAX: Objection to the form of the
3 question.

4 Q. How -- how can I justify those two positions?

5 A. Understood. I did receive -- and it was
6 actually two sticks, not one. But I -- I didn't get to
7 them until a day or two. I might have stuck them on my
8 hard drive, but I didn't do anything with them.

9 And, yeah, they did give me that information.
10 He was looking at the meter and the -- but they
11 didn't -- what I kind of assumed where he had done
12 similar -- a similar expert report, so maybe it was
13 just a miscommunication.

14 But even so, I have not looked a lot at his
15 Florida Power & Light comparison. I looked at it, but
16 I didn't study it. And his flow simulation, again, I
17 looked at it, so I was relying -- because of the
18 absence of evidence or documentation from plaintiffs, I
19 had to rely on that.

20 So I -- and I don't know if there was other
21 information that he had produced that is subject to
22 their privilege in their attempt to keep me as
23 independent as we can.

24 So, yeah, I did rely on some of his
25 information, but you've probably already figured out,

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1 I'm a pretty hard-headed guy, I make my own
2 conclusions.

3 Oh, and I did find that email, in case you're
4 interested. The fellow's name on the platinum sponge
5 is Gabriel Leis. He's a product engineer with American
6 Elements. So if you would like a copy of this, I will
7 be more than happy to give it to you.

8 Q. Well, we're -- we're going to go through some
9 of the stuff you brought with you today.

10 But before we do, did you do anything to
11 prepare for your deposition today?

12 A. I did.

13 Q. What did you do?

14 A. Obviously, talked to counsel, you know, work
15 product-type discussions. And then I've just done more
16 research, subject to the report, obviously our
17 discussions haven't stopped, my analysis hasn't
18 stopped, so I've been looking at more -- more issues as
19 I -- and, again, as my understanding comes up --
20 because this is a complicated case, I think we can all
21 agree to that. You know, at least from my standpoint,
22 this is not a simple case. So, you know, as my
23 understanding is maturing, I'm looking at more things.
24 And I'm not saying my understanding was immature at the
25 beginning, it's just, you know, I'm -- it's filling

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1 out.

2 Q. Okay. Now, sir, you had mentioned
3 previously, and I -- it just came back to me, that you
4 had seen an expert report from Mr. Murray?

5 A. No, not an expert report. They -- I did not
6 see that and they did not provide me one, and I don't
7 know if there is one.

8 Q. Did you review any report of Mr. Murray's?

9 A. Well, before, his analysis. Now, is that a
10 report or analysis? Semantics. Okay. His airflow
11 simulation, a report, analysis? Again, we can quibble
12 words. But I did not see a report similar to a typical
13 expert report that one normally sees in litigation.

14 Q. Well, sir, I'd like to take a look at the
15 documents you've brought with you today other than the
16 ones that we've already marked --

17 A. Sure.

18 Q. -- to see if there's anything that I'd like
19 to ask you about.

20 A. Certainly. All right. How do you want to do
21 this? There's a lot of stuff here. Now, the stuff on
22 the floor, I think we've dealt with it all. Do you
23 want to go through it and make sure?

24 Q. If I can.

25 A. Yeah. Absolutely. Let's make sure we're

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1 not -- there's enough paper flying around anyway.

2 MR. ANNESSER: Chris, do you mind if we go
3 off the record just to take a look real quick and that
4 way we're not shuffling papers in front of the camera?

5 MR. LOMAX: No problem.

6 THE VIDEOGRAPHER: We're off the record. The
7 time is 1626.

8 (Recess taken.)

9 THE VIDEOGRAPHER: We are on the record. The
10 time is 1652.

11 - - -

12 (Deposition Exhibit 13 marked.)

13 - - -

14 BY MR. ANNESSER:

15 Q. Sir, during the break, we looked at some of
16 the documents that you brought with you today. And I'm
17 going to mark one in particular as Exhibit 13 and ask
18 you to identify that document for me.

19 A. Yes, sir. What this is, it's -- the top page
20 is April of 2015. And then the other pages are various
21 iterations. Or I'm sorry. The next page is -- I think
22 it's from Mr. Fulviani's power readings and then with
23 his annotations in Italian on the far right-hand
24 column.

25 And then the rest of the document is June of

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1 2015. And these are -- I believe I took these off of
2 what were Rossi -- I think it was Rossi -- 0075 or
3 whatever the document was. But basically, I just took
4 his data verbatim and looked at it. And then I did
5 some data sorts on it and some data analysis looking at
6 various parameters.

7 Q. Okay. So to take that data, did you input
8 that data directly into an Excel spreadsheet?

9 A. What I did -- no. What I did to avoid data
10 corruption is something like for Mr. Rossi, I will open
11 it up or even save it as, I'll just open it up, and
12 then I will save it as. In this case, it's like Rossi
13 date and then underscore RES working. That way I can
14 play with it and then, you know, the other one goes
15 back, I don't touch it. And I say "play," but, you
16 know, do my thing on the data. And if I screw up the
17 spreadsheet, it's not -- I'm not messing up the data
18 that I had to work with.

