

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

UNITED STATES OF AMERICA,	-	Docket No. 3:06-CR-712
	-	
Plaintiff,	-	Toledo, Ohio
	-	October 19, 2007
v.	-	Trial
	-	
DAVID GEISEN, et al.,	-	
	-	
Defendant.	-	

VOLUME 11 OF 15
TRANSCRIPT OF TRIAL
BEFORE THE HONORABLE DAVID A. KATZ
UNITED STATES DISTRICT JUDGE.

APPEARANCES:

For the Plaintiffs:	Richard A. Poole U.S. Department of Justice 3rd Floor 1400 New York Avenue, NW Washington, DC 20005 202-514-0838
	Thomas T. Ballantine U.S. Department of Justice P.O. Box 23984 Washington, DC 20026 202-514-2956
For the Defendant Geisen:	Miller & Chevalier By: Andrew T. Wise Richard A. Hibey Suite 900 655 Fifteenth Street, NW Washington, DC 20005 202-626-5801

1 For the Defendant Gordon & Ermer
Cook: By: Denis F. Gordon
2 John F. Conroy
Suite 640
3 1828 L Street, NW
Washington, DC 20036
4 202-833-3400

5 Court Reporter: Tracy L. Spore, RMR, CRR
1716 Spielbusch Avenue
6 Toledo, Ohio 43624
(419) 243-3607
7

8

9 Proceedings recorded by mechanical stenography, transcript
10 produced by notereading.

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 (Commenced at 9:04 a.m.)

09:04:28

2 - - -

09:04:28

3 DAVID GEISEN, CONTINUED DIRECT EXAMINATION

09:04:28

4 BY MR. WISE:

5 Q. Good morning, Mr. Geisen. When we stopped yesterday, we
6 were talking about the late September or early October
7 timeframe. Can you tell the jury again the day that you first
8 had an interaction with the NRC regarding bulletin 2001-01?

9 A. October 3, 2001.

10 Q. You had also described a role in the greensheet review
11 2731, correct?

12 A. That's correct.

08:34:58

13 Q. How many times did you sign that greensheet?

14 A. Twice.

15 Q. And in what capacities?

16 A. As a Design Basis engineering manager, and then for my
17 boss, Steve Moffitt.

18 Q. When you signed it as the Design Basis Manager, what
19 would you have been looking for?

08:35:21

20 A. I would have gone through the document looking for those
21 pertinent sections that deal with the design of the plant and

08:35:25

22 make sure that they sounded right to me as well as verify that

08:35:29

23 the appropriate people from my staff were involved with the

08:35:34

24 reviews and also signed off on it.

25 Q. Can you speak up just a little bit?

08:35:40 1 In your review as the Design Basis Manager, would
2 you have paid any special attention to information about past
08:35:48 3 inspections?

4 A. No.

08:35:50 5 Q. When you signed off on it for Mr. Moffitt, what would
08:35:54 6 that review have entailed?

08:35:56 7 A. I would have looked to verify that the people that were
08:36:02 8 reporting to him would have signed off on it, which would have
9 been obviously myself and probably Dave Eschelman, who was the
10 Plant Engineering Manager, that he had already completed his
11 review at that time.

08:36:15 12 Q. Now let's go forward to October 3. What happened on
13 October 3?

08:36:21 14 A. We had a teleconference -- "we" being there's a group of
15 people at the plant had a teleconference with a group of people
16 at NRC headquarters in Washington.

17 Q. And do you recall preparing for that phone call?

08:36:38 18 A. Yes. I mean, I think the phone call was, like, on a
08:36:42 19 Wednesday, and we had prepped on that Monday, Tuesday. And I
08:36:48 20 don't recall a lot of details about the prep, but I have had a
21 chance to review Mr. Miller's notes. I didn't personally have
08:36:56 22 any notes of the meeting myself. So I know we have a prep
08:37:00 23 meeting and a teleconference with Framatome on the 2nd.

08:37:07 24 Q. As you think back to the October 3rd call, can you tell
25 the jury approximately how many people were involved from the

1 Davis-Besse side?

08:37:16 2 A. It's hard to say. We were in a -- I think it was Steve
08:37:24 3 Moffitt's office. It was either Steve Moffitt's or Dave
08:37:30 4 Lockwood's office. I don't remember for sure, but both offices
5 are set up pretty much the same. We have a conference table.
6 So we probably had, I don't know, six to eight people in there,
7 maybe.

08:37:41 8 Q. I'm going to put up on the screen what has been
08:37:51 9 previously admitted as Government's Exhibit 78.

08:38:07 10 MR. WISE: Can we switch that so the jury can see
11 it as well?

12 BY MR. WISE:

08:38:19 13 Q. Mr. Geisen, do you recognize what Government's Exhibit
08:38:22 14 78 is?

15 A. Yes, I do.

16 Q. What do you recognize that to be?

17 A. These are Dale Miller's notes of the October 3rd
08:38:31 18 teleconference with the NRC.

08:38:33 19 Q. Do you have a specific -- do you have a recollection
20 aside from Mr. Miller's notes of what it is that you discussed
08:38:44 21 during this call?

22 A. No, I don't.

08:38:46 23 Q. Do you have any reason to believe that Mr. Miller's
08:38:49 24 notes are inaccurate?

08:38:50 25 A. No.

08:38:51 1 Q. And so if you would, focus with me on this section.

08:38:58 2 A. Okay.

3 Q. Which has the initials D.C.G. Do we assume that those
4 are your initials?

5 A. I would assume that that was me, yes.

6 Q. Assuming that you spoke the information that's contained
7 in Mr. Miller's notes, is it fair to say that you were speaking
8 on the topic of past inspections of the head?

9 A. That's correct.

10 Q. How would you have gone about gathering information
11 about the past inspections that had been done of the head?

08:39:28 12 A. Well, preparation for the meeting, I had reviewed our
13 response to 2731. And I know that we had conversations about
14 it with Framatome the day before on the 2nd. I can't say each
08:39:46 15 piece/part, where it came from. I also had conversations with
08:39:50 16 people like Bob McIntyre's supervisor in Systems over the
08:39:55 17 mechanical group. Their group is always responsible for -- I
18 shouldn't say always; most of the time they were responsible for
19 the inspections of the head.

08:40:03 20 Q. Why would you have gone to Mr. McIntyre to gain that
21 information?

08:40:08 22 A. He was the supervisor of the group.

23 Q. Would you have gone to the actual engineers that did the
08:40:13 24 inspections?

08:40:14 25 A. Not normally. Out of practice I wouldn't have done that

1 because I try to go with the supervisors so that they know that
08:40:24 2 -- I mean, it just wasn't my practice to bypass the supervisors.

08:40:29 3 Q. Do you have any recollection of whether you spoke with
08:40:32 4 Andrew Siemaszko before the October 3rd phone call about past
08:40:36 5 inspections?

6 A. I don't recall. I might have.

08:40:38 7 Q. Did you, yourself, review videos of the past inspections
8 before the October 3rd phone call?

9 A. No.

08:40:56 10 Q. Based upon what you see in Mr. Miller's notes, can you
08:41:02 11 tell the jury what you likely said about the last inspection?

08:41:10 12 A. Yeah. It looks like I said that we did an inspection
13 of the whole head and that there were some areas that were
08:41:19 14 precluded from being inspected because of nozzle or CRDM --
15 flange leakage that had pooled around, boron had pooled around
16 the nozzles. And we had signs of -- it says there were
08:41:36 17 definite signs of boron flow from leakage. That would be
08:41:41 18 referring to the streams that would have been evident on the
08:41:44 19 flanges, coming down the tubes.

08:41:46 20 I also went on. I talked about the tapes that
21 were reviewed, also talked about the cleaning a little further
22 down.

23 And then further down towards the bottom I talked
24 about the 80 percent confidence. I'm not sure where that came
25 from other than the fact that looking at Mr. Miller's notes from

08:42:15 1 the previous day, I believe that that was probably from
08:42:15 2 conversations with Framatome.

08:42:16 3 Q. All the information you presented during this call,
08:42:22 4 assuming that you presented what Mr. Miller's notes show, did
5 you have any question about the accuracy of that information?

08:42:29 6 A. No.

7 Q. Or the reliability of your sources?

08:42:32 8 A. No.

08:42:43 9 Q. After the October 3rd phone call concluded, what
10 happened next within the Davis-Besse team?

08:42:50 11 A. I'm sure we discussed -- I'm sure we sat around and
08:42:56 12 discussed the results of the phone call, and I know we came up
13 with an action plan. There were -- Steve Moffitt had given me
14 basically two tasks to manage or coordinate, one being the
08:43:08 15 development of a crack growth rate model, and the other one was
16 the nozzle-by-nozzle table that Mr. Hiser had requested.

08:43:25 17 Q. Let's talk about the nozzle-by-nozzle table. What was
08:43:31 18 the nozzle-by-nozzle table to present information about?

08:43:35 19 A. Well, the intent was instead of -- I guess what we had
08:43:40 20 previously done was a videotape review. I say we; it would have
21 been the guys -- Andrew, who provided the information to the
08:43:49 22 bulletin, had -- all he had done is review videotapes at that
23 point. And what we were looking for was a specific, let's
08:44:00 24 create a table with each nozzle location and a definitive result
25 for each nozzle at each location for each outage.

08:44:11 1 Q. By each outage, what do you mean?

2 A. Initially we were doing two outages because the bulletin

3 called for it to go back --

4 Q. Which two?

5 A. I'm sorry, the 2000 and 1998 bulletin had you go back

6 for four years.

08:44:27 7 Q. At that point, we're talking October 3rd. Had you had

8 any prior experience doing head inspections?

08:44:35 9 A. No.

10 Q. Why was Mr. Siemaszko chosen to construct the

11 nozzle-by-nozzle table?

12 A. He's the one that had done the previous inspection and

08:44:45 13 owned the system. I mean, the reactor head was part of the

14 reactor coolant system. He was the system engineer for that.

15 So he was the logical choice as to who to put that together.

08:44:58 16 Additionally, he had participated in the Arkansas '01 inspection

08:45:06 17 in the spring. What we felt we were doing was taking these

08:45:11 18 tapes and putting a calibrated eyeball on it.

08:45:19 19 If I'm going too fast, let me know. I was killing

20 Angela yesterday.

21 We would put a calibrated eyeball on these tapes,

22 the original intent of the tapes was not to view -- was not to

23 look specifically for nozzle leakage as much as the general

08:45:36 24 condition of the head. So we were basically looking at the

25 tapes with a different set of criteria, different set of

08:45:42 1 eyeballs; that's what we were putting Andrew on for.

2 Q. What direction did you give Andrew as he started to

3 compile the table?

08:45:52 4 A. I don't know that I provided him any direction other

5 than we needed a nozzle-by-nozzle, and I can't even say whether

08:45:59 6 I provided that to him directly or went through Glenn McIntyre.

08:46:05 7 Actually, it would have been John Cummings by that time. But I

8 don't know. You know, I mean, as far as -- I don't know how

9 that communication was done. I was trying to remember it, but

08:46:18 10 in essence we had asked him to do -- whether it came from me

11 directly or from plant engineering through their man chain, the

08:46:28 12 message was we needed the nozzle-by-nozzle inspection.

08:46:32 13 Q. Did there come a time that you had a discussion with

14 Andrew about how he was doing this work?

15 A. Yes. It would have been -- I don't know, maybe a week

08:46:44 16 or two later. He was in the process of doing the

08:46:50 17 nozzle-by-nozzle.

08:46:52 18 Q. Okay. Let's break this down a little bit. Where did

08:46:56 19 you have the meeting with him?

20 A. I just stopped by his cubicle.

08:47:01 21 Q. How long did you meet with him?

22 A. Probably about an hour.

23 Q. And can you describe what it is that he told you about

24 how he was doing his work?

08:47:11 25 A. Yeah. I just stopped by and asked him how it was

1 going, just checking up. I had been in the building anyways
2 for the morning manager's meeting, so it's just one floor up, so
3 I stopped by and asked him how he was making his calls. And
4 he -- I'm sorry.

5 Q. Where was he sitting at the time?

6 A. At his desk.

7 Q. Did he have his computer in front of him?

8 A. Sure. He was using his computer.

9 Q. Did he show you portions of the past inspection tapes?

08:47:44 10 A. Not the tapes but, I mean, the video clips.

08:47:49 11 Q. When you say not the tapes but the video clips, explain
12 to the jury what you mean.

13 A. Well, he had already -- I think Mr. McLaughlin testified
14 that he helped facilitate it, but they already converted the VHS
15 tapes over to digital format on CDs.

16 Q. And why was that done?

08:48:10 17 A. Andrew had said that when he tried to do the pause and,
18 you know, fast-forward pause -- with the VHS when you pause, you
19 don't get a nice, crisp, clear picture, and the ability to
08:48:25 20 stop-it-on-a-dime type thing. It was very difficult. So the
08:48:30 21 plan was by putting it into a digital format, you could just
08:48:35 22 put, like, the space forward on the keyboard, and it would go
23 actually one digital frame at a time, and you could step through
24 it. So that's what he was doing when I walked up.

25 Q. And during the meeting that you had with him, did he

1 show you frames from the videos?

2 A. Yes. Right about where he was at the time he just
3 started explaining how he did it.

4 Q. Do you recall which year he was looking at as you were
08:49:02 5 having this conversation with him?

6 A. No.

08:49:04 7 Q. What did he explain to you about how he was making
08:49:08 8 judgments on a particular nozzle that he showed you on his
08:49:12 9 screen?

10 A. Well, he was explaining how he was looking for the
08:49:16 11 downhill side because that's apparently where the gaps open up
12 the most and that he was looking specifically for this
13 popcorn-type of boron deposit on that downhill intersection. He
08:49:33 14 indicated that he was also at the same time looking for leakage
15 from or signs of leakage from above, such as the streaking down
16 the tubes. He said that.

08:49:44 17 Q. Why did you understand that he was looking for streaking
08:49:49 18 from above?

19 A. He was trying to see if there were signs of boric acid,
20 boron deposited from the possible flange leakage from above.

21 Q. In the frames that he showed you were there frames that
22 showed boric acid around nozzles?

23 A. Yeah, I think there was in the background and stuff.

08:50:09 24 Q. Were there any nozzles that he showed you where there
25 was boron on the upside side of the nozzles?

1 A. Yes.

2 Q. What did he explain to you about why that nozzle could
3 be -- if it was, why that nozzle could be considered acceptable?

08:50:22 4 A. Well, he was saying that, okay, the downhill side radius
5 or where that intersection was was relatively clean. So he was
08:50:34 6 looking at that area. And he would look on the uphill side,
7 and it would indicate what looked like you've got this boron
8 that tumbled down and just came to rest on the uphill side of
9 the tube, almost like a snowdrift versus, like, a crystal-like
08:50:54 10 deposit type of thing. And he was doing that. In some cases
11 he said he had to go in different mouse holes at multiple angles
12 to get a good correlation on a particular drive, to have a good
08:51:08 13 view from one side. So he'd have to, like, combine the two for
14 two different sides.

15 Q. Based upon your conversation with him, did you have a
08:51:17 16 degree of comfort with how he was doing his job?

17 A. Yeah, I thought he was doing a pretty thorough job.

18 Q. Did he appear to be using a methodology that made sense
19 to you?

08:51:30 20 A. Yes.

08:51:31 21 Q. As you sat with him that day at his cubicle, was there
22 any discussion of the e-mails that you and I walked through
23 yesterday about Ocone having a clean head or a pristine head?

24 A. No, we were focused just on the video inspection he was
25 doing.

08:51:51 1 Q. After that conversation with Mr. Siemaszko, did there
2 come a time that you had a conversation with Steve Moffitt about
3 Andrew's work?

08:52:04 4 A. I think -- I can't tell you exactly when, but I know
5 that Steve and I had talked about how the inspection was being
6 done, and I pretty much reiterated exactly what I discussed with
7 Andrew and how it was done.

8 Q. Do you recall if your conversation with Mr. Moffitt
08:52:22 9 occurred before or after the October 11th meeting with the
08:52:26 10 technical assistants?

11 A. I can't say for sure.

08:52:29 12 Q. Let's turn to that October 11th meeting for a second,
13 and then we'll come back to this topic. Do you recall a
08:52:36 14 meeting on the 11th with technical assistants?

15 A. Yes, I do.

08:52:41 16 Q. Were you present at that meeting?

17 A. Yes, I was.

18 Q. Did you present slides at that meeting?

08:52:45 19 A. Yes, I did.

08:52:46 20 Q. Can you tell the jury a little bit about how those
21 slides were made?

22 A. We made them the night before. We were -- when I say
23 "we", there was a group of us, not only the presenters, but I
24 think a couple other support personnel who came along. We went
25 out to Washington, D.C., and then I think we were staying at the

1 Doubletree Hotel there in Rockville, and we had a conference
2 room that we were in there, and as kind of like a team
08:53:18 3 collaborative effort we put together these slides as a
08:53:21 4 PowerPoint. They were speaking points for the meeting the next
5 day.

6 Q. Was Andrew Siemaszko at either the prep session or the
08:53:27 7 meeting?

8 A. No, he wasn't.

9 Q. Had you set the meeting for the 11th?

10 A. I think it was set by Dave Lockwood and Doug Pickett.

08:53:36 11 Q. I'm going to show you a page from Government's Exhibit
12 87, which is in evidence.

13 Do you recognize this slide?

08:53:43 14 A. Yes, I do.

08:53:44 15 Q. What do you recognize this slide to be?

16 A. This is one of the slides that I presented to -- the
08:53:51 17 PowerPoint we presented to the tech assistants.

08:53:54 18 Q. Will you look at the first flag under the word "Facts"?

19 A. Okay.

20 Q. Do you recall presenting that information?

21 A. Yes.

22 Q. Can you tell the jury what that information was based
08:54:07 23 upon?

08:54:08 24 A. It was based upon the very work that Andrew was doing
25 that we went back and looked at these video clips and were

1 verifying them to be free of popcorn-type boron.

2 Q. At the point that you were presenting at this meeting on
08:54:25 3 the 11th, had Mr. Siemaszko finished his nozzle-by-nozzle table?

08:54:30 4 A. I don't think so.

08:54:33 5 Q. The word "or" between 11 RFO and 12 RFO, can you tell
6 the jury how that word got into this slide?

08:54:44 7 A. Well, I know we changed it. We originally -- we typed
8 it up, and it said "and." And I indicated that that -- during
08:54:57 9 our discussion, that wasn't going to be accurate.

08:55:00 10 Q. Why not?

08:55:01 11 A. Because "and" implies that -- what we were doing is we
08:55:07 12 were compiling two inspections to try to get an overall picture.
08:55:13 13 And the "and" would imply that each inspection could stand
08:55:18 14 alone, by itself would allow you to see all the CRDMs, and we
15 knew that wasn't the case for the 12th refueling outage because
16 we had had five flanges that worked.

08:55:31 17 Q. When you presented this slide to the technical
08:55:33 18 assistants, did you have any question about whether it was
08:55:37 19 accurate?

20 A. No.

21 Q. Would you have presented this information if you
22 believed it was inaccurate?

08:55:41 23 A. No.

24 Q. Take a look at the third flag on this slide for me.

25 A. Plant specific finite one?

1 Q. What is that flag talking about?

08:55:52 2 A. The finite element analysis was the work that structural
08:55:56 3 integrity associates had done to show that the gaps would open
08:56:00 4 up. So what we were saying with that is that essentially four
5 of the 69 drives were not going to have sufficient gaps open up
6 that you could take credit for them for a visual inspection.

7 Q. Who was working with Structural Integrity Associates to
8 gather this information?

9 A. Mark McLaughlin.

08:56:27 10 Q. Did there come a time after the October 11th meeting
11 that you learned that some of the information you had presented
12 that day was not accurate?

08:56:36 13 A. Yes. I think it was within the week afterwards.

08:56:43 14 Andrew had completed his table at that point. And there was
15 clearly -- there were drives that we could not take credit for
08:56:54 16 inspecting in the 11th refueling outage for 1998. So that's
17 when I went to Steve Moffitt.

08:57:08 18 Q. When Andrew brought you that information, did that cause
08:57:11 19 you to question his credibility?

08:57:14 20 A. No, because he was -- he was doing exactly what we asked
21 him to do, which was to create a nozzle-by-nozzle table. I
08:57:22 22 mean, I guess I expected that if you're going to go and ask for
08:57:27 23 a lot more detail on an inspection, you can't be surprised if
24 you get results that are different than what you initially
08:57:34 25 intended.

1 Q. And you said you went to Mr. Moffitt with this
2 information?

3 A. That's correct.

4 Q. Why did you do that?

5 A. Well, he's my boss.

6 Q. And what was the purpose of going to your boss with the
7 information?

8 A. Well, because I think we had conveyed inaccurate
08:57:47 9 information during our meeting and during the previous submittal
08:57:51 10 for the 2731.

08:57:54 11 Q. And what was the decision about what to do to rectify
08:57:59 12 that?

13 A. Well, I had indicated -- as soon as Andrew had told me
14 this information, since I was also working on the -- with Ken
08:58:09 15 Byrd on the crack growth rate model, and we needed the
08:58:13 16 inspection information as the starting point for our crack
08:58:17 17 growth rate, so I had told Andrew, well, let's expand that table
18 and go to add in 1996 if you have that. He indicated he had
19 the tapes for that, so he indicated he would start down that
08:58:32 20 path.

21 So I told Mr. Moffitt the same thing, that we would
08:58:35 22 need to correct the information. And we went to Dave Lockwood
23 to ask, what's the -- I think Roy Leslie was involved as well,
08:58:44 24 but it was to basically ask the question: Well, how do we do
08:58:48 25 this; How do we go and revise what we've already told the NRC?

1 Q. Who is Mr. Lockwood?

2 A. Mr. Lockwood was the Regulatory Affairs manager.

08:59:05 3 Q. Do you recall when the next submission was made to the

4 NRC?

08:59:10 5 A. It was later that month, the 2735.

6 Q. Does October 17th sound about right?

7 A. Yes.

8 Q. What did 2735 include that had not been previously

9 provided to NRC?

10 A. Well, it gave a breakdown of -- in the verbiage, the

11 description, we actually talked about how many drives we

12 couldn't take credit for in 2000, how many we couldn't take

13 credit for in 1998. And then we had the '96 data in there as

14 well.

15 Q. Was this Andrew's nozzle-by-nozzle table?

08:59:43 16 A. That was an attachment. We added the description in the

17 actual body, then we had the attachment. Then we also had

18 those maps, head maps that were developed by Mr. McLaughlin in

19 there as well.

20 Q. The conversation that you and I discussed very briefly

09:00:03 21 before that you had with Mr. Moffitt about Mr. Siemaszko --

22 about the reliability of Mr. Siemaszko's work, did that

09:00:11 23 conversation occur before 2735 was filed?

09:00:15 24 A. Yes.

09:00:16 25 Q. Do you recall the substance of your conversation with

09:00:22 1 Mr. Moffitt?

09:00:23 2 A. Just to describe how he was doing it.

09:00:27 3 Q. Did you tell Mr. Moffitt that you could verify Andrew
4 Siemaszko's work?

09:00:33 5 A. I don't think I used the word verify. I think I said
6 that I thought Andrew was doing a good job.

09:00:40 7 Q. Did you tell Mr. Moffitt that you had confidence in
09:00:43 8 Andrew's results?

9 A. Yes, I did.

10 Q. Did you tell him your feelings about Mr. Siemaszko's
09:00:51 11 care in doing his work?

09:00:54 12 A. I don't know that we really talked that much about that
13 as much as we did how he was making the calls.

09:01:01 14 Q. Did you assure Mr. Moffitt that you believed Andrew's
15 work was correct?

09:01:06 16 A. I might have.

17 Q. At that point when you're talking with Steve Moffitt,
18 did you have any question about the reliability of Andrew's
19 work?

09:01:14 20 A. No.

09:01:18 21 Q. Do you recall after 2735 was filed another meeting with
22 the NRC, specifically on October 24th?

23 A. Yes.

24 Q. What was the purpose of that meeting, if you recall?

09:01:30 25 A. The purpose was to meet with the staff. We had made

09:01:42 1 a -- an agreement or commitment on the 3rd of October to have a
09:01:46 2 follow-up meeting with them. And so we met with the staff to
09:01:48 3 convey this information to them.

09:01:48 4 Q. I'm going to show you a page from Government's Exhibit
09:01:52 5 108, which is in evidence. Do you recognize this slide?

09:01:58 6 A. Yes, but I'd have to look at the whole package to say
09:02:03 7 which one it is because we ended up using the same PowerPoint a
09:02:08 8 lot.

09:02:08 9 Q. Let me show you the front page to Exhibit 108.

10 A. Okay.

09:02:18 11 Q. If you look at the first paragraph of text, can you tell
09:02:23 12 from the first paragraph of text what the accompanying slides
09:02:28 13 relate to?

14 A. Yes. This is where we talk about the purpose, and it's
15 to present our information about the bulletin response,
09:02:36 16 circumferential cracking of the nozzles.

17 Q. And the date of that meeting?

09:02:40 18 A. That was the 24th of October.

19 Q. I'm going to turn your attention to one of the slides
20 that follows in Government's Exhibit 108. Did you present this
21 slide?

09:02:51 22 A. I think I did.

09:02:53 23 Q. Was Mr. Siemaszko at this meeting?

24 A. No.

09:02:56 25 Q. What was the basis of your information that you were

09:02:59 1 presenting in this slide?