19 So that -- that's the way I normally work,
20 that -- you know, I have a working copy, and then the
21 original I don't touch. I just open it, save it under
22 another name, put it away.

23 Q. Okay. So this data was provided to you in
24 Excel format?

25 A. Yes, sir.

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1 Q. And what you've done is just simply
2 manipulated the data pursuant to searches?

3 A. Correct, doing data sorts and, yeah, various
4 statistical manipulations.

5 Q. Okay. And for what purpose did you do that?

6 A. Well, the reason -- what kind of piqued my
7 curiosity was -- actually was during Mr. Penon's dep
8 last week when Mr. Pace was questioning him, oh,
9 probably about the -- halfway through the time he had
10 allotted, and Pace was asking some questions about some
11 power outages and things in the mid-June time frame.
12 And at the time, I didn't pay a whole lot of mind to
13 it. I was kind of, you know, more interested in
14 listening.

15 And then my subconscious kept processing it
16 and I thought, hey, let's take a look at this stuff,
17 because, you know, Pace was interested in questioning
18 off of it, let's see why.

19 So I started looking at it and just -- I
20 guess what really piqued my interest is -- and I'll
21 just use -- and, oh, the first sheet, this is April of
22 2005. Again, the time -- and date and time columns are
23 self-explanatory. I didn't -- I use those in the block
24 to keep everything, but they're self-explanatory, so --

25 And I've got a note up here just to show what

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1 the column headings are. T out, I'm assuming that's
2 temperature out, pressure out, and then temperature in.
3 My assumption is this is the T out from E-Cat, this is
4 the outgoing pressure, and then this is the return
5 water pressure.

6 Q. May I see that first, please?

7 A. Certainly.

8 Q. Now, with respect to the P out in this
9 document, which you believe was the pressure out?

10 A. I believe that's what it was, yeah.

11 Q. Okay. Those numbers don't say zero, do they?

12 A. No, they don't. And I think -- I think I
13 conceded that it might have been a typo, an innocent
14 typo in Dr. Penon's report. Again, it doesn't change
15 my opinion in the report, but I'm willing to admit,
16 that was probably just a minor oversight on his part.

17 Q. Okay. So looking at this, sir, it appears to
18 you that pressure was measured?

19 A. There are numbers on the sheet, yes, but I'm
20 not going to concede the pressure was measured. I will
21 concede that there's numbers on the sheet.

22 Q. Now, you received that in an Excel format?

23 A. Yes.

24 Q. Did you check whether there's any sort of
25 formula or anything in this sheet?

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1 A. That --

2 Q. Any formula for a calculation of anything or
3 were these just numbers?

4 A. These are just numbers. As far as I could
5 tell on these sheets here, they're just strictly
6 numbers.

7 Q. All right. So the underlying data, and
8 understandably in his report he puts 0.0 and we've
9 marked that report --

10 MR. ANNESSER: This is your copy or is it --

11 MR. LOMAX: This is mine.

12 Q. -- we've marked that report as an exhibit in
13 this case. But in the report, it reflects a pressure
14 of zero. But this appears that there were calcu- --
15 or, I'm sorry, not calculations, but measurements of
16 pressure taken that varied from 0.0?

17 A. That is correct. There are numbers that are
18 different than 0.0.

19 Q. Do you dispute any of the numbers on that
20 sheet, sir?

21 A. Well, subject to the discussions we've had,
22 yes, I do, okay, about as far as temperature goes.

23 Pressure, I'm not going to argue with too
24 much about temperature and probably much -- T out,
25 yeah, I'm going to -- you know, we'll go to the mat on

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1 that one.

2 Q. Okay. That's -- and, again, the T out is
3 predicated upon your belief that there could not have
4 been that amount of temperature because there wasn't a
5 superheater for this tank?

6 A. Well, that's part of it. That's one of
7 several issues that I've identified that I think are
8 the cause for the number.

9 Q. Could you summarize for me, because it's
10 getting late in the day and I've --

11 A. Understood.

12 Q. -- I've perhaps forgotten some of the issues?

13 A. Sure. Heaters near the thermocouples, strip
14 heaters, little electric-type heaters.

15 Q. Do you know if those existed or not? That's
16 a possibility.

17 A. It's a possibility. I'm not saying for an
18 absolute fact they exist, but I also am saying there's
19 a -- there's a potential they may have been there.

20 Q. Okay. And there's a potential they may not
21 have been there?

22 A. True, but I haven't seen it, so I'm still --
23 I'm raising that as an issue to investigate.

24 Q. Okay.

25 A. Some kind of an electrical box between the

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1 thermocouple proper and the computer to bias the
2 signal.

3 Q. Okay. Similarly, you haven't seen this box,
4 it may or may not have been there, you have no
5 information --

6 A. The same answer as before, yes, sir, I'm not
7 sure. And then, again, the data is just being made up,
8 the temp- -- I should say the temperature numbers just
9 being made up.