09:03:01 2 A. This was from our -- my conversations with Andrew.

09:03:10 3 Q. And if you look at the first two paragraphs in this
4 slide, can you tell the jury what information you were relating
5 to the NRC on this day?

09:03:15 6 A. Well, that information is right out of what our 2735
09:03:24 7 response was.

09:03:25 8 Q. Did you have any question about the accuracy of this
9 information when you provided it on the 24th?

10 A. No.

09:03:31 11 Q. Would you have provided it if you had had questions
12 about it?

13 A. No.

09:03:41 14 Q. This is a slide two pages later from the same
15 presentation. Do you believe you presented this slide as well?

16 A. I believe so.

09:03:48 17 Q. Can you tell the jury the difference between the text in
18 this slide as opposed to the similar slide that you presented on
19 October 11th?

20 A. Yeah. Well, the 11th one, if you recall, a few minutes
09:04:06 21 ago we had -- it said the first sentence was identical to the
09:04:11 22 last part where it said it was from 11 RFO and 12 RFO -- 11 RFO
23 or 12 RFO, whereas now we're putting in there 10 as well.

09:04:22 24 Q. I'm going to put below this this slide from Government's
09:04:26 25 Exhibit 87.

09:04:31 1 A. I think we may have changed the font on facts, and
2 that's about it. But the rest of it was just a verbiage
09:04:39 3 change. And then we -- because of the 10 RFO video, the
4 results relied upon actually some interviews that Andrew had had
5 with the engineers that performed inspections, we added the
6 bullets that were underneath that you have covered up right now.
7 Q. What was your basis for believing that the results were
09:05:02 8 based on interviews that Andrew had had?
09:05:04 9 A. That's what he had indicated to me.
09:05:13 10 Q. Do you recall a request on the 24th from the NRC
09:05:17 11 requesting photographs and videotapes?
12 A. I don't recall specifically that they requested that at
13 that meeting. I know they had requested photos through Dave
09:05:32 14 Lockwood; and Dave Lockwood committed to sending them some, I
15 guess. That's what caused us to generate the 2744, I think it
16 is.
17 Q. 2744. Do you remember when that was filed with the
18 NRC?
19 A. The end of the month. I think it was the 30th, 31st.
09:05:52 20 Q. Can you describe to the jury what 2744 was?
21 A. It was a -- they wanted -- the NRC wanted a sampling or
22 a representative -- or photos, I guess, of the nozzles. And so
23 what we had asked Andrew to do, since he had all the digital
09:06:16 24 files, AVI files, whatever, to go ahead and provide
09:06:22 25 representative snapshots so that we could docket it with the

1 NRC.

09:06:26 2 Q. Let me back you up. You said we asked Andrew. Who's
3 "we"?

09:06:31 4 A. I may have. I think I asked him to actually provide a
09:06:36 5 representative sample of the photos he was looking at.

6 Q. Were you involved in preparing 2744?

7 A. Yes, I was.

8 Q. Were you involved in drafting the captions for 2744?

9 A. Yes, I was.

10 Q. Were you involved in the process of compiling
09:06:51 11 photographs?

12 A. The photos were compiled by Andrew, but I put the
09:06:55 13 captions on it.

14 Q. And what direction did you give Andrew about what
15 photographs you wanted? What did you tell him?

09:07:01 16 A. I asked him to give me a representative sample of all
09:07:05 17 three outages.

09:07:06 18 Q. When you wrote the captions, did you have conversations
09:07:09 19 with Andrew about what the photographs were that he had provided
09:07:12 20 to you?

21 A. I'm sorry; I missed part of that. Could you restate
09:07:17 22 it?

23 Q. Do you mean repeat all seven parts of that question?

24 When you talked with Andrew -- when you were
09:07:24 25 writing the captions, what were the captions based on?

09:07:29 1 A. Based upon my -- well, some of them were talking about
09:07:33 2 the methodology that we were using, so that was from previous
3 conversations with Andrew where I was looking over his shoulder
4 and he was telling me how he was doing it. Others were based
5 on other conversations we had with regard to the various -- his
09:07:52 6 conversations with other engineers. I didn't talk with him
09:08:02 7 about the captions; these were just captions that I created out
8 of previous conversations I had had.

09:08:11 9 Q. Did you write the captions that said these photographs
09:08:14 10 are representative of the condition of the head in X outage?

09:08:18 11 A. Yes, I did.

12 Q. What did you base that on?

13 A. Because I had asked him to give me photos that were
09:08:26 14 representative.

15 Q. Did you write the caption that said that the boron in
16 this picture was found to be dry; therefore, not active?

17 A. Yes, I did.

18 Q. And what was that based on?

19 A. That was based upon -- I believe that was based upon a
20 conversation I had had with Andrew that he was reflecting back
09:08:44 21 on a conversation he had with somebody else.

22 Q. Had you personally spoken with any of the people that
23 had done the past inspections before you wrote the captions?

09:08:53 24 A. No, I hadn't.

25 Q. Did you have a sense when you submitted or participated

1 in submitting 2744 to the NRC that it was inaccurate?

09:09:03 2 A. No.

3 Q. Misleading?

4 A. No.

09:09:06 5 Q. Vague?

09:09:07 6 A. No.

7 Q. What was the purpose of providing those photographs?

09:09:11 8 A. My understanding at the time was that we weren't allowed
9 to docket just film. You had to have something that could be
09:09:21 10 microfiched. So we were printing out pictures so that we could
09:09:25 11 send those to the NRC as a formal submittal.

12 Q. Did you look at the pictures as you compiled the
09:09:33 13 documents?

09:09:34 14 A. Yes.

09:09:40 15 Q. What did you notice about 2000 versus '98 versus '96 as
16 you looked at the photographs?

17 A. Well, you could definitely tell the difference between
09:09:49 18 them. I don't know if it was because -- I think we used
09:09:52 19 different equipment. The 1998 and the 1996 pictures appeared
09:10:00 20 to be black and white. And whereas the 2000 appeared to be --
09:10:05 21 we must have used a color camera. The focus, the quality of
22 the optics was -- the best was probably 1996, the clearest
09:10:17 23 picture. Everything seemed to be the most in focus, the least
24 amount of light glare bouncing off of surfaces. The next
09:10:26 25 one -- next would have been the '98. 2000 was the worse of the

09:10:31 1 three.

2 Q. Was the quality of the photographs or the quality of the
09:10:37 3 images in 2000, was that captured in one of the captions?

09:10:41 4 A. I'd have to look at the submittal. I'm sorry.

09:10:45 5 MR. WISE: Your Honor, could I have a second?

09:10:47 6 THE COURT: Of course.

09:10:47 7 BY MR. WISE:

09:11:36 8

09:11:36 9 Q. I'm going to show you a page from Government's Exhibit
10 113 which has been admitted.

09:11:45 11 Do you recognize that as a page of the submission?

09:11:48 12 A. Yes.

13 Q. Taking a look at the second paragraph, does that refresh
14 your recollection about whether there was a caption about the
09:11:58 15 lighting and video quality?

16 A. Right. There is.

17 Q. Do you recall what your sense was of the difference
18 between 2000 and the earlier tapes in terms of quality and
09:12:10 19 clarity?

20 A. Yeah. Like I had mentioned, I think the 2000 there was
09:12:15 21 -- because it was in color, there was a lot of hue changes, and
09:12:23 22 the focus did not seem to be nearly as good.

09:12:29 23 MR. WISE: Your Honor, just for the record, so I
24 don't leave a misimpression with the jury, the photos of the
25 images are worse in this than the original. So the photos are

1 not this bad. I just wanted to show it to Mr. Geisen for the
2 caption.

3 THE COURT: Fine.

09:12:56 4 BY MR. WISE:

09:12:56 5 Q. Did there come a time, Mr. Geisen, that you presented
09:13:00 6 the videotapes to the NRC?

09:13:02 7 A. Yes.

09:13:03 8 Q. Do you recall the date?

9 A. November 8th of 2001.

10 Q. Did you go to Washington, D.C., specifically to present
11 the videos to the NRC on November 8?

09:13:14 12 A. No, I didn't.

09:13:15 13 Q. Why did you go to Washington at that time?

14 A. Well, we had a series of meetings that were scheduled.
15 There was one that was a public meeting on the 8th. I was just
09:13:26 16 going to be a witness -- or in the audience; I wasn't actually
09:13:31 17 presenting. Then there were two meetings on the 9th that I was
09:13:35 18 participating in.

09:13:36 19 Q. Did you travel to Washington, D.C., with the rest of the
20 Davis-Besse team?

21 A. No. The team travelled out on the 7th. Historically
22 we'd always travel the day before, do a last-minute brief the
23 night before to make sure we had everybody prepped and the
24 appropriate number of copies and everything we were going to
25 hand out for handouts and that sort of stuff. Usually we would

09:14:01 1 send somebody down to Kinko's to make last-minute copies or
09:14:05 2 something. And I don't remember what it was, but I had a
3 personal engagement that I had to take care of on the night of
09:14:12 4 the 7th, so I requested permission from Mr. Moffitt to fly out
09:14:16 5 late. So I flew out the next morning on the 8th. I got to
6 the NRC building about 10:00, 10:30.

7 Q. When did you learn that you were going to present
09:14:27 8 videotapes to the NRC on the evening of the 8th?

9 A. After I got there on the 8th, Dave Lockwood and Steve
10 Moffitt came up to me, and they basically said, you were
09:14:39 11 selected to present these. It was one of these things I wasn't
12 there the night before, so...

13 Q. Had you brought the videotapes with you?

14 A. No, I think Dave Lockwood did.

09:14:51 15 Q. Was Mr. Siemaszko part of the team that was out there at
16 this time?

17 A. No, he wasn't.

09:14:57 18 Q. What time was the meeting set that you were going to
19 show the tapes?

20 A. 5:30 that night.

21 Q. And you said you learned at what time that you were
09:15:05 22 going to be doing the presentation?

23 A. Probably around 10:00, 10:30.

24 Q. After you learned you were going to present the tapes,
25 did you sit down and watch the tapes before the meeting?

1 A. No. We had meetings scheduled the rest of the day.

2 Q. As you went to the meeting at the NRC at 5:30, had you
3 ever reviewed the tapes kind of from start to finish running the
4 tapes through?

5 A. No, actually I hadn't even looked at these tapes at all
6 because the only thing I had seen up to that point was portions
7 of the digital video that -- when I was looking over Andrew's
8 shoulder. So I actually hadn't looked at the VHS at all.

09:15:45 9 Q. When you got to the meeting, can you describe for the
10 jury just kind of what the room looked like that the meeting was
09:15:51 11 held in?

12 A. Nothing fancy. It was probably an 18-by-20 foot square
09:15:59 13 meeting room. Desks and stuff around it or long tables and
14 chairs type of thing. And we had a TV monitor on top of one of
15 those metal push-around carts that had a metal shelf and a VCR
09:16:18 16 deck underneath it.

09:16:19 17 Q. You said you had actual VHS tapes?

18 A. That's correct.

09:16:23 19 Q. Do you recall how many people from the NRC were at this
09:16:27 20 meeting?

21 A. It seemed like a lot. But I was by myself, so probably
22 about eight to 12. I don't know. Something like that. We
09:16:36 23 were kind of huddled around the cart that had the TV on it.

24 Q. Mr. Hiser testified, I believe on the second day of this
09:16:44 25 trial, that you controlled the remote during this meeting. Do

09:16:47 1 you recall, first of all, whether there was a remote control?

2 A. I don't remember a remote. I remember we were huddled

3 around this TV cart and I was operating the VCR.

4 Q. By pushing the buttons on the VCR?

5 A. I think it was push buttons, but I was operating the

09:17:05 6 VCR.

7 Q. Which tape was shown first by you?

8 A. I believe it was 1996.

9 Q. Why did you put in 1996?

09:17:12 10 A. I just picked one. We had -- I think I even asked the

11 staff where they wanted to start. No one really had a

09:17:24 12 preference, so I just picked the earliest one.

09:17:27 13 Q. And then I take it you put the machine in the tape?

14 A. No, I put the tape in the machine. It works better

15 that way.

09:17:36 16 Q. I guess it's good that you were there and not me.

09:17:39 17 You put the tape in the machine. Then what did

18 you do?

19 A. I pushed play, and we just watched the tape.

09:17:49 20 Q. Did there come a time that you either paused the tape,

09:17:53 21 fast-forwarded the tape, or rewound the tape?

22 A. There were times where I would fast forward and let that

23 slow/fast forward so you can scan it.

24 Q. Why would you do that?

25 A. Well, there are times where you're pulling -- like, the

1 video camera is coming out of one mouse hole, going to another.
09:18:12 2 It didn't appear to be anything worthwhile during that. And I
3 felt that we wanted to get through as many of the tapes as we
4 could. And just -- the staff was okay with that, and they
09:18:25 5 would tell me if they wanted me to stop and look at something; I
6 would stop and rewind.

7 Q. When you fast-forwarded or rewound the tape, did the
8 picture remain up on the screen?

9 A. Yes.

10 Q. Was there ever a time -- you know, the little --
09:18:40 11 A. You know, it had the little lines across it because
12 you're going at a faster speed.

13 Q. Was there ever a time when you were fast forwarding or
09:18:49 14 rewinding the tape that the screen went blank?

15 A. Not that I recall.

16 Q. Was there ever a time when a staff member asked you to
17 either pause or to rewind or to fast forward the tape that you
18 refused to do so?

19 A. No.

09:19:01 20 Q. Was there any conversation going on during the showing
21 of the 1996 tape?

22 A. Yeah. I think there was -- I was getting asked
23 questions about, well, how did you classify that drive? How did
24 you -- you know, how did you call that drive and various drives
25 and stuff.

09:19:23 1 I'm not the person that did the inspection. I can
2 tell you how we did it, but I wasn't the actual person that
3 actually did it.

4 Q. What did you tell the staff when they asked how you did
5 it, how --

09:19:35 6 A. I explained how we were looking at that downhill
09:19:39 7 intersection between the nozzle tube and the head, and we were
09:19:44 8 looking for popcorn-type boron deposits.

09:19:48 9 Q. When you say they were asking you about specific
10 nozzles, what kind of questions were you getting?

11 A. They would point to a specific nozzle that was on tape
12 and say, you know, how did you call that one? And I couldn't
13 even tell you at the time what the nozzle number was much less
14 how we called it. So I simply said: I'm not the one that made
15 the calls. I think even at that point I said: We'd be happy
09:20:15 16 to bring the guy out here that did.

09:20:17 17 Q. Is there any sense that the staff was frustrated with
18 your inability to answer those questions?

19 A. I think they were extremely frustrated in my ability
20 because I think they expected to talk to somebody that actually
21 did the inspection.

09:20:29 22 Q. How much of the 1996 tape did you play?

23 A. We went through whole thing.

24 Q. Did you make any effort while you were showing the '96
09:20:36 25 tape to prevent the NRC from seeing any parts of that tape?

1 A. No.

09:20:40 2 Q. Did you know what was on that videotape before you put
3 it in the machine?

4 A. Other than it was supposed to be the '96 inspection. I
5 don't think I follow your question.

6 Q. Were there any parts of the tape that you were worried
09:20:53 7 about them seeing?

09:20:54 8 A. Oh, no.

09:20:55 9 Q. What tape did you put in after the '96 tape?

10 A. I think it was the '98.

11 Q. And tell the jury a little bit about how -- what
09:21:04 12 happened when you put that tape in?

13 A. Same type of thing. I was playing it and we would fast
14 forward through portions of it. Some of the NRC staff that were
15 there commented on the quality of that video, saying that --
16 because I think when we paused, they would say, there's not --
17 you can't tell; it's too blurry; you can't get a good view;
09:21:35 18 there seems to be a lot of light reflection because the drives
19 were shiny, so you'd get a lot of glare, and I don't see how you
20 can make these calls. Once again, I said: Well, I'm not the
21 guy that made the calls.

22 Q. Do you recall seeing more boron on the head in the '98
23 tape than had been on the '96 tape?

09:21:54 24 A. Yes, I think there was.

25 Q. Did that surprise you?

1 A. No, because we had already made a submittal that
2 indicated that there was, like, a progression of more boron
09:22:05 3 from -- in 1998, then to even more in 2000.

09:22:09 4 Q. Did you show the entire '98 tape?

5 A. I don't think so. I think we only showed a portion of
6 it.

7 Q. Is it your decision -- was it your decision alone to not
09:22:20 8 show the rest of the '98 tape?

9 A. No, I think it was pretty much a consensus in the room.

10 Q. Did you put in the 2000 tape?

11 A. I offered to, but I also know -- was criticized for
12 saying comments along the line of that: If you thought '98 was
09:22:39 13 bad, 2000 is even worse because --

14 Q. What were you speaking to when you said that?

15 A. Well, I mean the focus, the coloring and the glare of
16 everything, the optics were much worse on 2000. That is what
09:22:52 17 we had said in our 2744 document.

18 Q. Were you concerned about showing the NRC what was on the
19 2000 tape?

09:23:02 20 A. No.

21 Q. Had you watched the 2000 tape?

22 A. No. But I knew the coloration and the optics was not
09:23:11 23 good of the pictures we had sent on 2744.

24 Q. When you left the NRC that night, did you leave the
09:23:18 25 tapes with them or did you take them with you?

1 A. No, I took them back.

09:23:21 2 Q. Did anyone from the NRC ask you to leave the tapes
09:23:24 3 behind?

4 A. No, they didn't.

5 Q. If they had asked you that question, would you have left
6 them?

7 A. I probably would have. I probably would have asked Mr.
8 Lockwood first because I didn't know if, number one, that was
9 our only copy, and whether there was some sort of paperwork I
10 had to fill out to transmit it to them.

11 Q. Were you making any effort on November 8th to hide
09:23:47 12 anything from the staff of the NRC?

13 A. No, I wasn't.

14 Q. Can you describe for the jury briefly what your feelings
09:23:54 15 were coming out of that meeting?

16 A. I was extremely frustrated because I couldn't answer the
09:24:04 17 questions. I felt like -- well, I mean, I felt stupid. I
18 mean, I couldn't answer the questions that they were asking.
09:24:14 19 And I was kind of angry at my teammates that had given me these
20 tapes and sent me off to do that because I felt I wasn't
21 prepared to actually go into that situation.

22 Q. Did you ever describe the tapes as worthless?

09:24:31 23 A. I think I used the phrase "garbage" the next day.

24 Q. When you used the phrase "garbage", what did you mean by
25 that?

1 A. Well, the next morning we had a presentation. It was
2 to talk about the crack growth rate model. And I think it was
09:24:47 3 Mr. Bateman from the NRC that kept wanting to go back to: How
4 could you make these calls; those tapes were all blurry and
09:24:56 5 everything? And I got frustrated. And I was, you know,
09:25:00 6 trying to make a presentation on this, and I keep getting
7 sidetracked on this, and I got frustrated. At one point I
8 said: Hey, I'll admit the quality of those tapes is garbage.
9 Or something along that phrase. That would have been on the
10 morning of the 9th.

11 Q. Did you have a belief at that point about whether the
09:25:18 12 quality of the digital images that Mr. Siemaszko had used were
09:25:23 13 better than the videos?

14 A. Well, I'm sure they were better. Not necessarily from
15 a -- I mean, you're using the same camera, so, I mean, from an
09:25:35 16 optics standpoint, you could say that it's coming from the same
09:25:38 17 source, but I think the ability to stop it digitally, you didn't
18 get as much distortion as you did when you paused the VHS tape.

19 Q. Do you recall at any point during the meeting on the 8th
20 or the next day on the 9th where anyone from the NRC said to
21 you: What we saw on those videotapes showed so much boron that
22 we can't give you credit for past inspections?

23 A. No.

09:26:11 24 Q. Was there a decision made by the Davis-Besse team about
09:26:16 25 sending out Mr. Siemaszko to NRC?

09:26:20 1 A. Yes. I -- when I got done presenting the videotapes,
2 went back to the hotel, and the rest of the team had already
09:26:31 3 gathered in our conference room, and I told them that it didn't
4 go well and that they really needed to speak to the person
09:26:39 5 that -- the questions they had were for the person that did the
09:26:42 6 inspection. I told them that I had told the NRC that, hey, we
7 can bring out the guy that did the inspection, Andrew. And --

8 Q. Did that happen?

9 A. Yes, it did. We had discussions on it. We brought him
10 out, I think, the 14th.

11 Q. Do you recall whether there was discussion about
09:27:00 12 concerns about whether Andrew should be sent?

13 A. Yeah. There was. Because I think his supervisor was
09:27:07 14 concerned about his ability to command the English language.
09:27:12 15 Andrew's got a very strong accent, and sometimes he's not easy
16 to understand.

17 Q. Was there any concern about his reliability or his
09:27:20 18 honesty?

19 A. No. That's why we brought him out.

20 Q. Do you recall when Mr. McLaughlin was testifying, an
21 e-mail on November 15th from Structural Integrity Associates
22 showing that they now believed that all the gaps would open up?

09:27:40 23 A. Yes, I remember that.

24 Q. Who was running that communication with SIA during
25 November?

1 A. Mark McLaughlin.

2 Q. Do you have any recollection of the e-mail exchange
09:27:51 3 between yourself and Mr. McLaughlin and Mr. Lockwood about that
4 result?

09:27:56 5 A. No, I don't. But I don't think it would have mattered
6 from the standpoint we were already in our PRA model; we weren't
7 taking credit for those.

8 Q. Would the fact that the gaps would open up have changed
09:28:12 9 or altered the validity of the PRA in your understanding?

09:28:17 10 A. No, because I think we had already said that because of
09:28:21 11 boron, there was some boron on top of the head in 2000 -- or
09:28:25 12 excuse me, in the 10 RFO, 1996. And we had already said that,
13 well, those same drives that would not open up, which now would
09:28:39 14 open up, were precluded from being inspected anyway. So we
15 weren't taking credit for them either way.

09:28:46 16 Q. Was it your understanding that the November 15th e-mail
17 was SIA's last word on whether the gaps would or would not open
18 up?

09:28:56 19 A. I'm not sure on that. I had thought at some point they
09:28:59 20 had changed, but based on what I heard Mr. McLaughlin say the
21 other day, he was the expert on it, so I'd say I was probably in
09:29:07 22 error saying they revised it again.

09:29:09 23 Q. Do you recall making a presentation to the company
09:29:12 24 Nuclear Review Board on November 29th?

25 A. I've reviewed the information since then.

09:29:17 1 Q. Are you aware during that presentation the meeting
2 minutes reflect that you told the CNRB that four of the gaps
3 would not open up?
4 A. That's correct.
5 Q. Would you have provided that information to the CNRB if
6 you believed it to be untrue?
7 A. No, that's what I believed was the truth at the time.
09:29:35 8 Q. Let me ask you about a meeting with the NRC on November
09:29:39 9 28th. Do you recall that meeting?
09:29:41 10 A. Yes.
09:29:44 11 Q. I want to show you a slide from Government's Exhibit
09:29:57 12 118.
09:29:58 13 Do you recognize that as a slide from the November
09:30:01 14 28th presentation?
09:30:03 15 A. It's a similar slide we made in several presentations.
16 So I -- unless I saw the whole package again, I wouldn't be able
09:30:12 17 to say it's specifically from that meeting.
18 Q. Let me show you the cover sheet of this exhibit.
19 A. Okay. I see the date of the meeting.
09:30:22 20 Q. Let me make sure I get the exhibit number in there.
21 This is 118. You see the date of the meeting in the box?
22 A. Correct. 11-28.
09:30:33 23 Q. Did you present this slide?
09:30:36 24 A. I believe I did.
09:30:38 25 Q. Did it reflect accurate information to the best of your

1 knowledge when you presented it?

2 A. Yes.

09:30:45 3 Q. Do you recall anyone from the NRC's side interrupting
09:30:50 4 during the presentation to say, why do you keep on telling us
5 this information about '96, '98 and 2000 because we've told you
6 that we are not crediting those inspections based on the
09:31:06 7 videotapes?

8 A. No.

09:31:16 9 Q. Mr. Geisen, at any point during the time we've been
10 talking about when you were involved in the bulletin responses,
11 did anyone at Davis-Besse tell you to lie or mislead the NRC?

09:31:28 12 A. No, they didn't.

13 Q. What would you have done if you had been given that
14 instruction?

15 A. I would have denied it. I probably would have been
09:31:38 16 very, I don't know, indignantous (sic) about it because of
09:31:43 17 the -- I mean, they would be questioning my integrity. I
18 wouldn't want to work there.

09:31:50 19 Q. Have you ever worked at an operation or a plant where
09:31:53 20 you were told by your superiors to lie or falsify information?

21 A. No.

22 Q. Can you imagine what you would have done in that
23 circumstance?

24 A. I probably would have left. I mean, our whole industry
25 is based upon truth and integrity.

09:32:09 1 Q. How far did you and your family live from Davis-Besse?

2 A. About 25 miles.

3 Q. How often did you come to work at the plant?

09:32:18 4 A. Daily.

09:32:20 5 Q. If you would have had concerns about the safety of the

6 plant, would you have covered those up?

7 A. No.

09:32:27 8 Q. Do you have any regrets as you sit here today and as you

9 look back to your performance in the fall of 2001 with the job

10 that you did?