10 Q. That's a possibility, but you haven't seen
11 anything that indicates --

12 A. There was no way I would know that because I
13 was not there when they were doing the test. So right
14 now there's no -- but I'm still -- I'm saying it is a
15 potential possibility to explain the anomalies I'm
16 seeing.

17 Q. Okay. Okay. May I see that document that
18 we --

19 A. Sure.

20 Q. -- had just marked as Exhibit 13?

21 A. Yeah. You need the whole thing, or just --

22 Q. The whole thing. I want to keep that
23 together.

24 A. Do you want an explanation of anything else
25 on it, or was that it?

1 Q. No, sir.

2 A. Okay.

3 Q. Not at this time.

4 Sir, have you had the opportunity to review
5 Dr. Wong's report in this matter?

6 A. I have.

7 MR. ANNESSER: Okay. Let's go off the record
8 for just a moment.

9 THE VIDEOGRAPHER: We're off the record. The
10 time is 1700.

11 (Recess taken.)

12 THE VIDEOGRAPHER: We are on the record. The
13 time is 1703.

14 - - -

15 (Deposition Exhibit 14 marked.)

16 - - -

17 BY MR. ANNESSER:

18 Q. Sir, one of the documents you brought with
19 you today is a document Thermodynamics for Engineers,
20 Second Edition, by Kaufui Vincent Wong, which I've
21 marked as Exhibit 14.

22 And, sir, you brought that document with you
23 today?

24 A. I did.

25 Q. Okay. Is there anything within this

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1 publication that you disagree with?

2 A. Well, are you talking the whole book, or just
3 what I've --

4 Q. Well, what you've brought with you.

5 A. No. What I've brought with me, no.

6 Q. Anything in the rest of the book that you
7 didn't bring with you that you disagree with?

8 A. No. Actually, and you can tell Dr. Wong I
9 said so, I think it's a pretty good book. It's
10 readable. You know, it looks like he's very rigorous
11 in his analyses, but it's readable. I like that, so
12 you can tell him I said so.

13 Q. Perhaps for an engineer. Some of us --

14 A. Okay. Fine. Be that way.

15 Q. All right. And I believe you said you had
16 reviewed his report --

17 A. Yes, I have.

18 Q. -- in this case?

19 And do you take exception with any of his
20 findings?

21 A. His calculations, I have no argument with his
22 calculations as far as they go. But where I think
23 his -- where his report was deficient is not getting
24 independent confirmation of the facts that were
25 represented to him.

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1 Q. Did you obtain any independent confirmation
2 that those facts that you're referring to were
3 incorrect?

4 A. I've been trying to and I haven't got them
5 yet.

6 Q. Okay. And what have you done?

7 A. Well, again, you know, the issues with the
8 heat exchanger, we've already talked about that, and
9 COP, so I think we have discussed those at some length.

10 Q. So -- so you would agree, sir, that if the
11 factual predicate upon which Mr. Wong prepared his
12 report were correct, and I know that's an if for you,
13 but if they were correct, then you take no exception
14 with -- and so it's Professor Dr. Wong's findings?

15 A. Do you have a copy? Could I take a real
16 quick scan of it just to make -- I don't want to say
17 something that I don't really intend here. And I'll
18 be -- I'll be a real quick scan of it.

19 - - -

20 (Deposition Exhibit 15 marked.)

21 - - -

22 Q. Okay. And I'll show you a copy which we'll
23 mark as Exhibit 15. Watch yourself on the staple.

24 A. All right. Thank you.

25 Okay. I've done a quick scan through just to

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1 refresh my memory. Obviously I disagree with him on
2 all the major points. Okay.

3 As far as his calculations go, you know, if,
4 again, huge if, the information was -- presented to him
5 was correct, then his calculations would be reasonably
6 correct, yeah.

7 Q. So you said you disagree with him on all the
8 major points. But if the information upon which he was
9 provided is correct, then you would agree with his
10 findings?

11 A. I would -- I would agree with his
12 calculations. Again, I disagree with him on COP. And
13 the one thing where he does talk about -- he's on the
14 inverse power relationship, this is on the top of page
15 -- the top of page 3, the inverse power relationship,
16 that's part of what Mr. Murray looked at, so I'm -- I'm
17 going to withhold the comment on that section.

18 But as far as using COP, I totally disagree
19 with that. And then as -- again, as far as --

20 Q. And just -- just remind me, you're --

21 A. Yeah. I'm sorry.

22 Q. -- what you believe should have been done is
23 to measure the energy output over the energy input into
24 the E-Cat device?

25 A. Yes. Correct, using a -- that's more

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1 standard efficiency-type calculation because it's a
2 heat conversion device -- or energy conversion device
3 as opposed to a work-absorbing device.

4 Q. Okay. Now, what about the sustainability of
5 working conditions that -- your opinions on that
6 pertain to Dr. -- I'm sorry, Mr. Murray's conclusions,
7 correct?