09:32:35 11 A. I don't think you could be in my position right now on

12 this stand and not say that you've got a lot of regrets. I

13 regret that I didn't take a more -- I mean, this was a

09:32:48 14 life-changing event for me, but it was also a huge event for the

15 industry. I mean, the industry that -- I've spent 20 years in

09:32:56 16 nuclear power, and we've had our -- we, as an industry, have had

17 our setbacks. I mean, you've got Three Mile Island; you had

09:33:07 18 Chernobyl; now you have the hole in the head at Davis-Besse,

19 also an incident at Davis-Besse in '85. And so, you know, so I

20 feel a lot of remorse or regret over the fact that I didn't --

09:33:25 21 couldn't avert this.

09:33:26 22 Q. What do you wish you would have done different?

09:33:29 23 A. Well, I wish I had spent a lot more time reviewing past

24 inspection data and possibly putting a second engineer to

09:33:37 25 double-check everything that Mr. Siemaszko was doing and try to

09:33:41 1 come up with more of a consensus answer instead of just a single
09:33:46 2 engineer's answer.

3 Q. In the fall of 2001 did you believe that was necessary?

09:33:50 4 A. No, I didn't.

5 Q. Did you doubt the information you were getting?

09:33:54 6 A. No.

7 Q. Did you ever lie to the NRC?

8 A. No.

9 Q. Did you knowingly make any false statements to the NRC?

10 A. No.

09:34:04 11 MR. WISE: That's all I have, Your Honor. Thank
12 you.

09:34:10 13 THE COURT: Cross-examination, Mr. Poole.

09:34:13 14 MR. POOLE: We will have some questions.

09:34:27 15 - - -

09:34:27 16 DAVID GEISEN, CROSS-EXAMINATION

09:34:28 17 BY MR. POOLE:

09:34:28 18 Q. Good morning, Mr. Geisen.

19 A. Good morning.

09:37:08 20 Q. Why don't we start with the 12th refueling outage. I
21 think you probably recall testifying that you were involved in
09:37:20 22 outage central; isn't that right?

23 A. That's correct.

09:37:24 24 Q. And you were at that time a new manager?

09:37:27 25 A. That's correct.

09:37:34 1 Q. And in your role at outage central, you had occasion to
09:37:41 2 review the Condition Reports that were produced?

09:37:44 3 A. That's correct. As each one was written, I would review
4 the previous day's worth of Condition Reports. All the managers
5 did.

09:37:55 6 MR. POOLE: And I would like to display, Your
09:38:02 7 Honor, a photograph from Government's Exhibit 12.

09:38:07 8 THE COURT: Which has been previously admitted?

09:38:10 9 MR. POOLE: Previously admitted.

10 BY MR. POOLE:

11 Q. You testified among other things you saw a picture
12 that's come to be known as the red photo?

13 A. That's correct.

09:38:19 14 Q. And at the time you assumed taking care of whatever
09:38:27 15 issues that raised was somebody else's responsibility?

16 A. That's correct.

09:38:32 17 Q. You also were involved in the discussion about head
18 cleaning?

09:38:38 19 A. That's correct.

09:38:41 20 Q. And I forget if you characterized it this way, but there
09:38:47 21 was a debate over whether it was appropriate to use steam and
09:38:52 22 water to clean the boron off the head?

09:38:55 23 A. Yeah. It wasn't steam, but it was -- it's a --

09:39:01 24 Hotsy-Totsy is the brand name of the steam cleaning equipment,
25 but it's not actually steam; it's 140 degrees hot water. It's

09:39:09 1 a pressure washer.

09:39:10 2 Q. A hot water pressure washer?

3 A. That's correct.

09:39:16 4 Q. Specifically there was another Condition Report, CR

09:39:26 5 2000-1037, that covered the cleaning effort?

6 A. That's correct.

09:39:33 7 Q. And you were actually involved in that Condition Report,

09:39:37 8 weren't you?

9 A. Yes, I removed that Condition Report from the mode

09:39:41 10 restraint list.

09:39:49 11 MR. POOLE: I'd like to display a page of

12 Government's Exhibit 15 previously admitted.

13 THE COURT: Yes. That's fine.

14 BY MR. POOLE:

15 Q. Is this the last page of that Condition Report?

16 A. Yes, it is.

09:40:01 17 Q. And signed by you?

18 A. That's correct.

09:40:04 19 Q. And it removes the mode restraint which would have

09:40:12 20 prevented the plant from starting up before the cleaning was

09:40:17 21 done?

09:40:17 22 A. It removed the mode restraint of this CR because there
23 was already a work order generated to clean the head. The
24 reason the CR is on the mode restraint list is because when you
25 want the CR to be reviewed, you want to make sure that review

09:40:36 1 happens before there's a mode change so that if there's any work
2 that needs to be generated, or any corrective work that needs to
3 be done as a result of that Condition Report, that it gets
4 scheduled. So my basis for removing this from the mode
5 restraint list is we had a work order that had been identified
6 as a corrective action that was on the mode restraint list.

09:41:00 7 Q. Now, does generating paper count as a corrective action
8 in a nuclear power plant?

09:41:07 9 A. No, it counts as putting together an evaluation.

09:41:20 10 Q. Say in the Navy if you had a condition adverse to
11 quality that was documented, would generating paper about it be
12 considered a solution to the problem?

09:41:34 13 A. It depends on the problem. If the problem is perhaps a
14 design related, and you go in and generate a calculation that
09:41:45 15 addresses the issue, then I guess the answer would be yes. I'm
09:41:49 16 not sure that answers your question, though. Is that what
09:41:53 17 you're getting at?

18 Q. I'll take a different approach. If the cleaning had
19 remained on the mode restraint list, could the plant have
20 started up while it was still there?

09:42:13 21 A. If it -- well, it wouldn't have unless someone had
22 consciously removed that as a mode restraint.

09:42:22 23 Q. And that's the purpose of the mode restraint, isn't it?

09:42:25 24 A. That's correct.

09:42:26 25 Q. And later on it became apparent that not completing the

1 cleaning was a problem, didn't it?

09:42:38 2 A. Much later on we felt that -- I found out that the
09:42:43 3 cleaning had not been as thorough as it was intended to be,
4 that's correct.

09:42:47 5 Q. And it was a problem, wasn't it?

09:42:49 6 A. I'm not sure I understand what you're getting at, but
7 it's a problem.

8 Q. Well --

09:42:56 9 A. I mean, it did create an issue for potential -- in 13
09:43:02 10 RFO not being able to do -- you know, you didn't have a baseline
11 for 13 RFO.

09:43:09 12 Q. And by "baseline", what we're talking about is you
13 didn't have the kind of pristine head you'd need to do a visual
09:43:17 14 examination?

15 A. That's a true statement.

09:43:20 16 Q. And when you found out that the cleaning hadn't been
09:43:25 17 completed, you knew that Davis-Besse did not have the kind of
18 pristine head that would be required for a qualified visual
09:43:35 19 examination?

09:43:37 20 A. I've got to be careful how I answer that question
21 because at the time I was visualizing a qualified visual
22 inspection as you either go do a visual inspection, but if you
09:43:49 23 can't, you would then follow it up with an NDE. I realize
09:43:54 24 today that's probably not a very realistic viewpoint. And
25 so -- but back at that point, if you had asked me that question

1 back in 2001, I would have said, yes, we can do a qualified
09:44:08 2 visual inspection because we would immediately go into NDE if we
09:44:12 3 couldn't.

09:44:16 4 Q. Just to remind the jurors, NDE is nondestructive --

09:44:20 5 A. Nondestructive examination.

09:44:23 6 Q. So that would be dye penetrant, ultrasonic testing?

7 A. Yeah, even doing radiographs. All that falls into NDE.
8 Anything that does an inspection that doesn't damage the
9 equipment is pretty much called NDE.

09:44:40 10 Q. And visual inspection is usually not considered an NDE
09:44:45 11 technique; isn't that right?

12 A. It's usually considered just visual, right.

09:44:50 13 Q. So the effect of lifting this mode restraint was to make
14 a visual examination at the 13th refueling outage impossible, at
09:45:07 15 least for the parts of the head that were not cleaned?

16 A. Which mode restraint are we talking, this CR mode
09:45:13 17 restraint?

18 Q. The one we're looking at here.

19 A. I didn't view it that way. I viewed it as we were
20 doing an inspection or that the -- I'm sorry, we were doing a
21 head cleaning. So yeah, I guess you could say that. I didn't
22 -- when I wrote this, I didn't anticipate that the head would
23 not be cleaned completely.

24 Q. Sure, at the time you wrote this, the cracking problem
25 was not as apparent as it was later; is that a true statement?

1 A. We hadn't had any circumferential cracking, yeah.

09:45:50 2 Q. The cracks at Oconee had not yet occurred?

3 A. That's correct.

4 Q. The Bulletin 2001-01 had not yet been written?

5 A. That's correct.

6 Q. So at the time this was just about cleaning?

7 A. That's correct.

09:46:29 8 Q. When you were involved in the discussions about

09:46:33 9 cleaning, did you know who the person was who was responsible

10 for doing the cleaning?

11 A. I believe it was Andrew Siemaszko, but I've got to be

09:46:41 12 honest, I know that for a fact now, and I can't say for sure

09:46:47 13 seven years ago if I knew that at the time, but I believe I did.

09:46:53 14 Q. All right. By the fall of 2001 when you were doing the

15 bulletin responses -- well, it was during the fall of 2001 that

09:47:02 16 you learned that the head had not been cleaned?

17 A. That's correct.

09:47:08 18 Q. And at that point, if not earlier, you knew that the

19 person who was responsible for doing it was Andrew Siemaszko?

09:47:14 20 A. For doing the head cleaning --

21 Q. Yes.

09:47:17 22 A. -- or the inspection?

23 Q. Head cleaning and an inspection.

24 A. Okay. Head cleaning, I probably knew that was Andrew.

25 Q. All right. Let's look at some of the e-mails -- well,

1 before I do that, do you recall being a member of the Project
2 Review Group at Davis-Besse?

09:47:52 3 A. Yes. I became a member of the Project Review Group
4 when I became a manager in 2000.

09:48:04 5 Q. Do you remember that Project Review Group meeting at
6 which -- well, do you remember any Project Review Group meetings
7 at which there was a discussion of the proposal to cut access
09:48:16 8 ports into the service structure on the reactor vessel head?

09:48:20 9 A. I know that having -- in preparation for this trial I
09:48:27 10 reviewed the project review committee meeting minutes; I think
11 it was from July or August of 2001, it might have been 2000. I
12 think it was 2000 where it was rescheduled from a budgetary
13 standpoint from, I think, 13 RFO to 14 RFO.

14 Q. All right. Let's take a look at that exhibit.

15 MR. POOLE: I believe it's in evidence, Your Honor.
16 It's Exhibit 21.

09:49:03 17 THE COURT: Yes.

09:49:15 18 MR. HIBEY: Excuse me, Your Honor. Is the mike on
19 at the podium?

09:49:23 20 THE COURT: Yes.

09:49:25 21 MR. POOLE: Should I speak louder?

09:49:43 22 BY MR. POOLE:

23 Q. We're looking now at the cover page of Exhibit 21. And
09:49:50 24 I've enlarged the heading Project Review Group Meeting Minutes,
09:49:54 25 September 7th, 2000.

1 A. Correct.

2 Q. Is that the document you reviewed to prepare for your
09:49:59 3 testimony?

4 A. Correct.

09:50:08 5 Q. And does it show you on distribution?

6 A. Yes, it does.

09:50:32 7 Q. All right. I'm going to display page 8 of that exhibit
09:50:36 8 to the jury. And at the bottom there is a mention of
09:50:40 9 installing service structure opening.

09:50:42 10 A. That's correct.

09:50:44 11 Q. And it's deferred to the 14th refueling outage; is that
12 right?

13 A. That's correct.

09:50:51 14 Q. For financial reasons?

09:50:53 15 A. That's correct.

09:50:54 16 Q. You were part of the committee that decided to defer
17 that --

09:50:58 18 A. That's correct.

19 Q. -- service structural opening?

20 Do you recall the discussion?

21 A. Not a lot of detail.

22 Q. Well, tell the jury what detail you remember.

23 A. Okay. Well, what I know is from what's in here is that
24 there was obviously a discussion. Normally we would have --
09:51:16 25 anytime we had a discussion along a particular model, we usually

1 bring the MOD sponsor in. So I would assume, but I don't
2 remember for sure, that in the response -- it might have been
3 Prasoon that sponsored it initially or initiated it, would have
4 spoke to it, or it would have been Plant Engineering that spoke
5 it to.

09:51:44 6 Q. And in retrospect the decision to defer that service
7 structure opening, year after year as it was, turned out to be a
09:51:54 8 mistake?

9 A. That's correct.

09:52:15 10 Q. Counsel asked you about a series of e-mails that
09:52:20 11 preceded the first submission to the Nuclear Regulatory
09:52:27 12 Commission, and you addressed each in turn. I'd like to ask
13 you some questions about some of those.

14 The first one is the e-mail, Government's Exhibit
09:52:38 15 22, from Prasoon Goyal on December 13, 2001.

09:52:48 16 MR. POOLE: Your Honor, that's in evidence.

09:52:56 17 A. December 13, 2000.

09:53:00 18 BY MR. POOLE:

09:53:00 19 Q. Did I misstate the date?

09:53:03 20 A. I thought you said 2001.

21 Q. Okay. December 13, 2000. It's an e-mail from Prasoon
22 Goyal to Andrew Siemaszko, you, and others?

09:53:14 23 A. Correct.

09:53:16 24 Q. It's about the lessons learned from Ocone 1. Among the
25 lessons learned are that the small -- the amount of boric acid

09:53:41 1 observed in the visual inspection at Oconee was very small and
2 that it is important to have a clean head for a good visual
09:53:51 3 inspection. If the head is not clean, the chances of finding
09:53:54 4 boric acid such as that observed at Oconee 1 are not very good.

09:53:59 5 I think your testimony about that exhibit is it
6 really didn't tell you anything new.

7 A. That's correct. We had already been briefed by the Duke
09:54:08 8 representative on the Steering Committee about the Oconee 1
09:54:12 9 inspection.

09:54:25 10 Q. So you know the amount of boric acid that you can expect
11 to find for an inspection for nozzle cracking is a very small
12 amount?

13 A. That's correct.

14 Q. You knew that it was important to have a clean head?

09:54:50 15 A. That's correct.

09:54:53 16 Q. And you knew that if the head was not clean, the chances
17 of finding boric acid deposits like those at Oconee were not
09:55:04 18 good?

19 A. That certainly makes it much harder.

09:55:09 20 Q. And since you already knew those things, there was no
09:55:13 21 action you were required to take as a result of this e-mail?

09:55:17 22 A. No. This was just an FYI.

09:55:32 23 Q. The next document was a trip report by Mr. Goyal.

09:55:57 24 Again, it's lessons learned from Oconee 1. I'm going to

09:56:03 25 enlarge the first bullet for the jury. They were able to find

1 a leak because their CRDM flanges do not leak and the head was
2 in pristine condition. This is just another FYI?

3 A. This was the trip report. I think it was actually from
4 the same conversations he had had.

09:56:25 5 Q. Now, there's an element of a warning in this, isn't
6 there?

09:56:33 7 A. You could say that.

09:56:35 8 Q. Because you knew that there was a problem with leaking
9 flanges at Davis-Besse?

09:56:40 10 A. Yes.

09:56:41 11 Q. And it was a design problem? It was the flange that
12 they built the reactor with, isn't that right -- I'm sorry, the
13 gasket that was allowing the leaking was the one that the plant
14 was built with?

09:56:55 15 A. Could you rephrase the whole thing because I think you
16 started saying it was not a design problem? I don't want to --

17 Q. I'm sorry. I probably mumbled.

18 A. I think there was a design problem.

19 Q. It was a design problem?

20 A. Yes.

21 Q. It was a problem in the original design of the plant
22 that they used flanges --

23 A. Gaskets.

09:57:17 24 Q. -- gaskets in the flanges that allowed leakage?

25 A. It think it was a combination of the gasket and the

09:57:24 1 bolting because when we modified, went to a different style, we
09:57:27 2 actually used different flanges -- I'm doing the same thing --
09:57:32 3 different gaskets and different bolting.

09:57:35 4 Q. And you knew that Davis-Besse's flanges had a history of
09:57:45 5 leaking?

6 A. That's correct.

7 Q. Which caused boron to appear on the head?

8 A. That's correct.

9 Q. Which would then not be pristine?

09:57:52 10 A. That's true.

11 Q. And then not allow detection of nozzle leakage if it was
09:57:57 12 occurring?

13 A. Wherever the boron was, that is true.

09:58:03 14 Q. But you didn't act on this warning, did you?

09:58:06 15 A. No.

09:58:08 16 Q. But you were Manager of Design Engineering?

09:58:11 17 A. That's correct.

09:58:27 18 Q. All right. I think -- well, the next exhibit that Mr.
09:58:34 19 Wise covered with you was a March 26, 2001 e-mail from Prasoon
09:58:45 20 Goyal, Government's Exhibit 25.

09:58:47 21 MR. POOLE: Previously admitted, Your Honor, and
22 I'm going to display it.

09:58:53 23 A. Okay.

24 BY MR. POOLE:

25 Q. That's the e-mail about the heats, isn't it?

1 A. That's correct.

09:58:58 2 Q. And Davis-Besse nozzles 1, 2, 3, 4, and 5 are the same
3 heat as nine different nozzles that had already cracked at
09:59:14 4 Ocone 3?

5 A. That's correct.

09:59:17 6 Q. You said at the time you didn't pay much attention to
7 this.

8 A. Well, this was information I already knew from the
9 Steering Committee, that 60 of the 69 nozzles at Ocone 3 were
10 the same heat as the five at Davis-Besse.

09:59:34 11 Q. Coincidentally, those were the top five nozzles on the
12 reactor vessel head, weren't they?

13 A. That's correct.

14 Q. And those are the same nozzles that at the time you
15 thought were incapable of showing a gap?

16 A. That's true, or four of those five anyway.

09:59:52 17 Q. So is it fair to say that since nine nozzles in this
18 heat had already been found to have cracks at Ocone 3, this
19 e-mail is a warning that these nozzles at Davis-Besse come from
20 a heat that is susceptible to cracking?

10:00:16 21 A. Yeah. I wish I put a lot more emphasis on this issue
10:00:21 22 back then.

10:00:29 23 Q. And, in fact, one of those nozzles is the nozzle that
10:00:34 24 cracked with the really significant consequences that we've
10:00:39 25 already talked about, Nozzle 3?

10:00:41 1 A. Right. Yeah. Actually, two of the nozzles that we
2 had cracking on nozzle 2 and 3 are the same heat.

10:01:04 3 Q. Mr. Wise asked you about the document that has often
4 been called a JCO or Justification of Continued Operation. And
10:01:19 5 you differed with that nomenclature, but do you recall
10:01:23 6 discussing that document?

10:01:24 7 A. Yes. The recommendation for doing inspection if we
10:01:31 8 were to trip and go to Mode 5.

10:01:37 9 Q. Just to recap your testimony, if there were an event
10 that caused the plant to go down such as a tornado, go down to
11 Mode 5 where it's offline, it's cool, and it's depressurized,
12 the question is then, would Davis-Besse have to inspect the
13 reactor vessel head?

14 A. Correct.

10:02:00 15 Q. And the justification -- I'm trying to not call it its a
16 JCO -- a justification was written to make it restart under
17 those circumstances without such an inspection?

18 A. Correct. If you're more comfortable you can call it a
19 recommendation.

10:02:17 20 Q. And you signed off on that?

21 A. That's correct.

10:02:20 22 Q. Now, at the time you signed off, you knew that you
10:02:25 23 had -- or you'd been warned that an effective inspection
24 requires conditions that didn't exist on the reactor vessel head
25 at Davis-Besse?

10:02:38 1 A. I'm sorry; I'm not following your question.

2 Q. Well, we've already talked about the lessons from

3 Ocone, the lessons that without a clean head, you can't inspect

10:02:52 4 the head visually to determine if you have nozzle cracking?

5 A. Correct.

10:02:57 6 Q. And without a pristine head, a visual inspection isn't

10:03:06 7 going to work?

10:03:08 8 A. Correct.

10:03:11 9 Q. You knew that Davis-Besse had a flange leakage problem

10:03:15 10 which made the head not pristine?

10:03:20 11 A. That's correct.

10:03:22 12 Q. And then you signed off on a justification to not

10:03:29 13 inspect the head if the plant tripped and went down?

14 A. That's correct.

10:03:34 15 Q. Now, I mean, let's just think through that scenario. A

10:03:39 16 tornado comes along, the plant trips, it goes to Mode 5. You

10:03:45 17 have to do a head inspection. They go in, attempt to visually

10:03:52 18 inspect, and discover lots of boron. What happens next?

10:03:57 19 A. Where the boron would be located, if it would obscure

20 some drives, at that point we would have had to go in and pull

21 those drives off and actually do an inspection then. That

22 would probably have necessitated actually removing the reactor

10:04:17 23 head from the reactor, putting it on service structure work

24 stand so you could actually start pulling off those drives, and

10:04:26 25 then do an NDE of those nozzles.

10:04:30 1 Q. And what would an NDE consist of? Can you just
2 describe for the jury how that would have been conducted at the
3 time?

10:04:38 4 A. That's why I said you'd pull the drives off, because the
5 drive mechanism would then -- by pulling it off, would allow you
10:04:45 6 to have access to the diameter of the nozzle and you'd be able
10:04:50 7 to run a probe down through that and look for cracking.

10:04:55 8 Q. Okay. A probe. At the time do you know which
10:04:59 9 technology would have been used?

10 10 A. I think we were using eddy current, but I'm not 100
10:05:05 11 percent positive.

10:05:09 12 Q. Would all of that have been time consuming?

10:05:13 13 A. Oh, absolutely.

14 Q. And expensive?

15 A. Absolutely.

10:05:17 16 Q. And that's why this recommendation was written?

10:05:22 17 A. The recommendation was to ask the question, yes, to see
10:05:27 18 -- I wouldn't say it's because it was time consuming. It was
10:05:31 19 asking the question, should we do the inspection?

10:05:33 20 Q. To ask the question whether we should do the inspection;
21 and to answer it: No, we shouldn't?

10:05:39 22 A. Well, that's what the answer was in the recommendation,
23 that's correct.

10:06:29 24 MR. POOLE: Government's Exhibit 28 was another one
25 Counsel asked you about, previously admitted. I'm going to

10:06:38 1 display a page of that exhibit, Your Honor.

10:06:38 2 BY MR. POOLE:

3 Q. It's another trip report, isn't it?

4 A. Yes.

5 Q. From Prasoon Goyal?

10:06:53 6 A. That's correct.

7 Q. It says: We need service structure access to clean and

8 inspect the head. (Note: Davis-Besse does not have service

9 structure holes.)

10:07:13 10 I believe your testimony was that you already knew

10:07:15 11 that Davis-Besse needed access ports.

10:07:18 12 A. That's correct.

10:07:20 13 Q. But --

10:07:21 14 A. I'm sorry, the actual statement is Davis-Besse does not

15 have them. I knew that.

10:07:28 16 Q. Does not have them. All right. My recollection --

17 A. That's what you asked me, right?

10:07:35 18 Q. No, my question is about the testimony you gave

19 yesterday.

10:07:38 20 A. Okay.

21 Q. My recollection of your testimony, correct me if I'm

22 wrong, is that you said that you already knew that Davis-Besse

10:07:46 23 needed these openings, these access ports.

24 A. That's correct. I was well aware we did not have

10:07:54 25 openings.

1 Q. And that they were needed?

10:07:57 2 A. We had a modification out for them, yes.

3 Q. That's the same modification that was postponed to the
4 14th refueling outage?

5 A. That's correct.

10:08:09 6 Q. There's an element of warning in this, isn't there? We
10:08:15 7 need access to clean and inspect the head and we don't have
8 service structure holes. Wouldn't you call that a warning?

9 A. Today I would. But at the time I didn't take it that
10 way.

10:08:26 11 Q. It wasn't the first warning that Prasoon Goyal sent, was
10:08:31 12 it?

13 A. No. Prasoon was a very strong advocate for cutting the
14 holes in the head -- I'm sorry, in the service structure apron.

10:08:39 15 Q. I take it nobody was in favor of cutting holes in the
10:08:43 16 head?

17 A. Not until we found the hole and we wanted to cut it out.

18 Q. Yes. And he goes on with some other information that
10:08:53 19 you had already seen in previous e-mails and messages, leaking
10:08:58 20 nozzle may produce very little boric acid; the head needs to be
10:09:03 21 clean; the inspection needs a procedure, we don't have one.

22 Now, this whole service structure thing, the lack of access,
10:09:11 23 that's a design issue, isn't it?

10:09:13 24 A. That's correct. The actual installation of the holes
25 would be a modification that would have to be approved through

10:09:21 1 design.

10:09:23 2 Q. And the limitation on access to the reactor vessel head
10:09:29 3 was a result of the original design?

10:09:33 4 A. That's correct.

10:09:35 5 Q. So this is a design issue, isn't it?

10:09:40 6 A. I think you could put it that way, but I would also
10:09:44 7 think that it's a plant issue as well. I think there was more
10:09:49 8 people than design that were concerned about being able to do a
9 good job.

10 Q. Sure. The people who did the inspections were
11 concerned about it, weren't they?

12 A. Absolutely.

10:10:00 13 Q. So you, as design manager, read this warning, but did
14 not act on it?

15 A. That's correct.

10:10:31 16 Q. All right. Moving to Government's Exhibit 36.