8 A. Where are we at? Help me out here.

9 Q. Actually, you know what, that was in two
10 section -- page -- bottom of page 5.

11 A. Let's see here.

12 Q. That's from Mr. Murray's opinion, not yours,
13 correct?

14 A. Yeah, I understand. Again, right now, I
15 guess it's more -- more work is going to have to be
16 done either by Mr. Murray or something. Again, since
17 I've not studied the minutia and the details of
18 Murray's simulation, I can't comment on that. So, you
19 know, maybe that's something he and Dr. Wong can duke
20 it out over.

21 Q. Okay. And then, again, predicated -- you
22 predicated it upon the facts that he relied upon being
23 accurate, if we make that assumption, you don't dispute
24 his finding that the heat exchanger, if -- if
25 constructed the way that it was indicated to him and

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1 referred in this report, that that would have been
2 sufficient to remove the amount of heat necessary or
3 the amount of heat that was produced or allegedly
4 produced by the E-Cat plant?

5 MR. LOMAX: Objection to the form of the
6 question.

7 Q. Let me restate that because I confused
8 myself. All right.

9 Taking the assumption that the information
10 provided to Dr. Wong was correct with respect to the
11 heat exchanger that Dr. Ross claims to have existed, if
12 we assume that that information is correct, you take no
13 exception with Dr. Wong's calculations?

14 A. The calculations, per se. But in your first
15 question, you mentioned the construction of the heat
16 exchanger, and that's a huge issue.

17 Q. Well, let me -- let me come back to that.

18 A. Okay. All right.

19 Q. So the first part, you take no exception with
20 the calculations?

21 A. As far as the calculations, per se,
22 themselves go, stand alone, they're typ- -- they're
23 nonremarkable engineering calculations.

24 Q. So if the -- if there was a heat exchanger
25 that was constructed in accordance with the information

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1 provided by -- provided to Dr. Wong and reflected in
2 this report?

3 A. But it -- help me. It's not -- I don't see
4 that the construction is -- you know, I see some
5 details about pipes and so forth, but nothing about the
6 box or how the pipes were arranged as far as rows and
7 staggered and all that that is important. That's
8 pretty critical right there. So I will -- I will
9 respectfully disagree on that issue. I don't -- I know
10 nothing about the construction of said alleged heat
11 exchanger.

12 Q. Okay. What -- what would change that
13 calculation? You agree that the calculation or the
14 formula used is correct?

15 A. I -- I -- I appears so. Again, it's been --
16 it's been a while since I've done air cold heat
17 exchangers, so I'd have to go back and do a little
18 homework of my own. But this is -- this is a very,
19 very standard formula. All right. Yeah, that's --
20 I've got no argument with that.

21 But as far as the specifics of the heat
22 exchanger, yeah, we're -- we're definitely at odds on
23 that one.

24 Q. As to whether those -- whether the
25 information that's provided here was correct or not or

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1 whether it exists?

2 A. Whether it's correct and whether -- more
3 importantly, whether it existed or not, yes.

4 Q. Okay. But if -- if someone were to find or
5 determine or for all intents and purposes prove that
6 the heat exister -- or heat exchanger, sorry, existed
7 in the same size and specifications as listed in
8 Dr. Wong's report, you would agree that that system
9 would be capable of removing the amount of heat
10 purportedly produced by the E-cat?

11 A. Not really, because, again, I've got to go
12 back to what I said about moving the heat from the
13 serpentine exchanger in the black box to this alleged
14 heat exchanger. We don't know anything about the flow
15 of the fluid inside the pipe, velocity, Reynolds
16 number, anything like that.

17 So, yeah, again, we'll go back and forth. I
18 agree with this equation, but I disagree with your
19 general premise, because even so, we need a lot more
20 information than what I think has been provided to
21 Dr. Wong.

22 Q. So but just sitting here today, and I
23 understand you're saying you need more information, but
24 sitting here today, you're not stating that his
25 findings are incorrect, you're stating that you need

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1 additional information to know whether they would be
2 correct or not?

3 A. I'm saying --

4 MR. LOMAX: Objection to the form of the
5 question.

6 Go ahead, you can answer.

7 THE WITNESS: Okay.

8 A. I'm -- yeah, I'm saying it's like on COP, I'm
9 saying his findings are incorrect, okay, as far as how
10 to calculate the performance of this device. I totally
11 disagree --

12 Q. We're talking about a different --

13 A. Okay. Now, if we're on the heat exchanger --
14 I thought it was a generic question.

15 On the heat exchanger, again, I'm going to
16 keep going back to the specificity issue. Okay. And
17 when you say it can be proven, you know, that's --

18 Q. Let me make this very easy.

19 Under a certain set of facts, Professor Wong
20 -- Professor Dr. Wong's calculations may be correct,
21 you just don't have enough information that allows you
22 to be comfortable that it is? Is that -- is that your
23 testimony?

24 MR. LOMAX: Objection to the form of the
25 question.

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1 A. What he's been given is a certain set of
2 assertions, not necessarily third party verifiable
3 facts.

4 Q. Okay. And if you were to assume those were
5 correct, those assertions were correct --

6 A. But I won't assume those. I'm sorry, I won't
7 assume those.

8 Q. But you don't -- you don't know one way or
9 another whether they're correct or not?

10 A. That is true. That is true.

11 Q. Okay. Now, have you done any research on
12 Professor Wong?

13 A. A little bit.

14 Q. Okay. Have you reviewed his report and his
15 background?

16 A. I -- yeah. I went through them, yes.

17 Q. Do you believe he is qualified to opine as to
18 these matters based on your review?

19 MR. LOMAX: Objection to the form of the
20 question.

21 A. Again, you know, it's really the court's
22 determination is he qualified or not. But, you know,
23 looking at his CV and so forth, he's got a very, very
24 nice, wonderful academic CD -- CV, I'm sorry. You
25 know, looking at his picture in his book, he looks like

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1 a great guy.

2 But as -- you know, I don't see a whole lot
3 of real world engineering experience here, so, you
4 know, that -- that does cause me a little bit of
5 concern.

6 You know, as far as doing calculations and
7 stuff of an academic nature, no argument. But as far
8 as real world industrial engineering experience, I
9 don't really see any that's he's pointed out here.

10 Q. Are there any other flaws that you see in his
11 report that you think are -- that you think are
12 incorrect?

13 A. Not at this time. You know, again, you'll be
14 the second person to know if I do.

15 Q. Probably the third, I think.

16 A. Yeah. Well, that's okay.

17 Q. There's a couple people at Jones Day.

18 A. That's what I meant, yeah. Thank you.

19 - - -

20 (Deposition Exhibit 16 marked.)

21 - - -

22 Q. Sir, just as a wrapping up matter, there's a
23 number of documents that you brought with you today.
24 This is the stack that you brought to me. We're going
25 to mark that as composite Exhibit Number 16. I'll find

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1 a way to keep those together here in a minute.

2 You've also brought with you two CDs, which
3 you've informed me are identical; is that correct?

4 A. Yes, sir, they are.

5 - - -

6 (Deposition Exhibit 17 marked.)

7 - - -

8 Q. And pursuant to an agreement with counsel,
9 what we will do is we will mark one with an exhibit
10 sticker Number 17. Both Mr. Lomax and I will add our
11 initials to it. I think initials, because if we sign,
12 we might take up all the room, for authentication.

13 MR. ANNESSER: Do you wish to do the same
14 with yours?

15 MR. LOMAX: Yes.

16 MR. ANNESSER: Okay. So we will initial both
17 here. And that way we don't need the court reporter to
18 keep a copy.

19 THE WITNESS: Chris, did you initial that
20 one? Mr. Annesser, Chris needs to initial that one.

21 MR. ANNESSER: Oh, yes, sorry.

22 THE WITNESS: And the marker.

23 MR. ANNESSER: And unless corrected by
24 counsel, by agreement of counsel in this case, both
25 will be named originals for this deposition.

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1 MR. LOMAX: I'm going to just ask the
2 witness, do you agree that you made copies that are
3 identical? Is the information on those CDs identical?

4 THE WITNESS: Yes. What I -- again, subject
5 to any computer errors, what I did is I used my burner
6 program to make two copies. So rather than, you know,
7 moving the information twice, I moved it once, said
8 make two copies, and then used two discs for the same
9 data.

10 And then I -- after I closed the program, I
11 just did a quick spot-check on both of them.

12 MR. ANNESSER: Okay.

13 THE WITNESS: So I did a little bit of QC.
14 And I didn't check every file, but I will represent
15 that they are identical to the best of my knowledge.

16 MR. ANNESSER: Okay. What we will do is the
17 court reporter, when we're all done, will photocopy the
18 front of these discs and maintain that as part of the
19 record, and we will keep -- counsel and I will keep
20 copies of these CDs.

21 - - -

22 (Deposition Exhibit 18 marked.)

23 - - -

24 Okay. And next there were the two memory
25 sticks that you referenced earlier that we will mark as

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1 Exhibit 18. And we'll ask the court reporter to take
2 custody of those and return the original to you after
3 copying each of them as quickly as she can.

4 THE WITNESS: No hurry.

5 MR. ANNESSER: Okay. Okay. If we can go off
6 the record for just a moment, I think I may be able to
7 wrap up shortly.

8 THE VIDEOGRAPHER: We're off the record. The
9 time is 1719.

10 (Recess taken.)

11 THE VIDEOGRAPHER: We're on the record. The
12 time is 1725.

13 BY MR. ANNESSER:

14 Q. Sir, in addition to those opinions that
15 you've set forth on page 21 of your report, you said
16 that there was one additional opinion that you had come
17 to that you plan to testify on.