10:10:36 17 MR. POOLE: Previously admitted, Your Honor. I'll
10:10:39 18 display it to the jury.

10:10:44 19 BY MR. POOLE:

10:10:44 20 Q. In an August 11, 2001 e-mail from Prasoon Goyal about
21 the response to Bulletin 2001-01 -- do you recognize that?

22 A. Correct.

10:11:15 23 Q. I've enlarged the third paragraph which says: It was
10:11:19 24 pointed out that we cannot clean our head through the mouse
10:11:22 25 holes.

10:11:23 1 Again, this is as a result of a design of the
2 reactor vessel head; is it not?
3 A. Correct.

10:11:31 4 Q. It's another warning; is it not?
10:11:34 5 A. Yes.

10:11:36 6 Q. And now it's a warning in the context of Bulletin
10:11:42 7 2001-01; isn't that true?
10:11:43 8 A. Yes.

10:11:44 9 Q. Bulletin 2001-01 required Davis-Besse to report on
10:11:50 10 inspections that had been done?
11 A. That's correct.

10:11:53 12 Q. They wanted to know that the plant was safe to operate?
10:11:59 13 A. I think that's the general intent of the bulletin, yes.

10:12:03 14 Q. In order to know if a plant was safe to operate, they
10:12:07 15 needed to know whether inspections had been done?
16 A. Correct.

10:12:12 17 Q. They needed to know whether the inspections that had
10:12:15 18 been done were capable of finding boric acid indicative of a
19 nozzle leak?
20 A. Correct.

10:12:26 21 Q. And here's a warning: We cannot clean our head through
22 mouse holes.
10:12:36 23 But you didn't act on that?
24 A. No.

10:13:04 25 MR. POOLE: Next, Government's Exhibit 40,

1 previously admitted, Your Honor. And we'll display it for the
2 jury.

10:13:11 3 THE COURT: Yes.

10:13:15 4 BY MR. POOLE:

10:13:15 5 Q. Another e-mail from Prasoon Goyal?

10:13:19 6 A. That's correct.

10:13:27 7 Q. This one says: Is it possible to go back to '98; that
8 is when a good head exam was done with no nozzle leakage
9 (meaning not taking any credit for 2000 inspection).

10:13:45 10 And this e-mail went to you, didn't it?

11 A. I think it was actually to Mr. Fyfitch at Framatome. I
12 was CCed on it.

13 Q. It was copied to you?

10:14:03 14 A. That's correct.

10:14:08 15 Q. Now, we're talking about not crediting the 2000
10:14:11 16 inspection because it wasn't a good inspection?

17 A. Correct.

10:14:20 18 Q. This was August 17, 2001?

19 A. I believe that's correct. I only have the one section,
10:14:27 20 though.

10:14:35 21 Q. I'll give you the page back.

22 A. Yes, the 17th.

10:14:38 23 Q. So that's two or three weeks before the first bulletin
10:14:41 24 was signed off on by you and submitted to the Nuclear Regulatory
10:14:47 25 Commission?

10:14:47 1 A. That's correct.

10:14:49 2 Q. I'd call that a warning, wouldn't you?

10:14:53 3 A. You could call it a warning. I didn't view that at the
4 time. I wish I had.

5 Q. Certainly a clear indication that the 2000 inspection
6 was not a reliable inspection?

10:15:05 7 A. Right. We knew that because of the five leaking flanges
8 that we repaired.

10:15:23 9 Q. 2731 did not state that it wasn't a reliable inspection?

10 A. No, it didn't.

10:15:33 11 Q. In fact, it took credit for that inspection?

12 A. Portions of it, yes.

10:15:47 13 Q. But your statement yesterday when you were asked about
14 this is you didn't think there was a problem with the 2000
15 inspection?

10:15:56 16 A. I don't recall that.

10:15:59 17 Q. So anyway, your testimony here today is that you knew
10:16:03 18 the 2000 inspection wasn't a thorough, 100 percent inspection
19 because you knew there was flange leakage?

10:16:11 20 A. That's correct.

21 Q. And you knew it already in mid August of 2001?

10:16:16 22 A. That's correct.

10:16:21 23 MR. POOLE: Your Honor, may I suggest this is an
10:16:23 24 appropriate time for a break?

10:16:26 25 THE COURT: All right. Ladies and gentlemen,

1 we'll now take our mid-morning break, 15 minutes, until
10:16:46 2 approximately 10:30. Please remember my previous admonitions
3 not to discuss this case among yourselves nor with anyone else
10:16:54 4 nor permit anyone to discuss it with you. And do not make up
10:16:57 5 your minds on the ultimate issues you will be asked to decide at
10:17:01 6 the end of the case. Enjoy your break.

10:17:35 7 (Recess taken.)

10:36:38 8 THE COURT: Please continue, Mr. Poole.

10:36:45 9 BY MR. POOLE:

10:36:46 10 Q. Mr. Geisen, when we left off, I think we began
10:36:51 11 discussing --

12 THE COURT: Mr. Poole, I have to interrupt you
10:36:54 13 again. I apologize.

10:39:08 14 (A short break is taken.)

10:39:20 15 THE COURT: Thank you. Sorry for the
10:39:23 16 interruption.

10:39:24 17 MR. POOLE: Not a problem.

10:39:26 18 BY MR. POOLE:

19 Q. Mr. Geisen, before we took our break, we discussed a
20 series of e-mails and trip reports that were sent to you before
10:39:40 21 the response to Bulletin 2001-01 was sent to the NRC. Do you
22 remember that?

23 A. Yes.

10:39:51 24 Q. Now, you were one of the signers of the greensheet, the
10:40:02 25 review and approval report, were you not?

10:40:05 1 A. Yes.

10:40:07 2 MR. POOLE: And that's Government's Exhibit 59.

3 And, Your Honor, we'll display a page of that to the jury if the

4 Court permits.

10:40:19 5 THE COURT: Very good.

10:40:45 6 MR. POOLE: Does the Court and the witness and the

10:40:47 7 jurors have that exhibit up?

8 THE COURT: I believe so.

10:40:52 9 THE WITNESS: 40?

10:40:54 10 MR. POOLE: That's the one we were at before the

10:40:56 11 break. At this time I'll display a page from Government's

10:41:00 12 Exhibit 59.

10:41:00 13 BY MR. POOLE:

10:41:03 14 Q. Now, is that the page you signed off on the greensheet

15 for the first response to Bulletin 2001-01?

10:41:11 16 A. Yes, it is.

17 Q. It contains your initials next to Design Engineering

18 Manager?

19 A. That's correct.

10:41:21 20 Q. I'll enlarge block 14 for the jury.

21 And are those your initials also next to S. P.

10:41:39 22 Moffitt?

23 A. That's correct, D.C.G. for S.P.M.

10:41:45 24 Q. So you signed on behalf of the Director of Technical

25 Services?

1 A. That's correct.

10:42:01 2 Q. Your testimony yesterday when asked about signing it,
10:42:05 3 you thought it was your responsibility to make sure the right
4 people reviewed it?

5 A. Correct.

6 Q. People with knowledge. And today you added something
10:42:18 7 to that, you said you reviewed it to see if it sounds right to
8 me?

10:42:25 9 A. That's correct.

10:42:30 10 Q. Sounds right. Have you ever reviewed the instructions
10:42:37 11 on the back of the greensheet?

12 A. Yes, I have.

10:42:43 13 Q. Let's take a look at those now. Let's see, we were
14 looking at your signature in Block 14.

15 A. Correct.

10:42:54 16 Q. Do you recognize this as the instructions on the back of
10:42:58 17 the greensheet?

10:42:59 18 A. Correct.

10:43:01 19 Q. I'll enlarge the instructions for Block 14. It says:
10:43:07 20 Review and approval. Is that correct?

10:43:09 21 A. Correct.

22 Q. Initiator checks and/or enters the desired viewer(s).
23 The technical accuracy of a response to the NRC is the
24 responsibility of the director and management individual
25 assigned the action.

10:43:33 1 So somebody has responsibility for technical
2 accuracy?

3 A. Correct.

4 Q. That's the thrust of this. Now, you signed as Design
10:43:45 5 Engineering Manager. Were you the responsible person?

10:43:49 6 A. Yes. I was part of management.

7 Q. So you were responsible for technical accuracy?

8 A. Yes.

10:43:57 9 Q. Now, if you're responsible for technical accuracy, is
10:44:06 10 "sounds right to me" the standard?

10:44:13 11 A. No.

12 Q. You have an obligation to satisfy yourself that it's
10:44:18 13 accurate?

14 A. That's correct.

10:44:20 15 Q. Did you do that for 2731?

16 A. Yes, I did.

10:44:31 17 Q. All right. I'm going to hand you Government's Exhibit
10:44:45 18 60, which is 2731.

10:44:51 19 MR. POOLE: Previously admitted, Your Honor.

10:44:51 20 BY MR. POOLE:

21 Q. And do you recognize that as the bulletin that you
10:44:56 22 signed off on?

10:45:01 23 A. Yes.

10:45:03 24 Q. Now, I've tabbed the page that includes 1D, which is the
10:45:12 25 question that the bulletin posed about past inspections. Do you

1 see that?

2 A. Uh-huh.

10:45:18 3 Q. It asks for a description of impediments?

10:45:26 4 A. Correct.

10:45:27 5 Q. Now --

6 A. I'm sorry; I didn't realize that was a question.

7 Q. Pardon?

10:45:33 8 A. I'm sorry for the pause. I didn't realize that was a
9 question.

10 Q. So do you see anything in there that discusses the fact
11 that boric acid from flanges is an impediment to inspection?

12 A. No.

10:45:53 13 Q. Do you see any discussion in there about the proposal to
14 cut access holes in the service structure to permit better
10:46:05 15 inspections?

16 A. No.

10:46:07 17 Q. Is there anything in there that says that the difficult
10:46:14 18 access through the weep holes is an impediment to inspection?

19 A. No.

10:46:20 20 Q. You knew all those things; you've already said that, and
21 you signed off on the greensheet, didn't you?

10:46:29 22 A. I signed -- yes, I signed off on the greensheet. I'm
10:46:34 23 sorry; it was a multiple-part question there.

24 Q. I'll break it up. So you signed off on the greensheet.
25 And you knew that boric acid from flanges was an impediment to

1 inspection, and it doesn't say that there?

10:46:51 2 A. That's correct.

10:46:52 3 Q. You knew that the limited access available through the
4 mouse holes was an impediment, and 2731 does not say that?

5 A. That's correct; it does not say that, only limited
6 access.

7 Q. And there's no discussion at all about the proposal to
10:47:17 8 cut access ports into the service structure?

9 A. No, it doesn't.

10:47:53 10 Q. I'm going to hand you a document that has not been
10:47:56 11 previously admitted. It's Government's Exhibit 69. Take a
12 minute to read over it. Then I'm going to ask you some
10:48:12 13 questions.

10:48:35 14 Without stating what the contents are, would you
15 tell the Court what that document is?

10:48:43 16 A. It appears to be an e-mail from Dale Miller to --

10:48:52 17 Q. To a bunch of people?

18 A. A lot of people.

19 Q. One of which is you?

10:48:56 20 A. Yeah. It looks like, two to a line, is probably a
21 little over a dozen people representing several different
22 plants, maybe a dozen or dozen and a half plants.

10:49:09 23 Q. Let me help you out.

24 A. Then CCed to myself and probably, it looks like, about
25 10 other people.

1 Q. And the subject is CRD Nozzle Bulletin 2001-01 Recent
10:49:26 2 Developments-Urgent.

10:49:30 3 MR. POOLE: Your Honor, we move that document into
10:49:32 4 evidence.

10:49:33 5 MR. WISE: No objection.

10:49:35 6 THE COURT: It will be admitted. It may be
7 displayed to the jury.

10:49:58 8 BY MR. POOLE:

10:49:58 9 Q. Mr. Geisen, do you recognize this e-mail?

10 A. I can't say that I do, but it was obviously -- I was
11 obviously CCed on it.

12 Q. Do you remember the events at that time? This e-mail
13 says: This morning the CNO of FENOC was contacted by Brian
14 Sheron.

15 Do you recall the contact with Brian Sheron?

10:50:20 16 A. Yes. This is regarding that phone call that Bob
10:50:24 17 Saunders got from Brian Sheron on the 28th of September.

10:50:29 18 Q. And it says: The caller -- that's Brian Sheron -- was
19 strongly suggesting that Davis-Besse reconsider our response to
20 the bulletin and consider shutting down by the end of the year
21 and perform an inspection of the reactor vessel head CRD
22 nozzles.

10:50:46 23 A. Correct. That's what it says.

10:50:50 24 Q. And this e-mail, this urgent e-mail that went out to
10:50:58 25 people, everybody at the plant expressed concern about that

10:51:06 1 development, didn't they?

10:51:08 2 A. Yeah. I don't think anyone expected to get the phone
3 call from Dr. Sheron.

10:51:17 4 Q. Now, the consequence of shutting down by the end of the
5 year, if Davis-Besse was to do that, would be pretty
10:51:28 6 significant; is that a fair statement?

10:51:30 7 A. Yes.

10:51:31 8 Q. For one thing, to shut down and inspect we'd have to go
9 through the steps that you and I were discussing a minute ago;
10 isn't that right?

11 A. Yes, extensive disassembly of the head.

12 Q. Shut down the plant, depressurize, cool it off, remove
10:51:48 13 the reactor vessel head, put it on a stand?

14 A. Correct.

10:51:52 15 Q. Do a visual inspection, which you knew would be impeded
10:51:57 16 by boron on the head, necessitating further inspection by NDE
10:52:04 17 methods. Is that all accurate?

10:52:09 18 A. Fairly accurate, yes.

10:52:17 19 Q. When a nuclear power plant shuts down and goes offline
10:52:21 20 and isn't generating electricity, what happens to the consumer?
21 Do they still get electricity?

22 A. Yes, but it -- it just depends on what time of the year
23 they're coming off. Most of the nuclear plants come offline in
24 the spring and fall when demand is at the lowest because you
25 don't have high air-conditioning loads in the summer or high

10:52:48 1 heating loads in the winter. If there is a demand, they end up
2 starting peaker units to provide enough power for the grid.
3 The consumer usually doesn't see a problem.

10:53:06 4 Q. Is that because they buy electricity from other people?

5 A. Either buy electricity or they may start, like I say,
6 start peaker units. That's really left up to what they call
7 load dispatchers that work the grid because it may be cheaper
8 for them to buy it than it is for us to make it if it's, like, a
10:53:27 9 gas turbine unit or something like that.

10 Q. Can you tell us what a peaker unit is?

11 A. I'm sorry. A peaker unit is units that generate
10:53:39 12 electricity. They may be gas turbine; it could be coal-fired;
10:53:43 13 could be oil-fired. It could even be hydroelectric, but
10:53:48 14 usually hydroelectric is base loaded, and we don't have any of
15 that up here anyways. But the reason they're considered peaker
10:53:55 16 units is because they're not as efficient as other units;
17 they're more costly to run; their cost per megawatt generated is
18 a lot higher. So they don't run them except for when you've got
10:54:07 19 a peak demand, then you put it on then.

10:54:10 20 Q. So then while the plant is down, FENOC is either buying
10:54:17 21 electricity from somewhere else or running expensive peaker
10:54:23 22 units to replace this electricity that's not being generated at
23 Davis-Besse?

24 A. Correct. Usually that's the case. Unless, like I've
10:54:31 25 said, you've got a low demand period.

1 Q. All right. Would December and January of 2001 be low
10:54:40 2 demand periods in Ohio?

3 A. No, in northwest Ohio that's considered very high demand
4 because we historically have a lot of electrical heating loads;
10:54:51 5 there's a lot of homes that have electric heat.

10:54:54 6 Q. So it's an expensive time to shut down?

7 A. Yes.

10:55:06 8 Q. By that time there was an -- it was an established fact
9 in the industry that plants like Davis-Besse that were doing
10:55:16 10 inspections were finding cracks; is that a fair statement?

10:55:22 11 A. At the time we got this bulletin there had been four
10:55:30 12 similar plants; three at Oconee and the Arkansas plant. All of
13 those had found leaks from axial cracks, that's correct.

14 Q. We saw that Oconee, which had many nozzles -- I think
10:55:44 15 you said 60 from the same heat as the top five at Davis-Besse,
16 they had nine cracked nozzles on a single head?

10:55:53 17 A. That's correct.

10:56:02 18 Q. So people at Davis-Besse knew when they shut down there
19 was a pretty good chance they were going to find cracks?

20 A. I don't know that everyone was thinking that way, but
21 you could draw that conclusion. I don't want to put -- you
22 asked me what people at Davis-Besse were thinking, and I don't
10:56:19 23 want to answer for everybody.

24 Q. Okay. Well, you certainly knew because you were
10:56:23 25 involved on the industry committees and received trip reports

10:56:28 1 and e-mails from Prasoon Goyal, who was knowledgeable; you
2 certainly knew that?

10:56:34 3 A. I certainly knew we were susceptible to cracking,
10:56:38 4 absolutely.

5 Q. Susceptible to cracking. So the plant shuts down,
10:56:46 6 disassembles the head, does an inspection, and now they find a
7 crack. What does the plant do about it when they find a crack?

8 A. Well, at that time the accepted repair mechanism or
10:57:00 9 methodology was to machine out the drive and start at the bottom
10 machining out until you got above where the crack was, which was
10:57:10 11 usually at the J weld. If it was actually a crack below the J
12 weld, you wouldn't do any repair it to; you'd just monitor it.
10:57:19 13 But if it was a crack in the J weld area, then you would grind
14 that out and/or machine it out, then you end up going back in
15 and rewelding it, essentially a new J weld. And then there was
16 a stress relaxation process called the temper bead relaxation
10:57:41 17 process.

10:57:42 18 Q. Okay.

10:57:43 19 A. That's the stuff that the Steering Committee was working
20 on.

10:57:48 21 Q. Let's just show the jury where this occurred.
10:57:52 22 Government's Exhibit 125 is the sort of 3D cross-sectional model
10:58:00 23 of the reactor vessel head. Where would the repair activity
24 occur?

10:58:04 25 A. Okay. What you'd end up -- I'll yell. What you'd end

1 up doing is you actually put a rig underneath that would machine
2 out this metal, and it would keep machining it out until it got
10:58:23 3 above the crack, and then you would reweld this in a circular --
4 you'd reweld this using a weld rig that would just give passes
5 to basically reestablish the J weld. You don't completely
10:58:44 6 reestablish the drive all the way down; you just now, instead of
7 having something sticking out, it would be flush with the bottom
8 of the head, inside the head.

9 Q. Now, what's -- the reactor vessel head is taken off the
10:59:07 10 reactor and put on the stand. And at that point it's cool; is
11 that correct? It's not 600 degrees?

12 A. No, you have to have a cool-down before you can even
10:59:21 13 work on it to remove the studs that hold it together.

14 Q. What's the environment like under the reactor head?

10:59:30 15 A. With it installed or -- under what condition? I'm
10:59:35 16 sorry.

17 Q. When it's on the stand and cooled.

18 A. When it's on the stand and cooled, it's inhospitable
10:59:43 19 because it's been exposed to so much radiation for so long that
20 it's a very high dose area. It's an exclusionary. There's no
21 one allowed underneath there.

10:59:55 22 Q. So you can't put a human being underneath the reactor
10:59:59 23 vessel head?

24 A. Not without taking extraordinary measures.

25 Q. You described the rig that was used to do machining and

11:00:07

1 welding.

2 A. That's what the Steering Committee was actually
3 designing in the spring of 2001 because when Oconee 3 had to do
4 their repairs, they actually had to put a person underneath
5 there, and they had to put them in a lead box to shield them.
6 Then they had to do it manually. That's why they ended up with
7 such an extensive dose expenditure for that outage.

11:00:29

11:00:33

8 Q. If Davis-Besse had shut down in the fall of 2001, found
9 cracks, and then sought to repair them, what technology would
10 then have been available?

11:00:47

11:00:52

11:00:55

11 A. By then they -- robotics had been developed. I think
12 they were available by mid summer. Framatome was the
13 fabricator.

11:00:59

14 Q. And that robotic equipment was in pretty high demand,
15 was it not?

11:01:06

11:01:11

16 A. Well, it was built by or funded by the Steering
17 Committee. So it was only to be used by B&W plants.

11:01:16

18 Q. Right.

19 A. Right.

11:01:22

20 Q. But wasn't it the case during the fall of 2001 that if
21 you wanted to use that equipment, you had to stand in line, or
22 you had to schedule it at a time that it was available?

23 A. We would have had to schedule it. I can't sit here
24 today and say that we would have been standing in line. I
25 don't know.

11:01:34

11:01:37 1 Q. But whether or not it was available at the moment you
2 needed it, it is fair to say this is a time-consuming and
11:01:44 3 expensive process?

11:01:45 4 A. Absolutely.

11:01:52 5 Q. When this e-mail came out, Government's Exhibit 69, that
11:01:56 6 was the concern, wasn't it?

11:02:03 7 A. I didn't take that from the writing here. This was not
11:02:07 8 directed at just the B&W plants. This was, if you look at the
11:02:12 9 "to" line, it goes to a lot of non-B&W plants. The question
10 was, we were trying to get -- I think Mr. Miller was trying to
11 set up a teleconference to specifically talk to all of the high
11:02:27 12 susceptibility plants, which those are the plants per the MRP
13 were within 5 EFY of Oconee 3. So it would be incorrect for
14 me to state that that was just the B&W plants. There were
15 other plants in that category.

11:02:45 16 Q. That's a fair statement. But the concern -- were you
17 concerned if the plant shut down prior to the end of the year
18 that the plant would have these kind of problems?

11:03:02 19 A. I'm sorry, what problems? Tooling?

20 Q. Undergoing the time and expense of inspection and
11:03:12 21 possibly repair of cracked nozzles at a time when it was
11:03:18 22 inexpensive -- expensive to be offline and necessitating
11:03:23 23 expensive work to be done?

11:03:26 24 A. If you have to do it, you have to do it.

11:03:37 25 Q. But, in fact, Davis-Besse's response was to try to

11:03:42 1 persuade the Nuclear Regulatory Commission that they shouldn't
2 have to shut down by the end of the year?

11:03:48 3 A. That's correct. We thought we would have been safe to
11:03:51 4 operate until our scheduled outage, which was the first week in
5 April of 2002.

11:04:09 6 Q. I'm going to show the witness Government's Exhibit 65,
11:04:13 7 which I believe was previously admitted.

11:04:57 8 Do you recognize Government's Exhibit 65?

9 A. Yeah, this is the Piedmont report for Mr. Gibbs that he
11:05:04 10 testified to earlier.

11:05:09 11 MR. POOLE: Your Honor, we're going to display that
12 to the jury.

11:05:27 13 BY MR. POOLE:

11:05:27 14 Q. Paragraph 1 of that letter discusses CRDM inspection and
15 repair. Remind me, did you tell the jury when you received
16 this document?

11:05:45 17 A. No, I didn't recall when I had gotten it.

11:05:50 18 Q. So is it your testimony sitting here today that you
19 don't recall ever receiving this document?

20 A. No, I know I received it; I just don't recall when.

21 Q. Okay. Did you receive it in the fall of 2001?

22 A. Sometime in the fall of 2001, correct.

23 Q. Is there any reason -- I mean you heard his testimony
24 that he left it on your desk. Is there any reason to believe
25 you didn't see it within a couple days of his having written it?

1 A. I probably did not as a function of what else I had
2 going on during that time frame since we were in the preps for
11:06:28 3 our INPO evaluation. It was probably not right, but it
11:06:36 4 probably did sit.

5 Q. For how long? A week, two weeks?

6 A. Probably quite a while.

11:06:49 7 Q. When you did read it, you saw that it said on completion
11:06:53 8 of 12 RFO the reactor vessel head had boric acid deposits of
11:06:59 9 considerable depth?

11:07:03 10 A. Correct, I guess the tail end of that first paragraph.

11:07:14 11 Q. The next sentence, the first sentence in the next
12 paragraph contains a warning, doesn't it? It tells you that
13 that last bulletin response, the one that you signed off on, had
14 incorrect information; is that fair?

15 A. I certain --

16 MR. WISE: Objection.

17 A. I certainly wish I had taken it that way, yes.

18 BY MR. POOLE:

19 Q. It said Davis-Besse stated in its response to Bulletin
20 2001-01 that the top head visual inspections would not be
11:07:49 21 compromised due to any preexisting boric acid crystal deposits.
22 It goes on: Given previous experience in removing boric acid
11:07:57 23 deposits from the head, the likely need to remove these deposits
24 at the center top head by mechanical means, the severely
11:08:05 25 restricted access allowed by the service structure mouse holes

1 for mechanical cleaning, the industry experience of Duke Power
2 that clearly emphasizes the need for good access to the head for
3 cleaning and inspection, and the NRC commitments and inspection
11:08:23 4 requirements for the visual inspection, the most prudent course
5 of action to avoid outage delays would be to access holes in the
6 Reactor Service Structure as soon as possible in the 13th
11:08:37 7 refueling outage.

11:08:43 8 What did you do when you read that language?

9 A. Nothing.

11:08:48 10 Q. And did it cause you concern that you had signed off on
11:08:57 11 a letter to the Nuclear Regulatory Commission, whose technical
11:09:03 12 accuracy you were responsible for, that contained inaccurate
13 information about inspections -- future inspections not being
11:09:14 14 compromised?

15 MR. WISE: Objection to the form of the question.

11:09:29 16 THE COURT: Overruled. You may answer if you can.

11:09:32 17 THE WITNESS: I'm going to have to have him restate
18 the question.

11:09:39 19 BY MR. POOLE:

11:09:39 20 Q. All right. This -- I'll bring it up.

11:09:48 21 You said you signed off on the bulletin response,
11:09:53 22 right?

23 A. That's correct.

24 Q. You said you were responsible for its technical
11:09:57 25 accuracy?

11:09:58 1 A. That's correct.

11:10:00 2 Q. This letter told you that there was a bunch of boric
3 acid left on the head that would preclude, at least in those
11:10:10 4 areas, a visual inspection; is that correct?

11:10:15 5 A. That's correct.

11:10:22 6 Q. It points out that the bulletin response you signed off
7 on said that inspections would not be compromised; is that
11:10:30 8 correct?

11:10:30 9 A. That's correct.

11:10:31 10 Q. And you did nothing to solve that problem?

11:10:35 11 A. Well, no, because we viewed it as, at the time, if we
12 had boric acid or crystal deposits on something, we couldn't
13 inspect it, like I mentioned earlier, we would immediately go
14 into an NDE. So we viewed it as we wouldn't have trouble doing
15 an inspection. Mr. Gibbs wrote this for 13 RFO.

16 Did that answer your question? I'm not certain.
17 My answer is probably just as convoluted as the original
18 question.

19 Q. It was understandable.

20 A. Okay.

11:11:16 21 Q. Are you familiar with the requirements of regulation
22 50.9, the NRC regulation about accuracy and completeness?

11:11:28 23 A. Yes.

11:11:35 24 Q. You understand when a licensee makes a submittal to the
11:11:39 25 NRC, it's required to be accurate and complete?

1 A. That's correct.

11:11:44 2 Q. When bulletin -- I'm sorry, when the response, 2731, was
11:11:51 3 sent to the NRC, it said the visual inspections would not be
11:11:58 4 compromised, didn't it?

5 A. That's correct.

11:12:01 6 Q. And you thought that was okay because you could always
7 back it up with another kind of inspection?

11:12:11 8 A. That's correct.

11:12:14 9 Q. Is that accurate and complete if it doesn't contain the
10 information that you already knew?

11:12:19 11 A. Based on what I know today, no, I'd have to say no.

12 Q. And you knew when you read this memo that visual
11:12:27 13 inspection alone was not going to be sufficient?

11:12:31 14 A. Correct.

11:13:46 15 MR. POOLE: At this time we would like to display
16 to the jury Government's Exhibit 78, Mr. Miller's notes which
17 have been admitted.

18 THE COURT: They have, and you may.

11:14:06 19 BY MR. POOLE:

11:14:06 20 Q. Do you recall Mr. Wise had asked you some questions
21 about these notes?

22 A. Yes, I do.

11:14:15 23 Q. I've enlarged the first part that says, D.C.G. 100
11:14:21 24 percent inspection of head, some areas precluded from inspection
25 due to flange leakage, definite signs of boron flow from

11:14:34 1 leakage. I'll stop there for now.

11:14:38 2 You said that you made these statements based on
3 information that you got from Andrew Siemaszko?

11:14:50 4 MR. WISE: Objection. That's not what he said.

5 BY MR. POOLE:

6 Q. Correct me if that's not what you said.

7 A. I believe I said I wasn't sure where I got that
8 information from, but that it probably came from Plant
9 Engineering and possibly Andrew Siemaszko. I really don't -- I
11:15:02 9 didn't take personal notes of the meeting, so I have to go off
11:15:11 10 of Mr. Miller's notes as to what was said.

11:15:21 12 Q. And it says videotapes-reviewed 12, 11, 10 RFO videos.

11:15:32 13 Now, that sounds like there's been a video
11:15:36 14 inspection already on that date. Is that what happened?

15 A. My understanding is yes, we had reviewed the videotapes.
16 When I say "we", that Plant Engineering had reviewed the
17 videotapes in writing up their response to 2731.

11:15:57 18 Q. Okay. And 2731, in fact, represented that there had
19 been a view of the '98 and 2000 videotape, didn't it?

20 A. That's correct.

11:16:16 21 Q. It was on this phone call that Allen Hiser asked for a
11:16:22 22 nozzle-by-nozzle summary of the inspections?

11:16:25 23 A. I believe that's correct.

11:16:27 24 Q. Well, that's the next item in the outline, isn't it?

25 A. Correct. And that's why I say that. It's got --

11:16:37 1 A.I.H. I'm assuming is Mr. Hiser.

2 Q. And you recall that you testified that that became an

11:16:43 3 item that you were responsible for?

4 A. Correct.

11:16:47 5 Q. The nozzle-by-nozzle summary?

11:16:49 6 A. I was responsible for coordinating, putting that

7 together, yes, that's correct.

8 Q. That's right. You've already testified that Andrew

9 Siemaszko prepared a nozzle-by-nozzle summary and you reviewed

10 his work?

11:17:05 11 A. I reviewed how -- his methodology is really what I

12 believe what I testified to. It would be -- it would be an

11:17:17 13 exaggeration for me at this point to say that I did a

14 nozzle-by-nozzle review of his work.

11:17:24 15 Q. Right. That wasn't the question I asked.

11:17:27 16 A. Okay. I just wanted to clarify.

11:18:12 17 Q. All right. You testified about a meeting with the

11:18:15 18 technical assistants at -- of the commissioners at the Nuclear

19 Regulatory Commission.

20 A. That's correct.

11:18:49 21 MR. POOLE: Your Honor, Government's Exhibit 87 has

22 been admitted, and we'd like to display a page for the jury.

11:19:00 23 THE COURT: Yes, that's fine. You did say 87?

11:19:05 24 MR. POOLE: 87.

11:19:07 25 THE COURT: Very good.

11:19:10 1 BY MR. POOLE:

2 Q. Do you recall being questioned about this exhibit by Mr.

3 Wise?

4 A. Yes.

5 Q. And you testified that when you talked about CRDM

11:19:21 6 penetrations being verified, verified to be free from

7 popcorn-type boron deposits using video recordings, that you

8 were relying on others?

9 A. That's correct.

11:19:33 10 Q. And who, again, were you relying on at that point?

11 A. Andrew Siemaszko.

11:19:45 12 Q. And so he's the one that told you that he verified that

13 all penetrations were free from popcorn in one video or the

14 other?

11:19:59 15 A. I don't know if those were the exact words he used, but

11:20:04 16 that's the essence, yes.

11:20:09 17 Q. Now, for an engineer, words are important, aren't they?

18 A. I think so. I think words are important to everybody.

11:20:16 19 Q. If you say that you verified a fact to be true, is that

20 a strong claim or a weak claim?

21 A. I think it's fairly strong.

11:20:28 22 Q. And you made the representation that the penetrations

23 were verified to be free from popcorn on the date of this

24 presentation, which was October 11, 2001?

11:20:49 25 A. That's correct.

11:20:51 1 Q. But you told the jury when Mr. Wise was questioning you
11:20:57 2 that at the time you made this representation, Andr w Siemaszko
3 hadn't finished his nozzle-by-nozzle review of the tapes?

4 A. That's correct.

11:21:08 5 Q. But you went right ahead with this strong claim that the
6 head had been verified to be free from popcorn deposit, didn't
7 you?

11:21:18 8 A. That's correct.

11:21:25 9 Q. Now, you described a time that came after this technical
11:21:34 10 assistants briefing -- let me back up. I have another question
11 on this one.

11:22:04 12 No, I don't. I was wrong.

13 So you described in your testimony that there came
14 a time when you find out -- found out that those inspections in
15 '98 and 2000 weren't as good as you thought they were?

16 A. That's correct.

11:22:30 17 Q. In fact, the exact words you used were those inspections
11:22:35 18 were not what you originally intended?

19 A. I may have used those words.

11:22:44 20 Q. And what you were told at that time was that a
11:22:51 21 substantial number, more than a handful, of nozzles were not
11:22:57 22 viewed in 2000 and in '98?

11:23:01 23 A. That's correct.

11:23:04 24 Q. And you told that to Mr. Moffitt?

25 A. That's correct.

11:23:11 1 Q. And there was a concern about correcting the information
2 that had been sent to the Nuclear Regulatory Commission?

11:23:19 3 A. Yes.

11:23:30 4 Q. You said you didn't question the results Andrew
11:23:33 5 Siemaszko had provided to you in the past?

11:23:37 6 A. No.

11:23:43 7 Q. And this -- despite the fact that there had been a
11:23:49 8 previous review of videotapes prior to 2731 being sent out?

9 A. Correct.

11:23:56 10 Q. You say this despite the fact that Andrew Siemaszko is
11 the individual responsible for the cleaning who didn't complete
12 it?

11:24:06 13 A. Okay.

11:24:09 14 Q. Is this a person whose representations to you were the
15 sort of representations that you, as a manager at a nuclear
16 power plant, should rely on?

17 A. At the time I had complete faith in Andrew.

11:24:57 18 Q. All right. Let's talk about the October 24th meeting.
19 That was the meeting with the Nuclear Regulatory Commission
11:25:13 20 staff persons; is that right?

11:25:15 21 A. I believe that's correct, in D.C.

11:25:20 22 MR. POOLE: Your Honor, we're going to want to
11:25:22 23 display some pages from Government's Exhibit 108, which is the
11:25:27 24 slides from the meeting on the 24th and previously admitted.

11:25:40 25 THE COURT: Yes. That's fine.

11:26:06 1 BY MR. POOLE:

11:26:06 2 Q. Here's a page from that presentation. Do you recognize
3 it?

11:26:12 4 A. Yes, I believe that's the one we just talked about a
5 minute ago.

11:26:24 6 Q. Among other things it makes the representation that all
11:26:27 7 but four nozzle penetrations were inspected in 1996?

8 A. That's correct.

9 Q. How did you know that?

10 A. That was based upon the work that Andrew was doing.

11:26:39 11 Q. Did he tell you that 65 out of 69 nozzle penetrations
12 were inspected in 1996?

13 A. I don't think he directly told me. That's the
14 information he provided in the 2735 response. But I can't say
15 that we actually spoke face-to-face regarding that.

11:27:03 16 Q. We've seen a succession of e-mails from Prasoon Goyal
11:27:09 17 stating that the limited access to the head created by
11:27:17 18 inspection through the mouse holes was an impediment to
11:27:21 19 inspection. Isn't that what we just looked at?

11:27:27 20 A. Yes. Before the break?

21 Q. Yes.

22 A. Yes.

23 Q. E-mails that you received before the first bulletin
24 response was sent to the NRC?

25 A. That's correct.

11:27:38 1 Q. And, in fact, you knew that first he and then Andrew
2 Siemaszko said that it was necessary to cut access ports in the
3 reactor vessel head to permit inspection and cleaning?

11:27:56 4 A. I think that would be an over-characterization of what
5 they were asking for.

11:28:03 6 Q. Did we not just look at an e-mail that said we need
11:28:07 7 access ports?

8 A. Correct. But to say that it would -- just to merely
9 permit it; we had done inspections in the past. What they were
10 asking for was to make it easier to do that. I'm not trying to
11:28:24 11 be nitpicky. I just -- because to answer that question one way
12 would say we can't do any inspections ever, which wouldn't --
11:28:34 13 would question how they would get tapes in the first place.

14 Q. So what you're trying to explain is why you were willing
11:28:40 15 to accept the representation 65 out of 69 were inspected in
16 1996?

11:28:45 17 A. That came from the tape, correct.

11:28:48 18 Q. And, in fact, using the technology available at the
11:28:54 19 time, inspection of 65 out of 69 was impossible?

11:29:00 20 A. I didn't believe that to be the case.

11:29:05 21 Q. All right. Now -- all right. We'll move on.

11:29:31 22 MR. POOLE: Your Honor, I'm going to display
11:29:33 23 another page.

24 BY MR. POOLE:

25 Q. This is a page that Mr. Wise asked you about, and you

1 pointed out that in the first paragraph we've had added another
2 inspection, the 10th refueling outage?

3 A. Correct.

4 Q. That's the one where you've said 65 out of 69 were
11:29:54 5 inspected?

6 A. Correct.

11:29:57 7 Q. Now, the company's position was we can't do a -- well,
8 the position taken in 2735 was we couldn't do a nozzle-by-nozzle
11:30:09 9 inspection on the '96 tape because there was no orientation
11:30:14 10 information. Do you remember that?

11:30:15 11 A. Correct. That was my understanding.

11:30:17 12 Q. And so what was that based on, the '96 review? Was
13 it -- if you couldn't do a nozzle-by-nozzle with the videotape,
14 how could you be sure that you were reviewing the entire head?

11:30:32 15 A. You're asking me a question of how the inspection was
16 done, and I'm not the person that did the inspection. But my
11:30:44 17 understanding of it was that you had video of the drives; you
18 just couldn't go to say that specific drive is drive 56, and so
11:30:57 19 if you've got video of it, you can do some sort of assessment.
11:31:03 20 And my understanding is Andrew took that information and spoke
21 with people involved with that inspection to come up with the
22 information that he put on the table and in the submittal.

23 Q. Well, let me use an analogy. Suppose you're wandering
24 around in a forest with a video camera. You've been wandering
11:31:27 25 around for a while. And later on you want to answer the

1 question, have we seen all the trees? How can you answer that
11:31:35 2 question without knowing where you were when the video was
3 taken?

11:31:40 4 A. I'm not sure I could answer that analogy that you're
11:31:44 5 giving me.

11:31:45 6 Q. All right. We'll move on. What this says in this
7 slide here is a review of visual recordings as well as
11:31:54 8 eyewitness accounts served as the means of the inspection.
11:31:58 9 Wasn't that intended to explain in part how the '96 inspection
11:32:02 10 was done?

11 A. I believe that's correct.

11:32:05 12 Q. And you were in court here the day that Prasoon Goyal --
13 days that Prasoon Goyal testified, weren't you?

14 A. Yes, I was.

15 Q. And he did that inspection?

11:32:14 16 A. That's my understanding.

11:32:16 17 Q. Did you ever ask him if he'd done a 100 percent
11:32:20 18 inspection?

19 A. No, I did not.

20 Q. And, in fact, you know now that he believed he saw 50 to
11:32:27 21 60 percent of the nozzles?

11:32:29 22 A. That's correct.

11:32:33 23 Q. So this is not a true statement, is it, that all
11:32:36 24 penetrations were verified to be free from popcorn deposits
25 using 10, 11, and 12 RFO?

11:32:43 1 A. Not based on what I've heard from Prasoon Goyal, I'd
11:32:47 2 have to say no, that's not a true statement.

11:32:56 3 Q. Let's talk about 2735. That was submitted to the NRC on
4 October 17, 2001?

11:33:39 5 A. I believe that's correct.

11:33:45 6 Q. You signed off on it?

7 A. That's correct.

8 Q. You signed the greensheet?

9 A. That's correct. That's what I signed off on.

11:33:58 10 MR. POOLE: I'm going to display Government's
11 Exhibit 104 to the jury, Your Honor; previously admitted.

11:34:01 12 THE COURT: You may do so.

11:34:13 13 BY MR. POOLE:

11:34:13 14 Q. Is that the greensheet you signed off on?

11:34:17 15 A. I believe it is.

11:34:19 16 Q. And responsible manager, D.B.E., Design Basis
11:34:25 17 Engineering, D. Geisen, then your initials?

18 A. That's correct.

11:34:29 19 Q. Did you sign for anybody else on that one?

11:34:32 20 A. No, I didn't.

21 Q. Just yourself?

22 A. That's correct.

23 Q. And you were the person who was responsible for the
24 technical accuracy of the information in that submission; is
25 that a fair statement?

11:34:45 1 A. Yeah, I was one of them.

2 Q. One of the people?

3 A. Right. I think the way the greensheet reads, everyone

4 that signs that agrees they're agreeing with the technical

5 information. So I don't want to make it sound like I'm pompous

6 and they had no role.

11:35:10 7 Q. Let's take a look at the instructions because they're a

8 little more specific. I won't suggest that you're pompous, but

9 it does say the technical accuracy of a response to the NRC is

10 the responsibility of the director and management individual

11 assigned to the action?

11:35:29 12 A. Correct.

11:35:31 13 Q. And you were a management individual assigned to the

14 action?

15 A. Correct.

16 Q. And, in fact, as to the video review, you were

11:35:40 17 specifically tasked with coordinating them?

18 A. That's correct.

11:35:44 19 Q. So you had both the responsibility and direct

11:35:49 20 involvement?

11:35:51 21 A. Correct.

11:36:42 22 Q. Do you recall testimony about the issue of whether the

11:36:49 23 gap in the annulus around the nozzle at the top of the reactor

24 vessel head was capable of opening at full temperature?

25 A. Yes.

11:37:04 1 Q. And the issue there is, and correct me if I'm wrong, if
11:37:11 2 the gap doesn't open, the nozzle could crack, and the crack
3 could grow, and there would be no visual indication on the
11:37:22 4 surface of the reactor vessel head. Is that the concern?

5 A. That's correct.

11:37:29 6 Q. And there was, during the fall of 2001, a concern that
11:37:40 7 four or five nozzles at the top of the reactor vessel head would
8 not open?

11:37:49 9 A. That's true.

11:37:51 10 Q. Which makes them uninspectable by visual means?

11 A. That's correct.

11:38:00 12 Q. And therefore capable of having an undetected crack?

13 A. Correct.

11:38:11 14 Q. Later in the fall of 2001 it was discovered that through
11:38:16 15 analysis by a company called SAI, I believe, and correct me if
16 I'm wrong on that, that the gaps would open up?

17 A. I believe one of their revisions indicated that all the
18 cracks would open up.

11:38:36 19 Q. And you provided that information to the CNRB?

11:38:42 20 A. That the cracks would open up?

21 Q. Would open up.

22 A. No, I believe -- I don't think that's correct.

11:39:22 23 MR. POOLE: We're going to show the witness

24 Government's Exhibit 119. I believe that's previously

11:39:27 25 admitted, October 3rd. We'll display a page to the jury.

1 THE COURT: That's correct. You may display it.

11:40:11 2 BY MR. POOLE:

11:40:11 3 Q. I'm going to show you Government's Exhibit 119, which on
11:40:17 4 the first page says: Subject approved CNRB meeting minutes.
5 And I've tabbed the relevant page. I'd like you to take a look
6 at it, then I'll ask you some questions.

11:40:40 7 A. Okay.

11:40:50 8 Q. Do these minutes of the CNRB reflect that you told them
11:40:56 9 that it had been discovered that the gaps wouldn't open up?

10 A. Yes. I was mistaken there in my previous comment.

11:41:06 11 Q. So you knew and the company Nuclear Review Board knew
12 that the gaps could open up?

11:41:16 13 A. Correct.

11:41:23 14 Q. Did you give that information to the Nuclear Regulatory
15 Commission?

16 A. I don't believe we did.

17 Q. All right. Do you recall Mr. -- I believe it was Mr.
11:41:31 18 Moffitt's testimony that there was a discussion -- maybe it was
11:41:36 19 McLaughlin -- there was a discussion about whether that
20 information should be provided to the NRC, even though the
11:41:47 21 decision was made that it would not be?

22 A. Yes, I believe it was Mr. McLaughlin that spoke to that
23 yesterday.

24 Q. And you were a part of that meeting, weren't you?

25 A. I believe it was myself and Mr. Lockwood.

11:42:03 1 Q. Now, do you consider the information that was provided
2 to the Nuclear Regulatory Commission on that subject accurate
3 and complete?

11:42:12 4 A. If we didn't change it, probably not, no.

11:42:25 5 Q. You testified about being involved in serial 2744.
6 That was the letter that went to the NRC with all the pictures
11:42:35 7 of the reactor vessel head?

8 A. That's correct.

11:42:51 9 MR. POOLE: Your Honor, that's Government's Exhibit
10 113.

11:42:56 11 THE COURT: That was admitted previously?

12 MR. POOLE: Yes.

11:43:05 13 BY MR. POOLE:

11:43:05 14 Q. You said on that Serial Letter, you were furnished
11:43:11 15 photographs by Andrew Siemaszko.

11:43:13 16 A. Correct.

11:43:15 17 Q. And you supplied captions for the photographs; is that
11:43:22 18 correct?

11:43:22 19 A. That's correct.

11:43:25 20 Q. And you said some of the information that you put into
21 the captions came from Mr. Siemaszko; is that correct?

22 A. Correct.

23 Q. Some from your own observations about his techniques?

24 A. Correct.

11:43:40 25 Q. Some from other people?

11:43:44 1 A. I don't know specifically where the other information
2 would come from.

3 Q. So you -- your own knowledge and Andrew Siemaszko?

4 A. Right.

11:44:41 5 Q. All right. I'm going to show you now and the jury a
6 picture -- well, a page from 2744; it's one that you testified
7 about on direct. There it is. And you recall that picture
11:45:01 8 being a picture from the '96 inspection?

11:45:07 9 A. That's what I would take from this, yes.

11:45:12 10 Q. I'd like to focus on the language at the bottom. Some
11 boron piles were observed at the top of the head in the vicinity
11:45:23 12 of previous leaking flanges. Because of its location, it could
11:45:28 13 not be removed by mechanical cleaning but was verified not to be
11:45:32 14 active or wet and therefore did not pose a threat to the head
15 from a corrosion standpoint.

11:45:39 16 We'll get back to that sentence, but for our
17 purposes now, the sentence I want to ask you about is this one:
11:45:45 18 Additionally, since these drives are not credited with leaking,
19 that further ratifies that the boron is from previous flange
11:45:55 20 leakage.

11:45:56 21 All right. So this is one of those drives that
11:45:59 22 was believed to have a gap that wouldn't open up?

11:46:02 23 A. Correct.

11:46:04 24 Q. The statement that you've made here is: Since we know
11:46:11 25 that these drives won't open up and leak, that shows us that the

11:46:19 1 boron we're looking at in the picture is the from previous
11:46:24 2 flange leakage?

11:46:26 3 A. That was one of the indications, plus the screening and
11:46:31 4 stuff.

5 Q. I just want to ask about that sentence.

6 A. Okay.

7 Q. Now, later on you learned that those drives would open
8 up and would leak?

11:46:43 9 A. Correct.

11:46:45 10 Q. So the confidence that you got from knowing that they
11:46:52 11 wouldn't open up, I mean, that proves there must be flange
12 leakage was misplaced, wasn't it?

11:46:59 13 A. Yeah, potentially. But the other thing, this was in a
11:47:06 14 completely different time frame than when I wrote this. We had
11:47:11 15 the report from SIA that said that they would not open up.

16 Q. Sure. At the time you believed it to be true that the
11:47:19 17 gap wouldn't open up?

18 A. Correct.

19 Q. Later on you found out that it would?

11:47:24 20 A. Correct. One of the revisions said that it would.

21 Q. And you participated in a meeting where you discussed,
22 should we reveal this to the NRC or not? And it was decided
11:47:38 23 we're not going to provide that information to the NRC. Don't
24 you think that would have made a difference to the
11:47:46 25 representation you made here?

11:47:51 1 A. I can see where that conclusion would be made, yes.

11:47:55 2 Q. Well, let's talk about the rest of that caption.

11:48:07 3 There's that statement about boron, because of its location

4 could not be removed by mechanical cleaning, but it was verified

11:48:18 5 not to be active or wet.

11:48:20 6 Now, do you remember being asked about that by the

11:48:25 7 investigators in this case?

11:48:27 8 A. Vaguely.

11:48:30 9 Q. And when they asked you, how did you verify it not to be

11:48:35 10 active or wet; do you remember what you said?

11:48:40 11 A. I think I got that information from Ed Chimahusky, but I

11:48:47 12 wasn't sure.

11:48:48 13 Q. Do you remember what Mr. Chimahusky said on the stand?

11:48:51 14 A. Yes, I do.

15 Q. He said you didn't get that information from him?

16 A. That's correct.

11:48:59 17 Q. And, in fact, sitting here today, can you tell the jury

18 where you got that information?

19 A. No, I can't. I mean, in 2002 when the Office of

11:49:12 20 Investigation asked me, I thought it was potentially from Ed

21 Chimahusky, but I wasn't sure at that time. I can't tell you

22 today.

11:49:28 23 Q. Do you know who did the inspection in '96?

24 A. I understand that was Mr. Goyal.

11:49:35 25 Q. And do you recall that he was asked whether he verified

11:49:39 1 that that boron was not active or wet?

2 A. I don't recall that question, but he may very well have
3 been.

11:49:49 4 Q. Would it surprise you to learn that nobody asked him
11:49:54 5 that question?

11:49:57 6 A. At this point in the investigation, yes, I would be very
11:50:01 7 surprised if no one asked him that question. Or are you
11:50:04 8 referring to way back then?

11:50:06 9 Q. Well, the fact of the matter is -- if the jury's
10 recollection is different, so be it -- didn't Prasoon Goyal say
11 on the stand that he never verified that that boron was not
11:50:22 12 active or wet?

13 A. I'm not sure. I'd have to -- I'm sorry, I don't recall
14 every single thing he said on the stand. So I'm sorry.

15 Q. But who else could have verified that other than the man
16 who did the inspection?

11:50:39 17 A. That would make sense that it would be the person that
18 did the inspection.

11:51:55 19 Q. Do you recall, getting back to the phone call from Brian
20 Sheron, I think you said you were busy on September 28th when
11:52:11 21 that phone call occurred, busy with the INPO inspection?