18 A. That's correct.

19 Q. And what was that additional --

20 A. Could I take a look at that very quickly on
21 the exhibits as a memory jogger?

22 Q. I'd like if you can find the original
23 exhibits so that --

24 A. What number --

25 Q. -- we can have you refer --

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1 A. -- 7?

2 MR. LOMAX: It's going to be up here.

3 THE WITNESS: Sorry. Where are we at?

4 BY MR. ANNESSER:

5 Q. Let me hand you mine for a moment. Let me
6 represent that that is a copy of Exhibit 7.

7 A. Yeah, it is. And the additional -- to answer
8 your question, the additional opinion that I'm going to
9 amend to the report is that if there were steam flow,
10 if, again, big if on my part, that there's no way the
11 steam could have transited the pipe due to the
12 pressures and the velocities involved with the -- with
13 the power output and the -- thermal -- excuse me, the
14 thermal outputs that were being claimed.

15 Q. There's no way that it can transit the pipe?

16 A. They could, but the pressure drop would be
17 extremely high. And I didn't -- the velocities would
18 have to be just about double that are shown on that one
19 exhibit, the spreadsheet that I made, to try to stuff
20 that many BTUs through pipes of those size.

21 Q. Okay. And when did you come to that
22 conclusion, sir?

23 A. That was just over the weekend after -- as a
24 result of the discussions, you know, during Dr. Pen- --
25 yeah, Penon's dep, and then, you know, just thinking

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1 about it, my subconscious said, hey, let's look at
2 this, too.

3 Q. Okay. Over this past weekend, like
4 yesterday?

5 A. Yeah, like -- like -- like Saturday, yeah,
6 like this past weekend.

7 Q. And you haven't supplemented your report
8 or --

9 A. Not yet, no, sir.

10 Q. Okay. Did you rely upon any publications in
11 arriving at that conclusion?

12 A. That's a -- that -- that would be a typical
13 fluid flow, like I gave you the formula. That's just a
14 standard fluid mechanics flow form that you can find in
15 any good fluid mechanics book.

16 Q. Fluid mechanics or steam?

17 A. No, fluid mechanics.

18 Q. Are we talking about fluid flow, or are we
19 talking about steam flow?

20 A. It works for both of them. Steam is a fluid.

21 Q. Did you reference any literature in arriving
22 at that opinion?

23 A. When you say "literature," like books or --

24 Q. Did you grab a book and flip through it and
25 say --

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1 A. Oh, that -- well, that spreadsheet is based
2 on -- the spreadsheet that I developed is based upon
3 the continuity equation.

4 Q. What is the continuity equation?

5 A. I mentioned it's mass -- mass flow equals
6 density of the fluid times the velocity of the fluid
7 times the flow area of the pipe.

8 And then I also used the steam tables for the
9 properties of the steam for that look-up -- for the
10 look-up table for the various pressures.

11 Because of steam -- steam -- steam being a
12 gas, as it is compressed to high and higher pressures,
13 the density or the specific volume, as we call it,
14 changes. It squeezes down. Being a gas at zero psi,
15 it may occupy -- and, again, I'm going to kind of do
16 this for the camera -- a rather large volume. As the
17 pressure goes up, the volume -- a pound of steam will
18 occupy a smaller and smaller volume.

19 Also, as if -- if indeed the steam were
20 superheated, as the steam heats up, it also expands, so
21 that's going to exacerbate the issue.

22 Q. Is there a reason that you did not include
23 that in your report?

24 A. I didn't think of it at the time.

25 Q. Is there any specific methodology that you

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1 applied in performing those calculations?

2 A. I think I just told you.

3 Q. Well, you said that you -- that it was a
4 basic calculation predicated upon the continuity
5 equation?

6 A. Yes. That's -- that's a formula and a
7 procedure.

8 Q. Is that a widely accepted equation?

9 A. Absolutely.

10 Q. Is it possible that someone could come to a
11 contrary position with respect to whether it is
12 possible to move that much steam through the piping?

13 A. Only if they -- excuse me. Only if they have
14 the same steam expertise and experience that I do.
15 People that have that expertise are going to agree with
16 me.

17 Q. Other than that additional opinion, are there
18 any other opinions that you plan on testifying to in
19 this case?

20 A. I can't delineate anything specifically right
21 now. But, again, there's more discovery coming in,
22 more deps. We have a site visit that we just talked
23 about off the record. So there may be other issues.
24 Again, I can't tell you what they are right now. There
25 may be, there may not be. I don't know.

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1 Q. Is there any information that if you were to
2 see, that would cause you to retract any of your
3 opinions in this case?

4 MR. LOMAX: Objection to the form of the
5 question.

6 A. It's going to be a really hard sell. I'm not
7 saying it won't happen, but it's going to be a hard
8 sell.

9 Q. I -- I understand you're convinced, but my --
10 my question is, is there any information that if it
11 were provided to you, would cause you to change your
12 opinions?

13 MR. LOMAX: Objection to the form of the
14 question.

15 Q. Or opinion and/or opinions in this matter?

16 A. Some of the concrete and -- issues I raised
17 about the existence of the heat exchanger is one that
18 comes immediately to mind.

19 Q. Anything else?

20 A. Not that I can think of right now. There may
21 be others, but I'm just -- I'm drawing a blank right
22 now.

23 Q. Is there anything that we've not discussed
24 today that you think is pertinent to this case?

25 MR. LOMAX: Objection to the form of the

1 question.

2 A. It may be pertinent and it may not be, but I
3 am concerned about some of the safety issues relative
4 to the E-Cat. If it is a nuclear reaction, excuse me,
5 I'm concerned about the health physics issues, if it
6 is, in fact, a nuclear reaction.

7 And then just as general boiler issues,
8 again, in looking at the pictures of it and so forth,
9 I'm fearless and it scares the crap out of me.

10 Q. The E-Cat does?

11 A. It does.

12 Q. How come?

13 A. It doesn't look like a properly constructed
14 pressure vessel. Even though there's no alleged
15 pressure in it, there are safety devices that all
16 boilers should have that if they're there, fine, but I
17 didn't see any evidence of them.

18 Q. Such as?

19 A. Over-pressure, over-temperature, thermal
20 cutouts, things like that. You know, the normal safety
21 devices one sees in a boiler, even a small, low
22 pressure boiler.

23 And all -- and the other -- and the other
24 thing is that in a document in there, in my stuff that
25 I gave you that was not provided by counsel is -- from

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1 what I can tell, the State of Florida has no record of
2 that boiler existing at that location, at least not
3 that I've been able to determine.

4 Q. What have you done to determine that?

5 A. I checked on the state's record, their
6 website, for boiler licenses, boiler permits, operating
7 inspections.

8 Q. But you're aware that the State of Florida
9 went out there and did an inspection --

10 A. Different department. No, this -- this was
11 the radiologic department. The Florida -- the Florida
12 boiler department, I believe, is part of Financial
13 Services. And I think they would be very, very
14 interested in a device that makes hot water or
15 allegedly superheated steam. I think they would be
16 very interested in knowing about that.

17 Q. Okay. And who have you contacted there?

18 A. I have not.

19 Q. So how did you come to the conclusion that
20 there is no record of there being a boiler device at
21 that location?

22 A. A website search of the State of Florida's
23 boiler division license records.

24 Q. And what does that tell you?

25 A. That they -- that somebody did not either --

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1 well, for whatever reason, did not contact the state
2 and apply for a boiler license and inspection as is
3 required by Florida law, at least as I understand
4 Florida law.

5 Q. You would agree this is a nontraditional
6 boiler, would --

7 A. It makes no difference. The heat source is
8 irrelevant to the fact that it's a boiler. Yeah, I
9 agree, it is nontraditional, no argument there. But
10 from -- from the jurisdictional standpoint, they don't
11 make that distinction that -- that we might.

12 Q. Okay. What -- at what point or what
13 determines when you need a boiler license?

14 A. The law, the Florida law.

15 Q. Okay. But I have a water heater in my house;
16 is that a boiler?

17 A. They're -- no. And they make specific --
18 technically, it is a boiler. All right. Technically,
19 all of our water heaters are a boiler. Okay. Because
20 of the logistics involved and so forth, most all
21 jurisdictions have a floor below which they're --
22 they -- you know, they say, you've got to have this and
23 that on them, but they don't require inspections.

24 Q. And what's that floor?

25 A. I don't know. But typically -- I'm going to

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1 guess, okay, subject to verification with the law,
2 typically it's about 85 gallons where you -- when you
3 switch over from a typical -- like a 40 -- big 40, 80
4 -- or maybe even a little higher because I have an 80
5 gallon, maybe it's 120, but at some point you go from
6 being a residential to more of a commercial, like for a
7 small school, apartment building, things like that.
8 You know, where it becomes a public occupancy is
9 typically where that break point is made.

10 Q. Do you know what regulations apply to the
11 E-Cat device?

12 A. As far as I know, the Florida boiler law
13 applies because it is considered, again, depending on
14 how we want to deal with it, a low pressure steam
15 boiler or a hot water boiler.

16 Q. And what do you base your opinion that the
17 Florida boiler law applies on --

18 A. Because this device is making hot water, and
19 its size. And if it's a lot bigger -- as you
20 mentioned, it's a lot bigger than an 80 horsepower
21 commercial boiler, which absolutely requires a license.

22 Q. Now, commercial boilers operate under
23 pressure, do they not?

24 A. They -- there is a -- they do operate under
25 pressure. But the code, as I read the code -- and, you

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1 know, you're a lawyer, you may read it and come to an
2 entirely different conclusion; but as I read the code,
3 the pressure is immaterial as far as it being a boiler.

4 There is a -- the ASME has a break point at
5 15 PSIG. Below 15, it's a low-pressure boiler. Above
6 15, they call it a high-pressure boiler.

7 So zero is still -- and, again, when you were
8 -- when we were wrangling about the pressures, you were
9 showing pressure over zero on the lower atmospheric,
10 that is pressure.