22 A. Correct. That was a Friday.

11:52:19 23 Q. And that was the phone call in which Sheron said that
11:52:24 24 the utility should -- or licensee, I think that's the sort of
25 language they used -- should reconsider its bulletin response

11:52:33 1 and shut down and inspect by the end of the year?

11:52:36 2 A. I'm assuming that's what he said. I wasn't on the
11:52:40 3 phone call, but that's what I've been told.

11:52:46 4 Q. Do you recall that Mr. Moffitt, Steve Moffitt, pulled
11:52:52 5 you out of the INPO inspection at the time of that phone call?

6 A. It actually was Guy Campbell.

11:53:00 7 Q. What was the purpose of that?

11:53:02 8 A. Guy Campbell grabbed several of us managers to discuss
9 the fact that he was somewhat agitated as he had just gotten a
10 phone call from his boss, Mr. Saunders, that said: Hey, I just
11 got a phone call about your plant, and I don't hear about
12 anything from you. So he was a little annoyed and he called us
13 out. And I can't tell you exactly what all the meetings and
11:53:32 14 everything were about or what the discussion was about after
15 that, but I think Mr. Lockwood took pretty much the lead at that
11:53:40 16 point to start establishing some sort of line of communication
17 with the NRC.

11:53:45 18 Q. So that was discussions amongst some pretty high-level
11:53:50 19 people at FirstEnergy?

11:53:52 20 A. The discussion that I participated in -- which
21 discussion?

22 Q. What's Mr. Saunders' title?

23 A. He's the Chief Nuclear Officer, or was at that time.

11:54:06 24 Q. Mr. Campbell?

11:54:07 25 A. He is the site vice-president.

11:54:09 1 Q. And they were concerned?

11:54:12 2 A. I can't speak to what Mr. Saunders' feelings were
11:54:18 3 because I didn't communicate with him. That was a
4 communication that happened between Mr. Campbell and Mr.
11:54:23 5 Saunders. So I really can't --

11:54:25 6 Q. You mean Mr. Campbell? Mr. Campbell, was he concerned?

7 A. Yes, he was.

11:55:25 8 Q. Do you recall when you first started your direct
9 testimony yesterday that Mr. Wise asked you a series of
11:55:32 10 questions about did you ever lie to the NRC, did anybody ever
11 direct you to do that? Do you remember those questions?

12 A. Yes, I do.

11:55:42 13 Q. One of those questions was: Did you ever conceal from
14 the Nuclear Regulatory Commission any safety-related
11:55:55 15 information?

16 And your answer to that was: No?

17 A. Correct.

11:56:00 18 Q. But we've talked about a number of things, pieces of
11:56:06 19 information that you had that were not revealed to the NRC,
20 haven't we?

11:56:14 21 A. You talk about pieces. The only one I'm aware of is
11:56:20 22 the gap information. Is that what we're talking about?

23 Q. Well, then there are the impediments to inspection that
11:56:26 24 were missing from the first bulletin response. There was the
25 information about this failure to correct the language that you

11:56:45 1 personally put in the caption from the photograph; you never
2 corrected that, did you?

3 A. No, we never sent any new photos.

11:56:57 4 Q. And throughout this process, it's basically been your
5 position that either you viewed the responsibility for providing
6 correct information -- you viewed it as somebody else's
7 responsibility?

11:57:19 8 MR. WISE: Objection.

11:57:24 9 THE COURT: Why don't we ask the question.

10 BY MR. POOLE:

11 Q. Isn't that so?

11:57:29 12 A. I'm sorry. You're going to have to put it in a
11:57:34 13 question.

11:57:38 14 THE COURT: I'm supposed to say that.

11:57:41 15 THE WITNESS: I didn't understand the question.
16 I'm sorry.

11:57:44 17 MR. POOLE: Your Honor, I think we'll quit there.
18 I think we've asked our questions.

11:57:51 19 THE COURT: Redirect?

11:57:53 20 MR. WISE: I'll be brief. Thank you.

11:57:53 21

11:57:53 22

- - -

11:57:53 23 DAVID GEISEN, REDIRECT EXAMINATION

11:58:06 24 BY MR. WISE:

11:58:06 25 Q. David, let me ask you this. Mr. Poole started by

1 asking you about e-mails and trip reports in January and March
2 of '01 that he categorized as warnings to you. Did you take
3 those e-mails and trip reports as warnings in January and March
4 of 2001?

11:58:25 5 A. No. I wish I had.

11:58:27 6 Q. Did Prasoon Goyal ever come to you and say: We have a
7 problem; this is a warning?

11:58:32 8 A. No, he did not.

9 Q. Did Theo Swim ever come to you and say: We have a
10 problem; this is a warning?

11 A. No, he didn't.

12 Q. Did any of the e-mails that you were shown by Mr. Poole
11:58:42 13 have a heading that said: Warning, urgent, anything like that?

11:58:48 14 A. No. There was one e-mail that he introduced that said
11:58:56 15 urgent in the heading, I think.

16 Q. That was Mr. Miller's e-mail about the September 28th
17 phone call?

11:59:02 18 A. That's correct.

19 Q. Did any of the e-mails that Mr. Goyal sent to you and
11:59:08 20 others about lessons learned at Oconee or any others bear a
21 heading that said these were urgent?

22 A. No.

23 Q. As you looked at them in early 2001 through mid 2001,
11:59:20 24 did you have a sense that what Mr. Goyal was telling you was
25 that the plant had a problem?

11:59:28 1 A. No. I think he was asking for in many of those was it
2 would be easier to do these inspections if we had inspection
11:59:39 3 ports.
4 Q. As you look back at those e-mails now, do you see things
5 differently as you saw them then?
11:59:45 6 A. Absolutely.
11:59:46 7 Q. As you looked at the questions that you were interacting
8 with the NRC about in October and November of 2001, were you
11:59:53 9 thinking back to the e-mails that Mr. Poole has just shown you
10 from the early part of that year?
11 A. No.
12:00:11 12 Q. I'm going to show you the first page of Mr. Gibbs'
13 report that is Government's Exhibit 65. And I believe that Mr.
14 Poole suggested to you that this letter told you that Bulletin
15 2001-01 was inaccurate.
16 First of all, who is this letter addressed to?
17 A. Mark McLaughlin.
12:00:43 18 Q. As you look at the page that's up on the screen, do you
19 see the word "inaccurate" in that text?
20 A. No.
21 Q. Do you see the word "false" in that text?
22 A. No.
23 Q. Do you see the word "misleading" in that text?
24 A. No.
12:00:58 25 Q. Did you ever speak to Mr. Gibbs about this letter?

1 A. No, I didn't.

2 Q. Did you speak to Mr. McLaughlin about his conversations
3 with Mr. Gibbs?

12:01:06 4 A. No, I didn't.

12:01:07 5 Q. To your knowledge did Mr. Gibbs ever tell anyone at
6 Davis-Besse that what he was reporting was that there were
7 false, misleading, or inaccurate statements in bulletin response
12:01:17 8 2731?

12:01:18 9 A. I think Mr. Gibbs, if he had felt that way, would have
10 gone directly to the vice-president.

12:01:28 11 Q. Mr. Poole was asking you about 2731 and how that
12 document did not say that the limited access was an impediment.
13 Do you remember those questions?

14 A. That's correct.

15 Q. What did you believe about the ability of the station to
16 clean the head in 2000 as you were doing the greensheet review
12:01:51 17 in August of 2001?

12:01:52 18 A. Well, for 2731 I thought we were very successful in
12:01:58 19 getting the head clean with the hot water. And as far as being
20 able to do inspections, although it's not ideal, you could do
12:02:06 21 inspections through a mouse hole.

12:02:08 22 Q. Did you believe the lack of holes had prevented a
23 successful cleaning in 2000?

24 A. No.

12:02:14 25 Q. Were you aware that the people involved in doing the

12:02:17 1 inspections had been involved in the drafting of 2731?

2 A. Yes.

12:02:22 3 Q. Do you have any reason to believe that 2731 was not
4 technically accurate when you did the greensheet review?

12:02:29 5 A. No.

6 Q. You talked with Mr. Poole about the captions in 2744,
7 the photograph; do you recall that?

8 A. Correct.

9 Q. Do you recall the question about whether you had spoken
10 with Mr. Chimahusky?

12:02:40 11 A. Yes.

12 Q. When you were compiling information preparing the
13 captions, what was that based on?

12:02:51 14 A. It was based on the sum total of knowledge I had

12:02:56 15 acquired from talking to Andrew, my knowledge of the plant,
16 talking to the other individuals. I can't say that this
17 statement came from this person at this point.

12:03:10 18 Q. Did you believe that Andrew had spoken with others?

12:03:13 19 A. Yes.

20 Q. When you were writing the language about verified not to
21 be active and wet, you said you can't recall specifically who
22 that came from?

12:03:22 23 A. No, I can't. But I know that that phrase had been used
24 before.

25 Q. Do you think that you just made it up without believing

1 that it was true?

2 A. No.

12:03:30 3 Q. The discussion about the gap analysis in the November
12:03:35 4 15th e-mail.

5 A. Correct.

12:03:37 6 Q. At the time that you were presenting the probabilistic
12:03:43 7 risk assessment that Mr. Byrd was doing, what was your
12:03:47 8 understanding about whether you were taking credit for the top
12:03:50 9 four nozzles in the 1996 inspection?

12:03:53 10 A. We weren't taking credit for them.

12:03:55 11 Q. If the gaps opened up, would that potentially allow you
12 to, in fact, take credit for those nozzles?

13 A. No, because we already knew that there was boron up
14 there near those drives, so that we, from an inspection
12:04:10 15 standpoint, still would not have been able to take credit for
16 it. So when we did our -- I'm going to stop using the word
12:04:18 17 "we" because that gets me in trouble.

18 When Ken Byrd reran his most -- the final version
12:04:26 19 of his probabilistic risk assessment, he ran it not taking
20 credit for that, I think actually at one point ran it not taking
21 credit for any inspections.

22 Q. Did you make the final call to provide the revised SAI
12:04:43 23 information to the NRC?

24 A. No, I did not.

25 Q. Do you believe that the decision not to -- if that was,

12:04:47 1 in fact, the final decision -- was done to try to keep bad
2 information from the NRC?

12:04:52 3 A. No. I think Mark captured it accurately, that it was
12:04:57 4 because it was less conservative.

5 Q. Mr. Poole asked you a series of questions about the
6 expense that Davis-Besse would have incurred had they had to
12:05:09 7 shut down early.

8 Do you remember those questions?

9 A. Yes.

12:05:13 10 Q. Would any of that expense have come out of your pocket?

11 A. No.

12 Q. Would you have sacrificed your career to save
12:05:20 13 Davis-Besse money?

12:05:21 14 A. No.

12:05:24 15 MR. WISE: That's all I have. Thank you.

12:05:48 16 THE COURT: You may step down.

12:05:54 17 Ladies and gentlemen, we'll now take roughly an
18 hour and 15 minutes, somewhere around 20 after 1:00 for our
19 lunch break.

20 Please remember my previous instructions and
12:06:09 21 admonitions not to discuss this case among yourselves or with
22 anyone else, nor to permit anyone else to discuss it with you.
12:06:18 23 Do not read, listen to, or watch anything touching on this case.
24 And do not make up your mind on the ultimate issues you will
25 decide at the end of the case when it is submitted to you for

1 your verdict.

12:06:35

2 Enjoy your lunch. We'll see you at approximately
3 20 after the hour.

4 (Recess taken.)

5

- - -

6

7

8

C E R T I F I C A T E

9

10 I certify that the foregoing is a correct transcript from the
11 record of proceedings in the above-entitled matter.

12

13

14 _____
Tracy L. Spore, RMR, CRR

Date

15

16

17

18

19

20

21

22

23

24

25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

DAVID GEISEN, CONTINUED DIRECT EXAMINATION	1905
BY MR. WISE:	
DAVID GEISEN, CROSS-EXAMINATION	1945
BY MR. POOLE:	
DAVID GEISEN, REDIRECT EXAMINATION	2007
BY MR. WISE:	

	2	3rd - 1903:14, 1906:24, 1907:17, 1909:4, 1909:8, 1910:9, 1911:7, 1923:1, 1998:25	1973:6, 1973:8, 1983:25, 1984:2, 1984:5, 1992:17, 1993:2, 1993:7, 2010:12 accompanying - 1923:12 accounts - 1995:8 accuracy - 1910:5, 1924:8, 1970:23, 1971:2, 1971:7, 1971:9, 1984:12, 1984:25, 1985:22, 1996:24, 1997:9 accurate - 1918:9, 1918:19, 1919:12, 1942:25, 1971:13, 1975:17, 1975:18, 1985:25, 1986:9, 2000:2, 2011:4 accurately - 2013:3 acid - 1914:19, 1914:22, 1954:25, 1955:4, 1955:10, 1955:17, 1963:20, 1965:18, 1972:11, 1972:25, 1983:8, 1983:21, 1983:22, 1985:3, 1985:12 acquired - 2011:15 act - 1957:14, 1964:14, 1965:23 action - 1910:13, 1948:6, 1948:7, 1955:21, 1970:25, 1984:5, 1997:11, 1997:14 active - 1927:16, 2001:14, 2003:5, 2003:10, 2004:1, 2004:12, 2011:21 activity - 1978:23 actual - 1908:23, 1921:17, 1932:17, 1935:2, 1962:14, 1963:24 add - 1920:18 added - 1921:16, 1925:5, 1970:6, 1994:1 Additionally - 1911:16, 2001:18 addressed - 1954:12, 2009:16 addresses - 1948:15 admit - 1939:8 admitted - 1907:9, 1929:10, 1946:8, 1946:9, 1947:12, 1957:21, 1961:25, 1964:17, 1966:1, 1971:19, 1973:11, 1974:6, 1982:7, 1986:17, 1988:22, 1991:24, 1996:11, 1998:25, 2000:11 admonitions - 1968:2, 2013:21 adverse - 1948:10 advocate - 1963:13 Affairs - 1921:2 afterwards - 1919:13 agitated - 2005:9 ago - 1924:21, 1951:13, 1975:9, 1992:5 agreeing - 1997:4 agreement - 1923:1 agrees - 1997:4 ahead - 1925:24, 1990:5 Aih - 1988:1 air - 1975:25 air-conditioning - 1975:25 al - 1903:7 Allen - 1987:21 allow - 1918:14, 1957:11, 1961:5, 2012:11 allowed - 1928:8, 1956:24, 1979:21, 1983:25 allowing - 1956:13 almost - 1915:9 alone - 1918:14, 1937:7, 1986:13 altered - 1941:9 America - 1903:4 amount - 1928:24, 1954:25, 1955:10, 1955:12
1		4	
'01 - 1911:16, 2008:2 '85 - 1944:19 '96 - 1921:13, 1928:15, 1935:24, 1936:4, 1936:9, 1936:23, 1943:5, 1994:9, 1994:12, 1995:9, 2001:8, 2003:23 '98 - 1928:15, 1928:25, 1936:10, 1936:22, 1937:4, 1937:8, 1937:12, 1943:5, 1966:7, 1987:19, 1990:15, 1990:22	2 - 1958:2, 1959:2 20 - 1944:15, 2013:18, 2014:3 2000 - 1911:5, 1921:12, 1928:15, 1928:20, 1928:25, 1929:3, 1929:18, 1929:20, 1937:3, 1937:10, 1937:13, 1937:16, 1937:19, 1937:21, 1941:11, 1943:5, 1952:4, 1952:11, 1952:12, 1952:25, 1954:17, 1954:21, 1966:9, 1966:15, 1967:5, 1967:14, 1967:18, 1987:19, 1990:15, 1990:22, 2010:16, 2010:23 2000-1037 - 1947:5 20005 - 1903:15, 1903:22 2001 - 1905:9, 1930:9, 1944:9, 1945:3, 1950:1, 1951:14, 1951:15, 1952:11, 1954:15, 1954:20, 1957:19, 1964:20, 1966:18, 1967:21, 1977:1, 1980:3, 1980:8, 1980:20, 1982:21, 1982:22, 1989:24, 1996:4, 1998:6, 1998:14, 2008:4, 2008:23, 2009:8, 2010:17 2001-01 - 1905:8, 1951:4, 1964:21, 1965:7, 1965:9, 1968:21, 1969:15, 1974:1, 1983:20, 2009:15 2002 - 1982:5, 2003:19 20026 - 1903:18 20036 - 1904:3 2007 - 1903:5, 2015:7 202-514-0838 - 1903:15 202-514-2956 - 1903:18 202-626-5801 - 1903:23 202-833-3400 - 1904:4 21 - 1952:16, 1952:23 22 - 1954:15 23984 - 1903:17 243-3607 - 1904:6 24th - 1922:22, 1923:18, 1924:9, 1925:10, 1991:18, 1991:24 25 - 1944:2, 1957:20 26 - 1957:19 2731 - 1905:11, 1908:13, 1920:10, 1967:9, 1971:15, 1971:18, 1973:4, 1986:2, 1987:17, 1987:18, 1991:8, 2010:8, 2010:11, 2010:18, 2011:1, 2011:3 2735 - 1921:5, 1921:8, 1921:23, 1922:21, 1924:6, 1992:14, 1994:8, 1996:3 2744 - 1925:15, 1925:17, 1925:20, 1926:6, 1926:8, 1928:1, 1937:17, 1937:23, 2000:5, 2001:6, 2011:6 28 - 1961:24 28th - 1942:9, 1942:14, 1974:17, 2004:20, 2008:16 29th - 1941:24 2nd - 1906:23, 1908:14	4 - 1958:2 40 - 1965:25, 1969:9 419 - 1904:6 43624 - 1904:6	
1		5	
1 - 1954:24, 1955:4, 1955:8, 1955:24, 1958:2, 1982:14 10 - 1924:23, 1925:3, 1941:12, 1973:25, 1987:12, 1995:25 100 - 1961:10, 1967:18, 1986:23, 1995:17 104 - 1996:11 108 - 1923:5, 1923:9, 1923:20, 1991:23 10:00 - 1931:6, 1931:23 10:30 - 1931:6, 1931:23, 1968:2 10th - 1994:2 11 - 1903:9, 1918:5, 1924:22, 1964:20, 1987:12, 1989:24, 1995:25 11-28 - 1942:22 113 - 1929:10, 2000:10 118 - 1942:12, 1942:21 119 - 1998:24, 1999:3 11th - 1916:9, 1916:12, 1916:14, 1917:9, 1918:3, 1919:10, 1919:16, 1924:19, 1924:20 12 - 1918:5, 1924:22, 1924:23, 1932:22, 1946:7, 1983:8, 1987:12, 1995:25 125 - 1978:22 12th - 1918:15, 1945:20 13 - 1949:9, 1949:11, 1952:13, 1954:15, 1954:17, 1954:21, 1985:15 13th - 1950:14, 1984:6 14 - 1952:13, 1969:20, 1970:14, 1970:19 140 - 1946:25 1400 - 1903:14 14th - 1940:10, 1953:11, 1963:4 15 - 1903:9, 1947:12, 1968:1, 2013:18 15th - 1940:21, 1941:16, 2012:4 17 - 1966:18, 1996:4 1716 - 1904:5 17th - 1921:6, 1966:22 18-by-20 - 1932:12 1828 - 1904:3 19 - 1903:5 1905 - 2015:3 1945 - 2015:5 1996 - 1920:18, 1928:19, 1928:22, 1933:8, 1933:9, 1934:21, 1935:22, 1941:12, 1992:7, 1992:12, 1993:16, 2012:9 1998 - 1911:5, 1919:16, 1921:13, 1928:19, 1937:3 1:00 - 2013:18 1d - 1971:24	2000-1037 - 1947:5 20005 - 1903:15, 1903:22 2001 - 1905:9, 1930:9, 1944:9, 1945:3, 1950:1, 1951:14, 1951:15, 1952:11, 1954:15, 1954:20, 1957:19, 1964:20, 1966:18, 1967:21, 1977:1, 1980:3, 1980:8, 1980:20, 1982:21, 1982:22, 1989:24, 1996:4, 1998:6, 1998:14, 2008:4, 2008:23, 2009:8, 2010:17 2001-01 - 1905:8, 1951:4, 1964:21, 1965:7, 1965:9, 1968:21, 1969:15, 1974:1, 1983:20, 2009:15 2002 - 1982:5, 2003:19 20026 - 1903:18 20036 - 1904:3 2007 - 1903:5, 2015:7 202-514-0838 - 1903:15 202-514-2956 - 1903:18 202-626-5801 - 1903:23 202-833-3400 - 1904:4 21 - 1952:16, 1952:23 22 - 1954:15 23984 - 1903:17 243-3607 - 1904:6 24th - 1922:22, 1923:18, 1924:9, 1925:10, 1991:18, 1991:24 25 - 1944:2, 1957:20 26 - 1957:19 2731 - 1905:11, 1908:13, 1920:10, 1967:9, 1971:15, 1971:18, 1973:4, 1986:2, 1987:17, 1987:18, 1991:8, 2010:8, 2010:11, 2010:18, 2011:1, 2011:3 2735 - 1921:5, 1921:8, 1921:23, 1922:21, 1924:6, 1992:14, 1994:8, 1996:3 2744 - 1925:15, 1925:17, 1925:20, 1926:6, 1926:8, 1928:1, 1937:17, 1937:23, 2000:5, 2001:6, 2011:6 28 - 1961:24 28th - 1942:9, 1942:14, 1974:17, 2004:20, 2008:16 29th - 1941:24 2nd - 1906:23, 1908:14	5 - 1958:2, 1959:8, 1959:11, 1960:16, 1981:13 50 - 1995:20 50.9 - 1985:22 56 - 1994:18 59 - 1969:2, 1969:12 5:30 - 1931:20, 1932:2	
1		6	
		60 - 1958:9, 1971:18, 1977:15, 1995:21 600 - 1979:11 640 - 1904:2 65 - 1982:6, 1982:8, 1992:11, 1993:15, 1993:19, 1994:4, 2009:13 655 - 1903:22 69 - 1919:5, 1958:9, 1973:11, 1981:5, 1992:11, 1993:15, 1993:19, 1994:4	
1		7	
		78 - 1907:9, 1907:14, 1986:16 7th - 1930:21, 1931:4, 1952:25	
1		8	
		8 - 1930:11, 1953:7 80 - 1909:24 87 - 1917:12, 1924:25, 1988:21, 1988:23, 1988:24 8th - 1930:9, 1930:15, 1931:5, 1931:8, 1931:9, 1938:11, 1939:19	
1		9	
		900 - 1903:21 9:04 - 1905:1 9th - 1930:17, 1939:10, 1939:20	
1		A	
		ability - 1913:19, 1935:19, 1939:17, 1940:14, 2010:15 able - 1942:16, 1949:10, 1955:25, 1961:6, 1964:8, 2010:20, 2012:15 above-entitled - 2014:11 absolutely - 1961:13, 1978:4 Absolutely - 1961:15, 1964:12, 1981:4, 2009:6 accent - 1940:15 accept - 1993:15 acceptable - 1915:3 accepted - 1978:8 access - 1952:7, 1961:6, 1962:7, 1962:11, 1962:23, 1963:7, 1963:22, 1964:2, 1972:14, 1972:18, 1973:3	

analogy - 1994:23, 1995:4
analysis - 1919:2,
 1998:15, 2012:3
Andrew - 1903:20, 1909:4,
 1910:21, 1912:1, 1912:2,
 1912:14, 1913:17, 1916:7,
 1917:6, 1917:24, 1919:14,
 1919:18, 1920:13, 1920:17,
 1922:3, 1922:6, 1924:2,
 1925:4, 1925:8, 1925:23,
 1926:2, 1926:12, 1926:14,
 1926:19, 1926:24, 1927:3,
 1927:20, 1940:7, 1940:12,
 1951:11, 1951:19, 1951:24,
 1954:22, 1987:3, 1987:9,
 1988:8, 1989:11, 1990:2,
 1991:4, 1991:10, 1991:17,
 1992:10, 1993:1, 1994:20,
 2000:15, 2001:3, 2011:15,
 2011:18
Andrew's - 1916:3,
 1921:15, 1922:8, 1922:14,
 1922:18, 1932:7, 1940:15
Angela - 1911:20
angles - 1915:11
angry - 1938:19
annoyed - 2005:12
answer - 1935:18,
 1938:16, 1938:18, 1945:1,
 1945:2, 1948:15, 1949:20,
 1961:21, 1961:22, 1977:23,
 1984:16, 1985:16, 1985:17,
 1993:11, 1994:25, 1995:1,
 1995:4, 2006:16
answers - 1948:16
anticipate - 1950:22
anulus - 1997:23
anytime - 1953:25
anyway - 1941:14,
 1958:16, 1967:17
anyways - 1913:1,
 1976:15
apologize - 1968:13
apparent - 1948:25,
 1950:25
appear - 1915:18, 1934:2,
 1957:7
Appearances - 1903:12
appeared - 1928:19,
 1928:20
approach - 1948:18
appropriate - 1905:23,
 1930:24, 1946:21, 1967:24
approval - 1968:25,
 1970:20
approved - 1963:25,
 1999:4
April - 1982:5
apron - 1963:14
area - 1915:6, 1978:13,
 1979:20
areas - 1909:13, 1985:4,
 1986:24
Arkansas - 1911:16,
 1977:12
aside - 1907:20
assessment - 1994:19,
 2012:7, 2012:19
assigned - 1970:25,
 1997:11, 1997:13
assistants - 1916:10,
 1916:14, 1917:17, 1918:18,
 1988:18, 1990:10
associates - 1919:3
Associates - 1919:7,
 1940:21
assume - 1908:3, 1908:5,
 1954:1
assumed - 1946:14
assuming - 1910:4,