11 Q. For -- the standard boiler is the one
12 depicted in your report, what is the average pressure
13 that they operate under?

14 A. Tough question to answer. If it's -- if it's
15 a typical, again, light commercial boiler, it's going
16 to be a low-pressure boiler under 15, they typically
17 run them around 12.

18 If it's for an industrial -- when I say "12,"
19 PSIG. If it would be for a commercial application like
20 a laundry or a dry-cleaner, maybe 75, 80 pounds,
21 something like that.

22 Q. Okay. So 12 PSIG is how many bars?

23 A. A little less than 1, because a bar is 14.7,
24 so it's whatever --

25 Q. So it's operated under the vacuum?

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1 A. Pardon? No. No. No. No. No. That's 14
2 -- I'm talking 15 PSIG.

3 MR. LOMAX: Objection. At this point, I just
4 learned that you completed the deposition in terms of
5 time.

6 MR. ANNESSER: Okay. Can I finish up this
7 couple short questions?

8 MR. LOMAX: Yeah. It's over by three minutes
9 already.

10 MR. ANNESSER: Nobody alerted me. I
11 apologize.

12 BY MR. ANNESSER:

13 Q. Sir, do you mind --

14 A. No, not at all.

15 Q. -- just finishing the last couple questions?

16 A. No problem.

17 Q. 12 PSIG you said is a little under 1?

18 A. 1 bar gauge. 1 bar gauge. Okay. So -- let
19 me -- I stand corrected. It would be a little under 2
20 bar gauge. And, again, that's because I use PSIG and I
21 get a little -- I've got to think real carefully doing
22 the transition from gauge to bar.

23 But that pressure would be above atmospheric
24 at some point.

25 MR. ANNESSER: Okay. And I am out of

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1 questions, sir. Thank you very much for your time
2 today. You have the right to read or waive.

3 MR. LOMAX: We'll read.

4 THE WITNESS: We'll read.

5 MR. ANNESSER: Okay. Thank you very much.

6 MR. LOMAX: No questions.

7 But I -- before we go off the record, sir, if
8 we could please designate this testimony as highly
9 confidential at this point.

10 MR. ANNESSER: On what basis?

11 MR. LOMAX: We're just talking about, I
12 think, just to be cautious before we can actually read
13 the transcript. I think he might have gotten into some
14 highly confidential information.

15 Do you have an objection?

16 MR. ANNESSER: Well, I object to it, but we
17 can figure it out later. You can make the designation,
18 but we'll -- we will object to it at this point in time
19 and go from there.

20 THE VIDEOGRAPHER: We're off the record. The
21 time is 1740.

22 - - -

23 Thereupon, the testimony of February
24 27, 2017, was concluded at 5:40 p.m.

25 - - -

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CERTIFICATE

STATE OF OHIO:

SS:

COUNTY OF DELAWARE:

I, Tracy J. Schell, a Notary Public in and for the State of Ohio, duly commissioned and qualified, do hereby certify that the within-named RICK A. SMITH, P.E., was first duly sworn to testify to the truth, the whole truth, and nothing but the truth in the cause aforesaid; that the testimony then given was reduced to stenotypy in the presence of said witness, afterwards transcribed; that the foregoing is a true and correct transcript of the testimony; that this deposition was taken at the time and place in the foregoing caption specified.

I do further certify that I am not a relative, employee or attorney of any of the parties hereto; that I am not a relative or employee of any attorney or counsel employed by the parties hereto; that I am not financially interested in the action; and further, I am not, nor is the court reporting firm with which I am affiliated, under contract as defined in Civil Rule 28(D).

In witness whereof, I have hereunto set my hand and affixed my seal of office at Lewis Center, Ohio, on this 9th day of March, 2017.



Tracy J. Schell

Notary Public, State of Ohio.

My commission expires: November 5, 2018

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ERRATA SHEET

RE : Rossi, Andrea v. Darden, Thomas

DEPO OF: Rick A. Smith, P.E.

TAKEN : 2/27/2017

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FLORIDA RULES OF CIVIL PROCEDURE

Rule 1.310

(e) Witness Review. If the testimony is transcribed, the transcript shall be furnished to the witness for examination and shall be read to or by the witness unless the examination and reading are waived by the witness and by the parties. Any changes in form or substance that the witness wants to make shall be listed in writing by the officer with a statement of the reasons given by the witness for making the changes. The changes shall be attached to the transcript. It shall then be signed by the witness unless the parties waived the signing or the witness is ill, cannot be found, or refuses to sign. If the transcript is not signed by the witness within a reasonable time after it is furnished to the witness, the officer shall sign the transcript and state on the transcript the waiver, illness, absence of the witness, or refusal to sign with any reasons given therefor. The deposition may then be used as fully as though signed unless the court holds that the reasons given for the refusal to sign require rejection of

the deposition wholly or partly, on motion under rule 1.330(d)(4).

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