1988:1, 2005:2
Assuming - 1908:6
assure - 1922:14
attachment - 1921:16,
 1921:17
attempt - 1960:17
attention - 1906:2,
 1923:19, 1958:6
audience - 1930:16
August - 1952:11,
 1964:20, 1966:18, 1967:21,
 2010:17
available - 1973:3,
 1980:10, 1980:12, 1980:22,
 1981:1, 1993:18
Avenue - 1903:14, 1904:5
avert - 1944:21
Avi - 1925:24
avoid - 1984:5
aware - 1942:1, 1962:24,
 2006:21, 2010:25
axial - 1977:13

B

B&w - 1980:17, 1981:8,
 1981:14
b&w - 1981:9
background - 1914:23
bad - 1930:1, 1937:13,
 2013:1
Ballantine - 1903:16
base - 1927:12, 1976:14
based - 1917:22, 1917:24,
 1925:8, 1926:25, 1927:4,
 1927:18, 1927:19, 1941:20,
 1943:6, 1943:25, 1987:2,
 1992:10, 1994:12, 1996:1,
 2011:13, 2011:14
Based - 1909:10, 1915:15,
 1927:1, 1986:11
baseline - 1949:10,
 1949:12
basis - 1923:25, 1925:7,
 1948:4
Basis - 1905:16, 1905:18,
 1906:1, 1996:16
Bateman - 1939:3
bead - 1978:16
bear - 2008:20
became - 1948:25, 1952:3,
 1952:4, 1988:2
began - 1968:10
behalf - 1969:24
behind - 1938:3
belief - 1939:11
below - 1924:24, 1978:11
besse - 1907:1, 1910:10,
 1930:20, 1939:24, 1943:11,
 1944:1, 1944:18, 1944:19,
 1949:17, 1952:2, 1956:9,
 1958:2, 1958:10, 1958:19,
 1959:12, 1959:25, 1960:9,
 1962:8, 1962:11, 1962:14,
 1962:22, 1965:9, 1974:19,
 1975:5, 1976:23, 1977:9,
 1977:15, 1977:18, 1977:22,
 1980:8, 1983:19, 2010:6,
 2013:6, 2013:13
besse's - 1957:4, 1981:25
best - 1928:22, 1942:25
better - 1933:14, 1939:13,
 1939:14, 1972:14
between - 1918:5,
 1924:17, 1928:17, 1929:18,
 1935:7, 1941:3, 2006:4
bit - 1905:25, 1912:18,
 1916:20, 1936:11
black - 1928:20
blank - 1934:14

block - 1969:20
Block - 1970:14, 1970:19
blurry - 1936:17, 1939:4
Board - 1941:24, 1999:11
Bob - 1908:16, 1974:16
body - 1921:17
bolting - 1957:1, 1957:3
boric - 1914:19, 1914:22,
 1954:25, 1955:4, 1955:10,
 1955:17, 1963:20, 1965:18,
 1972:11, 1972:25, 1983:8,
 1983:21, 1983:22, 1985:2,
 1985:12
boron - 1909:15, 1909:17,
 1914:13, 1914:20, 1914:25,
 1915:7, 1918:1, 1927:15,
 1935:8, 1936:22, 1937:2,
 1939:21, 1941:11, 1946:22,
 1957:7, 1957:13, 1960:18,
 1960:19, 1975:16, 1986:25,
 1989:7, 2001:11, 2001:19,
 2002:1, 2003:3, 2004:1,
 2004:11, 2012:13
boss - 1905:17, 1920:5,
 1920:6, 2005:10
bottom - 1909:23, 1953:8,
 1978:9, 1979:7, 2001:10
bouncing - 1928:24
Box - 1903:17
box - 1942:21, 1980:5
brand - 1946:24
break - 1912:18, 1967:24,
 1968:1, 1968:6, 1968:14,
 1968:19, 1969:11, 1972:24,
 1992:20, 2013:19
breakdown - 1921:10
Brian - 1974:13, 1974:15,
 1974:17, 1974:18, 2004:19
brief - 1930:22, 2007:20
briefed - 1955:7
briefing - 1990:10
briefly - 1921:20, 1938:14
bring - 1935:16, 1940:7,
 1954:1, 1984:20
brought - 1919:18,
 1931:13, 1940:9, 1940:19
budgetary - 1952:12
building - 1913:1, 1931:6
built - 1956:12, 1956:14,
 1980:16
bullet - 1955:25
Bulletin - 1951:4, 1964:21,
 1965:6, 1965:9, 1968:21,
 1969:15, 1974:1, 1983:19,
 2009:14
bulletin - 1905:8, 1910:22,
 1911:2, 1911:5, 1923:15,
 1943:10, 1951:15, 1965:13,
 1966:23, 1971:21, 1971:25,
 1974:20, 1977:11, 1983:13,
 1984:21, 1985:6, 1986:2,
 1992:23, 2004:25, 2006:24,
 2010:7
bullets - 1925:6
bunch - 1973:17, 1985:2
busy - 2004:20, 2004:21
buttons - 1933:4, 1933:5
buy - 1976:4, 1976:5,
 1976:8
buying - 1976:20
bypass - 1909:2
Byrd - 1920:15, 2012:7,
 2012:18

C

calculation - 1948:14
calibrated - 1911:18,
 1911:21
caller - 1974:18

camera - 1928:21, 1934:1,
 1939:15, 1994:24
Campbell - 2005:6, 2005:8,
 2005:24, 2006:4, 2006:6
cannot - 1964:24, 1965:21
capable - 1965:18,
 1997:24, 1998:12
capacities - 1905:15
caption - 1927:15,
 1929:14, 1930:2, 2003:2,
 2007:1
captions - 1926:8,
 1926:13, 1926:18, 1926:25,
 1927:7, 1927:9, 1927:23,
 1929:3, 2000:17, 2000:21,
 2011:6, 2011:13
captured - 1929:3, 2013:3
care - 1922:11, 1931:3,
 1946:14
career - 2013:12
careful - 1949:20
cart - 1932:23, 1933:3
carts - 1932:15
case - 1918:15, 1968:3,
 1968:6, 1976:24, 1980:20,
 1993:20, 2003:7, 2013:21,
 2013:23, 2013:25
cases - 1915:10
categorized - 2008:2
category - 1981:15
caused - 1925:15, 1957:7,
 1959:10
Cced - 1966:12, 1973:24,
 1974:11
Cds - 1913:15
center - 1983:24
central - 1945:22, 1946:1
certain - 1983:15, 1985:16
certainly - 1955:19,
 1977:24, 1978:2, 1978:3,
 1983:17
Certainly - 1967:5
certify - 2014:10
chain - 1912:11
chairs - 1932:14
chance - 1906:21, 1977:19
chances - 1955:3, 1955:16
change - 1925:3, 1948:1,
 2000:4
changed - 1918:7, 1925:1,
 1941:8, 1941:20
changes - 1929:21
changing - 1944:14
characterization - 1993:4
characterized - 1946:20
cheaper - 1976:7
check - 1944:25
checking - 1913:1
checks - 1970:22
Chernobyl - 1944:18
Chevalier - 1903:20
Chief - 2005:23
Chimahusky - 2003:11,
 2003:13, 2003:21, 2011:10
choice - 1911:15
chosen - 1911:10
circular - 1979:3
circumferential - 1923:16,
 1951:1
circumstance - 1943:23
circumstances - 1959:17
claim - 1989:20, 1990:5
clarify - 1988:16
clarity - 1929:19
classify - 1934:23
clean - 1915:5, 1915:23,
 1946:22, 1947:23, 1955:2,
 1955:3, 1955:14, 1955:16,
 1960:3, 1962:7, 1963:7,
 1963:21, 1964:24, 1965:21,

2010:16, 2010:19
cleaned - 1950:15,
 1950:23, 1951:16
cleaning - 1909:21,
 1946:18, 1946:24, 1947:5,
 1947:20, 1948:18, 1949:1,
 1949:3, 1949:16, 1950:21,
 1951:6, 1951:9, 1951:10,
 1951:20, 1951:23, 1951:24,
 1984:1, 1984:3, 1991:11,
 1993:3, 2001:13, 2003:4,
 2010:23
clear - 1913:19, 1967:5
clearest - 1928:22
clearly - 1919:15, 1984:2
clips - 1913:10, 1913:11,
 1917:25
Cno - 1974:13
Cnrb - 1942:2, 1942:5,
 1998:19, 1999:4, 1999:8
coal - 1976:12
coal-fired - 1976:12
Coincidentally - 1958:11
collaborative - 1917:3
color - 1928:21, 1929:21
coloration - 1937:22
coloring - 1937:15
combination - 1956:25
combine - 1915:13
comfort - 1915:16
comfortable - 1959:18
coming - 1909:19, 1934:1,
 1938:15, 1939:16, 1975:23
command - 1940:14
Commenced - 1905:1
comment - 1999:10
commented - 1936:15
comments - 1937:12
Commission - 1954:12,
 1966:25, 1982:1, 1984:11,
 1988:19, 1991:2, 1991:19,
 1999:15, 2000:2, 2006:14
commissioners - 1988:18
commitment - 1923:1
commitments - 1984:3
committed - 1925:14
Committee - 1955:8,
 1958:9, 1978:19, 1980:2,
 1980:17
committee - 1952:10,
 1953:16
committees - 1977:25
communicate - 2006:3
communication - 1912:9,
 1940:24, 2005:16, 2006:4
company - 1941:23,
 1998:15, 1999:11
company's - 1994:7
compile - 1912:3
compiled - 1926:12,
 1928:12
compiling - 1918:12,
 1926:10, 2011:12
complete - 1985:25,
 1986:9, 1991:11, 1991:17,
 2000:3
completed - 1906:10,
 1919:14, 1949:17
completely - 1950:23,
 1979:5, 2002:14
completeness - 1985:22
completing - 1948:25
completion - 1983:7
compromised - 1983:21,
 1984:14, 1985:7, 1986:4
computer - 1913:7, 1913:8
conceal - 2006:13
concern - 1940:17,
 1974:25, 1981:6, 1981:16,
 1984:10, 1991:1, 1998:4,

1998:6
concerned - 1937:18,
 1940:14, 1964:8, 1964:11,
 1981:17, 2006:1, 2006:6
concerns - 1940:12,
 1944:5
concluded - 1910:9
conclusion - 1977:21,
 2003:1
condition - 1911:24,
 1927:10, 1948:10, 1956:2,
 1979:15
Condition - 1946:2,
 1946:4, 1947:4, 1947:7,
 1947:9, 1947:15, 1948:3
conditioning - 1975:25
conditions - 1959:24
conducted - 1961:2
conference - 1907:5,
 1917:1, 1940:3
confidence - 1909:24,
 1922:7, 2002:10
Conroy - 1904:2
consciously - 1948:22
consensus - 1937:9,
 1945:1
consequence - 1975:4
consequences - 1958:24
conservative - 2013:4
consider - 1974:20,
 2000:1
considerable - 1983:9
considered - 1915:3,
 1948:12, 1950:10, 1950:12,
 1976:15, 1977:3
consist - 1961:1
construct - 1911:10
consumer - 1975:20,
 1976:3
consuming - 1961:12,
 1961:18, 1981:2
contact - 1974:15
contacted - 1974:13
contain - 1986:9
contained - 1908:6,
 1984:12
contains - 1969:17,
 1983:12
contents - 1973:14
context - 1965:6
continue - 1968:8
Continued - 1905:3,
 1959:4, 2015:3
control - 1933:1
controlled - 1932:25
conversation - 1914:5,
 1915:15, 1916:1, 1916:2,
 1916:8, 1921:20, 1921:23,
 1921:25, 1927:20, 1927:21,
 1934:20
conversations - 1908:13,
 1908:15, 1910:2, 1924:2,
 1926:18, 1927:3, 1927:5,
 1927:6, 1927:8, 1956:4,
 2010:2
converted - 1913:14
convey - 1923:3
conveyed - 1920:8
convoluted - 1985:17
Cook - 1904:1
cool - 1959:11, 1975:12,
 1979:10, 1979:12
cool-down - 1979:12
coolant - 1911:14
cooled - 1979:17, 1979:18
coordinate - 1910:14
coordinating - 1988:6,
 1997:17
copied - 1966:13
copies - 1930:24, 1931:1

copy - 1938:9
correct - 1905:11,
 1905:12, 1908:9, 1920:3,
 1920:22, 1922:15, 1932:18,
 1942:4, 1945:23, 1945:25,
 1946:3, 1946:13, 1946:16,
 1946:19, 1947:3, 1947:6,
 1947:18, 1948:24, 1949:4,
 1951:3, 1951:5, 1951:7,
 1951:17, 1953:10, 1953:13,
 1953:15, 1953:18, 1954:9,
 1955:7, 1955:13, 1955:15,
 1957:6, 1957:8, 1957:17,
 1958:1, 1958:5, 1958:13,
 1959:21, 1960:11, 1960:14,
 1961:23, 1962:6, 1962:12,
 1962:21, 1962:24, 1963:5,
 1963:24, 1964:4, 1964:15,
 1965:11, 1966:6, 1966:14,
 1966:19, 1967:1, 1967:20,
 1967:22, 1969:19, 1969:23,
 1970:1, 1970:9, 1970:20,
 1971:14, 1973:2, 1973:5,
 1977:13, 1977:17, 1979:11,
 1982:3, 1982:22, 1984:23,
 1985:1, 1985:4, 1985:5,
 1985:8, 1985:9, 1986:1,
 1986:5, 1986:8, 1987:20,
 1987:23, 1988:7, 1988:20,
 1989:9, 1989:25, 1990:4,
 1990:8, 1990:16, 1990:23,
 1990:25, 1991:21, 1992:8,
 1992:25, 1993:17, 1995:11,
 1995:22, 1996:5, 1996:7,
 1996:9, 1996:18, 1996:22,
 1997:18, 1998:1, 1998:5,
 1998:11, 1998:15, 1998:22,
 1999:1, 2000:8, 2000:18,
 2000:19, 2000:21, 2003:16,
 2006:25, 2007:6, 2008:18,
 2010:14, 2014:10
Correct - 1942:22, 1953:1,
 1953:4, 1954:23, 1959:14,
 1959:18, 1960:5, 1960:8,
 1964:22, 1965:3, 1965:16,
 1965:20, 1966:17, 1970:5,
 1970:15, 1970:18, 1970:21,
 1971:3, 1972:4, 1974:23,
 1975:14, 1976:24, 1983:10,
 1986:14, 1987:6, 1987:25,
 1988:4, 1991:9, 1993:8,
 1994:3, 1994:6, 1994:11,
 1997:12, 1997:15, 1997:21,
 1998:13, 1999:13, 2000:16,
 2000:22, 2000:24, 2001:23,
 2002:9, 2002:18, 2002:20,
 2004:22, 2006:17, 2011:8,
 2012:5
corrected - 2007:2
correcting - 1991:1
corrective - 1948:2,
 1948:6, 1948:7
correlation - 1915:12
corrosion - 2001:15
cost - 1976:17
costly - 1976:17
Counsel - 1954:10,
 1961:25
count - 1948:7
counts - 1948:9
couple - 1916:24, 1982:25
course - 1929:6, 1984:4
Court - 1903:1, 1904:5,
 1929:6, 1930:3, 1945:13,
 1946:8, 1947:13, 1952:17,
 1952:20, 1966:3, 1967:25,
 1968:8, 1968:12, 1968:15,
 1969:4, 1969:5, 1969:6,
 1969:8, 1973:15, 1974:6,
 1984:16, 1986:18, 1988:23,

1988:25, 1991:25, 1996:12,
 1999:1, 2000:11, 2007:9,
 2007:14, 2007:19, 2013:16
court - 1995:12
cover - 1942:18, 1952:23
covered - 1925:6, 1944:6,
 1947:5, 1957:19
Cr - 1947:4, 1947:22,
 1947:24, 1947:25, 1950:16
crack - 1910:15, 1920:15,
 1920:16, 1939:2, 1978:7,
 1978:10, 1978:11, 1978:13,
 1979:3, 1998:2, 1998:12
cracked - 1958:3, 1958:24,
 1977:16, 1981:21
cracking - 1923:16,
 1950:24, 1951:1, 1955:11,
 1958:20, 1959:2, 1960:4,
 1961:7, 1978:3, 1978:5
cracks - 1951:2, 1958:18,
 1977:10, 1977:13, 1977:19,
 1980:9, 1998:18, 1998:20
Crd - 1974:1, 1974:21
Crdm - 1909:14, 1956:1,
 1982:14, 1989:5
Crdms - 1918:14
create - 1910:24, 1919:21,
 1949:9
created - 1927:7, 1992:17
credibility - 1919:19
credit - 1919:6, 1919:15,
 1921:12, 1921:13, 1939:22,
 1941:7, 1941:15, 1966:9,
 1967:11, 2012:8, 2012:10,
 2012:12, 2012:15, 2012:20,
 2012:21
credited - 2001:18
crediting - 1943:6,
 1966:15
crisp - 1913:19
criteria - 1911:25
criticized - 1937:11
cross - 1978:22
Cross - 1945:13, 1945:16,
 2015:5
Cross-examination -
 1945:13, 1945:16, 2015:5
cross-sectional - 1978:22
Crr - 1904:5, 2014:14
crystal - 1915:9, 1983:21,
 1985:12
crystal-like - 1915:9
cubicle - 1912:20, 1915:21
Cummings - 1912:7
current - 1961:10
cut - 1952:7, 1963:17,
 1972:14, 1973:8, 1993:2
cutting - 1963:13, 1963:15

D

Daily - 1944:4
Dale - 1907:17, 1973:16
damage - 1950:8
data - 1921:13, 1944:24
date - 1923:17, 1930:8,
 1942:19, 1942:21, 1954:19,
 1987:14, 1989:23
Date - 2014:14
Dave - 1906:9, 1907:3,
 1917:10, 1920:22, 1925:13,
 1925:14, 1931:9, 1931:14
David - 1903:7, 1903:10,
 1905:3, 1945:16, 2007:23,
 2007:25, 2015:3, 2015:5,
 2015:7
Davis - 1907:1, 1910:10,
 1930:20, 1939:24, 1943:11,
 1944:1, 1944:18, 1944:19,
 1949:17, 1952:2, 1956:9,

1957:4, 1958:2, 1958:10,
1958:19, 1959:12, 1959:25,
1960:9, 1962:8, 1962:11,
1962:14, 1962:22, 1965:9,
1974:19, 1975:5, 1976:23,
1977:9, 1977:15, 1977:18,
1977:22, 1980:8, 1981:25,
1983:19, 2010:6, 2013:6,
2013:13.
Davis-besse - 1907:1,
1910:10, 1930:20, 1939:24,
1943:11, 1944:1, 1944:18,
1944:19, 1949:17, 1952:2,
1956:9, 1958:2, 1958:10,
1958:19, 1959:12, 1959:25,
1960:9, 1962:8, 1962:11,
1962:14, 1962:22, 1965:9,
1974:19, 1975:5, 1976:23,
1977:9, 1977:15, 1977:18,
1977:22, 1980:8, 1983:19,
2010:6, 2013:6, 2013:13
Davis-besse's - 1957:4,
1981:25
day's - 1946:4
days - 1982:25, 1995:13
Dbe - 1996:16
Dc - 1903:15, 1903:18,
1903:22, 1904:3, 1916:25,
1930:10, 1930:19, 1991:21
Dcg - 1908:3, 1969:23,
1986:23
deal - 1905:21
debate - 1946:21
December - 1954:15,
1954:17, 1954:21, 1977:1
decide - 1968:5, 2013:25
decided - 1953:16,
2002:22
decision - 1920:11,
1937:7, 1939:24, 1954:6,
1999:21, 2012:25, 2013:1
deck - 1932:16
Defendant - 1903:8,
1903:19, 1904:1
defer - 1953:16, 1954:6
deferred - 1953:11
definite - 1909:17,
1986:25
definitely - 1928:17
definitive - 1910:24
degree - 1915:16
degrees - 1946:25,
1979:11
delays - 1984:5
demand - 1975:24,
1976:1, 1976:19, 1976:25,
1977:2, 1977:3, 1980:14
denied - 1943:15
Denis - 1904:1
Department - 1903:13,
1903:17
deposit - 1914:13,
1915:10, 1990:6
deposited - 1914:20
deposits - 1935:8,
1955:17, 1983:8, 1983:21,
1983:23, 1985:12, 1989:7,
1995:24
depressurize - 1975:12
depressurized - 1959:11
depth - 1983:9
describe - 1912:23,
1922:2, 1925:20, 1932:9,
1938:14, 1938:22, 1961:2
described - 1905:10,
1979:25, 1990:9, 1990:13
description - 1921:11,
1921:16, 1972:3
design - 1905:21, 1948:14,
1956:11, 1956:16, 1956:18,

1956:19, 1956:21, 1963:23,
1964:1, 1964:3, 1964:5,
1964:8, 1964:13, 1965:1
Design - 1905:16, 1905:18,
1906:1, 1957:16, 1969:17,
1971:4, 1996:16
designing - 1980:3
desired - 1970:22
desk - 1913:6, 1982:24
Desks - 1932:13
despite - 1991:7, 1991:10
detail - 1919:23, 1953:21,
1953:22
details - 1906:20
detection - 1957:11
determine - 1960:4
developed - 1921:18,
1980:11
development - 1910:15,
1975:1
Developments - 1974:2
Developments-urgent -
1974:2
diameter - 1961:6
differed - 1959:5
difference - 1924:17,
1928:17, 1929:17, 2002:24
different - 1911:25,
1915:11, 1915:14, 1919:24,
1928:19, 1944:22, 1948:18,
1957:1, 1957:2, 1957:3,
1958:3, 1973:21, 2002:14,
2004:10
differently - 2009:5
difficult - 1913:20,
1972:17
digital - 1913:15, 1913:21,
1913:23, 1925:23, 1932:7,
1939:12
digitally - 1939:17
dime - 1913:20
Direct - 1905:3, 2015:3
direct - 1997:19, 2001:7,
2006:8, 2006:11
directed - 1981:8
direction - 1912:2, 1912:4,
1926:14
directly - 1912:6, 1912:11,
1992:13, 2010:10
director - 1970:24,
1997:10
Director - 1969:24
disassembles - 1978:6
disassembly - 1975:11
discover - 1960:18
discovered - 1998:14,
1999:9
discuss - 1968:3, 1968:4,
2005:8, 2013:21, 2013:22
discussed - 1907:20,
1910:11, 1910:12, 1916:6,
1921:20, 1968:19, 2002:21
discusses - 1972:10,
1982:14
discussing - 1959:6,
1968:11, 1975:9
discussion - 1912:13,
1915:22, 1918:9, 1940:11,
1946:17, 1952:7, 1953:20,
1953:24, 1953:25, 1972:13,
1973:7, 1999:18, 1999:19,
2005:14, 2005:20, 2005:21,
2012:3
discussions - 1940:9,
1951:8, 2005:18
dispatchers - 1976:7
display - 1946:6, 1947:11,
1953:7, 1957:22, 1962:1,
1964:18, 1966:1, 1969:3,
1969:11, 1982:11, 1986:15,

1988:22, 1991:23, 1993:22,
1996:10, 1998:25, 1999:1
displayed - 1974:7
distortion - 1939:18
distribution - 1953:5
District - 1903:1, 1903:11
Division - 1903:2
docket - 1925:25, 1928:9
Docket - 1903:4
document - 1905:20,
1937:17, 1953:2, 1955:23,
1959:3, 1959:6, 1973:10,
1973:15, 1974:3, 1982:16,
1982:19, 2010:12
documented - 1948:11
documents - 1928:13
done - 1908:11, 1908:25,
1910:20, 1910:22, 1911:12,
1912:9, 1913:16, 1916:6,
1916:7, 1919:3, 1927:23,
1940:1, 1943:13, 1943:22,
1944:22, 1947:21, 1948:3,
1965:10, 1965:15, 1965:18,
1966:8, 1981:23, 1993:9,
1994:16, 1995:10, 1995:17,
2013:1
dose - 1979:20, 1980:7
double - 1944:25
double-check - 1944:25
Doubletree - 1917:1
doubt - 1945:5
Doug - 1917:10
down - 1909:19, 1909:22,
1909:23, 1912:18, 1914:15,
1915:8, 1920:19, 1931:1,
1931:25, 1959:10, 1960:13,
1961:7, 1974:20, 1975:4,
1975:8, 1975:12, 1975:19,
1976:20, 1977:6, 1977:18,
1978:5, 1979:6, 1979:12,
1980:8, 1981:17, 1982:2,
2005:1, 2013:7, 2013:16
downhill - 1914:11,
1914:13, 1915:4, 1935:6
dozen - 1973:21, 1973:22
Dr - 1975:3
drafting - 1926:8, 2011:1
draw - 1977:21
drive - 1915:12, 1934:23,
1934:24, 1961:5, 1978:9,
1979:6, 1994:18
drives - 1919:5, 1919:15,
1921:11, 1934:24, 1936:18,
1941:13, 1960:20, 1960:21,
1960:24, 1961:4, 1994:17,
2001:18, 2001:21, 2001:25,
2002:7, 2012:14
dry - 1927:16
due - 1983:21, 1986:25
Duke - 1955:7, 1984:1
during - 1907:21, 1910:3,
1913:25, 1918:8, 1920:9,
1932:25, 1934:2, 1934:20,
1939:19, 1940:24, 1942:1,
1943:4, 1943:9, 1951:15,
1980:20, 1983:2, 1998:6
dye - 1950:6

E

e-mail - 1940:21, 1941:2,
1941:16, 1954:14, 1954:21,
1955:21, 1957:19, 1957:25,
1958:19, 1964:20, 1966:5,
1966:10, 1973:16, 1974:9,
1974:12, 1974:24, 1981:5,
1993:6, 2008:14, 2008:16,
2012:4
E-mails - 1992:23
e-mails - 1915:22,

1951:25, 1954:10, 1963:19,
1968:20, 1978:1, 1992:16,
2008:1, 2008:3, 2008:12,
2008:19, 2009:4, 2009:9
earliest - 1933:12
early - 1905:6, 2008:23,
2009:10, 2013:7
easier - 1993:10, 2009:2
easy - 1940:15
Ed - 2003:11, 2003:20
eddy - 1961:10
effect - 1950:13
effective - 1959:23
efficient - 1976:16
effort - 1917:3, 1935:24,
1938:11, 1947:5
Efpy - 1981:13
eight - 1907:6, 1932:22
Either - 1976:5
either - 1907:3, 1917:6,
1933:20, 1934:17, 1941:15,
1949:22, 1976:20, 2007:5
electric - 1977:5
electrical - 1977:4
electricity - 1975:20,
1975:21, 1976:4, 1976:5,
1976:12, 1976:21, 1976:22
element - 1919:2, 1956:5,
1963:6
emphasis - 1958:21
emphasizes - 1984:2
end - 1925:19, 1968:6,
1974:20, 1975:4, 1976:1,
1978:14, 1978:25, 1981:17,
1982:2, 1983:10, 2005:1,
2013:25
ended - 1923:7, 1980:6
engagement - 1931:3
engineer - 1911:14,
1944:24, 1989:17
engineer's - 1945:2
Engineering - 1906:10,
1954:4, 1957:16, 1969:17,
1971:5, 1987:9, 1987:16,
1996:17
engineering - 1905:16,
1912:11
engineers - 1908:23,
1925:5, 1927:6
English - 1940:14
Enjoy - 1968:6, 2014:2
enlarge - 1955:25,
1969:20, 1970:19
enlarged - 1952:24,
1964:23, 1986:23
entailed - 1906:6
enters - 1970:22
entire - 1937:4, 1994:14
entitled - 2014:11
environment - 1979:14
equipment - 1928:19,
1946:24, 1950:9, 1980:14,
1980:21
Ermer - 1904:1
error - 1941:22
Eschelman - 1906:9
essence - 1912:10,
1989:16
essentially - 1919:4,
1978:15
established - 1977:8
establishing - 2005:16
et - 1903:7
evaluation - 1948:9,
1983:3
evening - 1931:8
event - 1944:14, 1959:9
events - 1974:12
evidence - 1917:12,
1923:5, 1952:15, 1954:16,

1974:4
evident - 1909:18
exact - 1989:15, 1990:17
exactly - 1916:4, 1916:6, 1919:20, 2005:13
exaggeration - 1988:13
exam - 1966:8
Examination - 1905:3, 2007:23, 2015:3, 2015:7
examination - 1945:13, 1945:16, 1949:14, 1949:19, 1950:5, 1950:14, 2015:5
except - 1976:18
exchange - 1941:2
exclusionary - 1979:20
Excuse - 1952:18
excuse - 1941:12
exhibit - 1942:18, 1942:20, 1952:14, 1953:7, 1955:5, 1957:18, 1962:1, 1969:7, 1989:2
Exhibit - 1907:9, 1907:13, 1917:11, 1923:4, 1923:9, 1923:20, 1924:25, 1929:9, 1942:11, 1946:7, 1947:12, 1952:16, 1952:23, 1954:14, 1957:20, 1961:24, 1964:16, 1965:25, 1969:2, 1969:12, 1971:17, 1973:11, 1978:22, 1981:5, 1982:6, 1982:8, 1986:16, 1988:21, 1991:23, 1996:11, 1998:24, 1999:3, 2000:9, 2009:13
exist - 1959:24
expand - 1920:17
expect - 1955:10
expected - 1919:22, 1935:20, 1975:2
expenditure - 1980:7
expense - 1981:20, 2013:6, 2013:10
expensive - 1961:14, 1976:21, 1977:6, 1981:3, 1981:22, 1981:23
experience - 1911:8, 1983:22, 1984:1
expert - 1941:21
explain - 1913:11, 1914:7, 1915:2, 1993:14, 1995:9
explained - 1935:6
explaining - 1914:3, 1914:10
exposed - 1979:19
expressed - 1974:25
extensive - 1975:11, 1980:7
extraordinary - 1979:24
extremely - 1935:19, 1938:16
eyeball - 1911:18, 1911:21
eyeballs - 1912:1
eyewitness - 1995:8

F

fabricator - 1980:13
face - 1992:15
face-to-face - 1992:15
facilitate - 1913:14
fact - 1909:25, 1941:8, 1944:20, 1951:12, 1958:23, 1967:11, 1972:10, 1977:8, 1981:25, 1987:18, 1989:19, 1990:17, 1991:7, 1991:10, 1993:1, 1993:18, 1995:20, 1997:16, 2003:17, 2004:9, 2005:9, 2012:12, 2013:1
Facts - 1917:18
facts - 1925:1
failure - 2006:25

fair - 1908:7, 1958:17, 1975:6, 1977:10, 1981:2, 1981:16, 1983:14, 1996:25
Fairly - 1975:18
fairly - 1989:21
faith - 1991:17
fall - 1944:9, 1945:3, 1951:14, 1951:15, 1975:24, 1980:8, 1980:20, 1982:21, 1982:22, 1998:6, 1998:14
falls - 1950:7
false - 1945:9, 2009:21, 2010:7
falsify - 1943:20
familiar - 1985:21
family - 1944:1
fancy - 1932:12
far - 1912:8, 1944:1, 2010:19
fast - 1911:19, 1913:18, 1933:21, 1933:22, 1934:7, 1934:13, 1934:17, 1936:13
fast-forward - 1913:18
fast-forwarded - 1933:21, 1934:7
faster - 1934:12
favor - 1963:15
feelings - 1922:10, 1938:14, 2006:2
felt - 1911:17, 1934:3, 1938:17, 1938:20, 1949:2, 2010:9
Fenoc - 1974:13, 1976:20
few - 1924:20
Fifteenth - 1903:22
filed - 1921:23, 1922:21, 1925:17
files - 1925:24
fill - 1938:10
film - 1928:9
final - 2012:18, 2012:22, 2013:1
financial - 1953:14
fine - 1947:13, 1988:23, 1991:25
Fine - 1930:3
finish - 1932:3
finished - 1918:3, 1990:3
finite - 1918:25, 1919:2
fired - 1976:12, 1976:13
first - 1905:7, 1917:18, 1923:11, 1923:12, 1924:3, 1924:21, 1933:1, 1933:7, 1938:8, 1954:11, 1954:14, 1955:25, 1963:11, 1966:23, 1969:15, 1982:4, 1983:10, 1983:11, 1986:23, 1992:23, 1993:1, 1993:13, 1994:1, 1999:4, 2006:8, 2006:24, 2009:12
First - 2009:16
Firstenergy - 2005:19
five - 1918:16, 1958:10, 1958:11, 1958:16, 1967:7, 1977:15, 1998:7
flag - 1917:18, 1918:24, 1919:1
flange - 1909:15, 1914:20, 1956:11, 1960:9, 1967:19, 1986:25, 2001:19, 2002:2, 2002:11
flanges - 1909:19, 1918:16, 1956:1, 1956:9, 1956:22, 1956:24, 1957:2, 1957:4, 1967:7, 1972:11, 1972:25, 2001:12
flew - 1931:5
floor - 1913:2
Floor - 1903:14
flow - 1909:17, 1986:25

flush - 1979:7
fly - 1931:4
focus - 1908:1, 1928:21, 1928:23, 1929:22, 1937:15, 2001:10
focused - 1915:24
follow - 1923:2, 1936:5, 1949:23
follow-up - 1923:2
following - 1960:1
follows - 1923:20
font - 1925:1
foot - 1932:12
foregoing - 2014:10
forest - 1994:24
forget - 1946:20
form - 1984:15
format - 1928:11
format - 1913:15, 1913:21
forward - 1906:12, 1913:18, 1913:22, 1933:22, 1933:23, 1934:17, 1936:14
forwarded - 1933:21, 1934:7
forwarding - 1934:13
four - 1911:6, 1919:4, 1942:2, 1958:16, 1977:11, 1992:7, 1998:7, 2012:9
Framatome - 1906:23, 1908:14, 1910:2, 1966:11, 1980:12
frame - 1913:23, 1983:2, 2002:14
frames - 1914:1, 1914:21
free - 1918:1, 1989:6, 1989:13, 1989:23, 1990:6, 1995:24
Friday - 2004:22
front - 1913:7, 1923:9
frustrated - 1935:17, 1935:19, 1938:16, 1939:5, 1939:7
full - 1997:24
function - 1983:1
funded - 1980:16
furnished - 2000:14
future - 1984:13
Fyitch - 1966:11
Fyi - 1955:22, 1956:2

G

gain - 1908:20
gap - 1958:15, 1997:23, 1998:2, 2001:22, 2002:17, 2006:22, 2012:3
gaps - 1914:11, 1919:3, 1919:5, 1940:22, 1941:8, 1941:17, 1942:2, 1998:16, 1999:9, 1999:12, 2012:11
garbage - 1938:23, 1938:24, 1939:8
gas - 1976:9, 1976:12
gasket - 1956:13, 1956:25
Gaskets - 1956:23
gaskets - 1956:24, 1957:3
gather - 1919:8
gathered - 1940:3
gathering - 1908:10
Geisen - 1903:7, 1903:20, 1905:3, 1905:5, 1907:13, 1930:1, 1930:5, 1943:9, 1945:16, 1945:18, 1968:10, 1968:19, 1974:9, 1996:17, 2007:23, 2015:3, 2015:5, 2015:7
general - 1911:23, 1965:13
generate - 1925:15, 1948:14, 1976:11

generated - 1947:23, 1948:2, 1976:17, 1976:22
generating - 1948:7, 1948:11, 1975:20
gentlemen - 1967:25, 2013:17
Gibbs - 1982:9, 1985:15, 2009:25, 2010:3, 2010:5, 2010:9
Gibbs' - 2009:12
Given - 1983:22
given - 1910:13, 1938:19, 1943:13
glare - 1928:24, 1936:19, 1937:15
Glenn - 1912:6
Gordon - 1904:1
Government's - 1907:9, 1907:13, 1917:11, 1923:4, 1923:20, 1924:24, 1929:9, 1942:11, 1946:7, 1947:12, 1954:14, 1957:20, 1961:24, 1964:16, 1965:25, 1969:2, 1969:11, 1971:17, 1973:11, 1978:22, 1981:5, 1982:6, 1982:8, 1986:16, 1988:21, 1991:23, 1996:10, 1998:24, 1999:3, 2000:9, 2009:13
Goyal - 1954:15, 1954:22, 1955:23, 1957:20, 1962:5, 1963:11, 1964:20, 1966:5, 1978:1, 1992:16, 1995:12, 1995:13, 1996:1, 2003:24, 2004:10, 2008:6, 2008:19, 2008:24
grabbed - 2005:8
greensheet - 1905:10, 1905:13, 1968:24, 1969:14, 1970:11, 1970:17, 1972:21, 1972:22, 1972:24, 1996:8, 1996:14, 1997:3, 2010:16, 2011:4
grid - 1976:2, 1976:7
grind - 1978:13
Group - 1952:2, 1952:3, 1952:5, 1952:6, 1952:24
group - 1906:14, 1906:15, 1908:17, 1908:22, 1916:23
grow - 1998:3
growth - 1910:15, 1920:15, 1920:17, 1939:2
guess - 1910:19, 1919:22, 1925:15, 1925:22, 1933:16, 1948:15, 1950:21, 1983:10
guy - 1935:16, 1936:21, 1940:7
Guy - 2005:6, 2005:8
guys - 1910:21

H

half - 1973:22
hand - 1930:25, 1971:17, 1973:10
handful - 1990:21
handouts - 1930:25
happy - 1935:15
hard - 1907:2
harder - 1955:19
head - 1908:8, 1908:11, 1908:19, 1909:13, 1911:8, 1911:13, 1911:24, 1915:23, 1921:18, 1927:10, 1935:7, 1936:22, 1941:11, 1944:18, 1946:17, 1946:22, 1947:23, 1949:13, 1949:18, 1950:15, 1950:21, 1950:22, 1951:16, 1951:20, 1952:8, 1955:2, 1955:3, 1955:14, 1955:16, 1956:1, 1957:7, 1958:12,

1959:13, 1959:24, 1960:3, 1960:4, 1960:6, 1960:10, 1960:13, 1960:17, 1960:23, 1962:8, 1963:7, 1963:14, 1963:16, 1963:20, 1964:2, 1964:24, 1965:2, 1965:21, 1966:8, 1974:21, 1975:11, 1975:13, 1975:16, 1977:16, 1978:6, 1978:23, 1979:8, 1979:9, 1979:14, 1979:23, 1983:8, 1983:20, 1983:23, 1983:24, 1984:2, 1985:3, 1986:24, 1990:6, 1992:17, 1993:3, 1994:14, 1997:24, 1998:4, 1998:7, 2000:7, 2001:11, 2001:14, 2010:16, 2010:19
Head - 1951:23, 1951:24
heading - 1952:24,
 2008:13, 2008:15, 2008:21
headquarters - 1906:16
hear - 2005:11
heard - 1941:20, 1982:23, 1996:1
heat - 1958:3, 1958:10, 1958:18, 1958:20, 1959:2, 1977:5, 1977:15
heating - 1976:1, 1977:4
heats - 1957:25
held - 1932:11
help - 1973:23
helped - 1913:14
Hibey - 1903:21, 1952:18
hide - 1938:11
high - 1975:25, 1977:3, 1979:20, 1980:14, 1981:11, 2005:18
high-level - 2005:18
higher - 1976:18
Hiser - 1910:16, 1932:24, 1987:21, 1988:1
historically - 1977:4
Historically - 1930:21
history - 1957:4
hold - 1979:13
hole - 1934:1, 1944:18, 1963:17, 2010:21
holes - 1915:11, 1962:9, 1963:8, 1963:14, 1963:15, 1963:24, 1964:25, 1965:22, 1972:14, 1972:18, 1973:4, 1983:25, 1984:5, 1992:18, 2010:22
homes - 1977:5
honest - 1951:12
honesty - 1940:18
Honor - 1929:5, 1929:23, 1945:11, 1946:7, 1952:15, 1952:18, 1954:16, 1957:21, 1962:1, 1964:17, 1966:1, 1967:23, 1969:3, 1971:19, 1974:3, 1982:11, 1988:21, 1991:22, 1993:22, 1996:11, 2000:9, 2007:17
Honorable - 1903:10
hot - 1946:25, 1947:2, 2010:19
hotel - 1940:2
Hotel - 1917:1
Hotsy - 1946:24
Hotsy-totsy - 1946:24
hour - 1912:22, 2013:18, 2014:3
huddled - 1932:23, 1933:2
hue - 1929:21
huge - 1944:14
human - 1979:22
hydroelectric - 1976:13, 1976:14

I

ideal - 2010:20
identical - 1924:21
identified - 1948:5
images - 1929:3, 1929:25, 1939:12
imagine - 1943:22
immediately - 1950:2, 1985:13
impeded - 1975:15
impediment - 1972:11, 1972:18, 1972:25, 1973:4, 1992:18, 2010:12
impediments - 1972:3, 2006:23
implies - 1918:11
imply - 1918:13
important - 1955:2, 1955:14, 1989:17, 1989:18
impossible - 1950:14, 1993:19
inability - 1935:18
inaccurate - 1907:24, 1918:22, 1920:8, 1928:1, 1984:12, 2009:15, 2009:19, 2010:7
incapable - 1958:15
incident - 1944:19
include - 1921:8
includes - 1971:24
incorrect - 1981:13, 1983:14
incurred - 2013:6
indicate - 1915:7
indicated - 1914:14, 1918:8, 1920:13, 1920:18, 1920:19, 1925:9, 1937:2, 1998:17
indication - 1967:5, 1998:3
indications - 2002:3
indicative - 1965:18
indignatious - 1943:16
individual - 1970:24, 1991:11, 1997:10, 1997:13
individuals - 2011:16
industry - 1943:24, 1944:15, 1944:16, 1977:9, 1977:25, 1984:1
inexpensive - 1981:22
information - 1906:2, 1908:6, 1908:10, 1908:21, 1910:3, 1910:5, 1910:18, 1910:21, 1917:20, 1917:22, 1918:21, 1919:8, 1919:11, 1919:18, 1920:2, 1920:7, 1920:9, 1920:14, 1920:16, 1920:22, 1923:3, 1923:15, 1923:25, 1924:4, 1924:6, 1924:9, 1941:25, 1942:5, 1942:25, 1943:5, 1943:20, 1945:5, 1958:8, 1963:18, 1983:14, 1984:13, 1986:10, 1987:3, 1987:8, 1991:1, 1992:14, 1994:10, 1994:20, 1994:22, 1996:24, 1997:5, 1998:19, 1999:14, 1999:20, 2000:1, 2000:20, 2001:1, 2002:23, 2003:11, 2003:15, 2003:18, 2006:15, 2006:19, 2006:22, 2006:25, 2007:6, 2011:12, 2012:23, 2013:2
inhospitable - 1979:18
initials - 1908:3, 1908:4, 1969:17, 1969:21, 1996:17
initiated - 1954:3
Initiator - 1970:22
Inpo - 1983:3, 2004:21,

2005:5
inside - 1979:8
inspect - 1959:12, 1960:3, 1960:13, 1960:18, 1962:8, 1963:7, 1975:8, 1985:13, 2005:1
inspected - 1909:14, 1941:14, 1992:7, 1992:12, 1993:15, 1994:5
inspecting - 1919:16
inspection - 1909:11, 1909:12, 1911:12, 1911:16, 1912:12, 1913:9, 1915:24, 1916:5, 1918:13, 1919:6, 1919:23, 1920:16, 1935:1, 1935:21, 1936:4, 1940:6, 1940:7, 1944:24, 1949:22, 1950:2, 1950:8, 1950:10, 1950:20, 1951:22, 1951:23, 1955:1, 1955:3, 1955:9, 1955:11, 1959:7, 1959:17, 1959:23, 1960:6, 1960:17, 1960:21, 1961:19, 1961:20, 1963:21, 1966:9, 1966:16, 1967:5, 1967:6, 1967:9, 1967:11, 1967:15, 1967:18, 1972:11, 1972:18, 1973:1, 1974:21, 1975:15, 1975:16, 1978:6, 1981:20, 1982:14, 1984:3, 1984:4, 1985:4, 1985:15, 1986:7, 1986:13, 1986:24, 1987:14, 1992:18, 1992:19, 1993:3, 1993:19, 1994:2, 1994:9, 1994:15, 1994:16, 1994:21, 1995:8, 1995:9, 1995:15, 1995:18, 2001:8, 2003:23, 2004:16, 2004:18, 2004:21, 2005:5, 2006:23, 2009:2, 2012:9, 2012:14
inspections - 1906:3, 1908:8, 1908:11, 1908:19, 1908:24, 1909:5, 1909:7, 1911:8, 1918:12, 1925:5, 1927:23, 1939:22, 1943:6, 1964:10, 1965:10, 1965:15, 1965:17, 1971:25, 1972:15, 1977:10, 1983:20, 1984:13, 1985:7, 1986:3, 1987:22, 1990:14, 1990:17, 1993:9, 1993:12, 2009:2, 2010:20, 2010:21, 2011:1, 2012:21
installation - 1963:24
installed - 1979:15
installing - 1953:9
instead - 1910:19, 1945:1, 1979:6
instruction - 1943:14
instructions - 1970:10, 1970:16, 1970:19, 1997:7, 2013:20
integrity - 1919:3, 1943:17, 1943:25
Integrity - 1919:7, 1940:21
intended - 1919:25, 1949:3, 1990:18, 1995:9
intent - 1910:19, 1911:22, 1965:13
interacting - 2009:7
interaction - 1905:8
interrupt - 1968:12
interrupting - 1943:3
interruption - 1968:16
intersection - 1914:13, 1915:5, 1935:7
interviews - 1925:4, 1925:8
introduced - 2008:14
Investigation - 2003:20
investigation - 2004:6

investigators - 2003:7
involved - 1905:23, 1906:25, 1920:23, 1926:6, 1926:8, 1926:10, 1943:10, 1945:21, 1946:17, 1947:7, 1951:8, 1977:25, 1994:21, 2000:5, 2010:25, 2011:1
involvement - 1997:20
Island - 1944:17
issue - 1948:15, 1949:9, 1958:21, 1963:23, 1964:5, 1964:7, 1997:22, 1998:1
issues - 1946:15, 1968:5, 2013:24
item - 1987:24, 1988:3
itself - 1918:14

J

January - 1977:1, 2008:1, 2008:3
Jco - 1959:4, 1959:16
job - 1915:16, 1915:17, 1922:6, 1944:9, 1964:9
John - 1904:2, 1912:7
Judge - 1903:11
judgments - 1914:8
July - 1952:11
jurors - 1950:4, 1969:7
jury - 1905:7, 1906:25, 1907:10, 1909:11, 1913:12, 1916:20, 1917:22, 1918:6, 1924:4, 1924:17, 1925:20, 1929:24, 1932:10, 1936:11, 1938:14, 1953:8, 1953:22, 1955:25, 1961:2, 1964:18, 1966:2, 1969:3, 1969:20, 1974:7, 1978:21, 1982:12, 1982:15, 1986:16, 1988:22, 1990:1, 1996:11, 1998:25, 2001:5, 2003:17
jury's - 2004:9
Justice - 1903:13, 1903:17
justification - 1959:15, 1959:16, 1960:12
Justification - 1959:4

K

Katz - 1903:10
keep - 1939:6, 1943:4, 1979:2, 2013:1
Ken - 1920:14, 2012:18
kept - 1939:3
keyboard - 1913:22
killing - 1911:19
kind - 1917:2, 1932:3, 1932:10, 1932:23, 1935:10, 1938:19, 1949:13, 1949:17, 1981:18, 1986:7
Kinko's - 1931:1
knowing - 1995:2, 2002:10
knowingly - 1945:9
knowledge - 1943:1, 1970:6, 2001:3, 2010:5, 2011:14, 2011:15
knowledgeable - 1978:1
known - 1946:12

L

lack - 1963:22, 2010:22
Ladies - 1967:25, 2013:17
language - 1940:14, 1984:8, 2001:10, 2004:25, 2006:25, 2011:20
last - 1909:11, 1924:22, 1930:22, 1931:1, 1941:17, 1947:15, 1983:13

last-minute - 1930:22, 1931:1
late - 1905:6, 1931:5
lead - 1980:5, 2005:15
leak - 1956:1, 1965:19, 2001:25, 2002:8
leakage - 1909:15, 1909:17, 1911:23, 1914:14, 1914:15, 1914:20, 1956:24, 1957:11, 1960:9, 1966:8, 1967:19, 1986:25, 1987:1, 2001:20, 2002:2, 2002:12
leaking - 1956:8, 1956:13, 1957:5, 1963:19, 1967:7, 2001:12, 2001:18
leaks - 1977:13
learn - 1931:7, 2004:4
learned - 1919:11, 1931:21, 1931:24, 1951:16, 1954:24, 1954:25, 1955:24, 2002:7, 2008:20
least - 1928:23, 1950:15, 1985:3
leave - 1929:24, 1937:24, 1938:2
left - 1937:24, 1938:5, 1943:24, 1968:10, 1976:6, 1982:24, 1985:3
Leslie - 1920:23
less - 1935:13, 2013:4
lessons - 1954:24, 1954:25, 1955:24, 1960:2, 1960:3, 2008:20
Letter - 2000:14
letter - 1982:14, 1984:11, 1985:2, 2000:6, 2009:14, 2009:16, 2009:25
level - 2005:18
licensee - 1985:24, 2004:24
lie - 1943:11, 1943:20, 1945:7, 2006:10
life - 1944:14
life-changing - 1944:14
lifting - 1950:13
light - 1928:24, 1936:18
lighting - 1929:15
likely - 1909:11, 1983:23
limitation - 1964:2
limited - 1973:3, 1973:5, 1992:17, 2010:12
line - 1937:12, 1973:20, 1980:21, 1980:24, 1981:9, 2005:16
lines - 1934:11
list - 1947:10, 1947:24, 1948:5, 1948:6, 1948:19
listen - 2013:23
live - 1944:1
load - 1976:7
loaded - 1976:14
loads - 1975:25, 1976:1, 1977:4
located - 1960:19
location - 1910:24, 1910:25, 2001:12, 2003:3
Lockwood - 1917:10, 1920:22, 1921:1, 1921:2, 1925:14, 1931:9, 1931:14, 1938:8, 1941:3, 1999:25, 2005:15
Lockwood's - 1907:4
logical - 1911:15
look - 1911:23, 1915:6, 1917:18, 1918:24, 1923:6, 1923:11, 1924:3, 1928:12, 1929:4, 1929:13, 1934:5, 1944:9, 1951:25, 1952:14, 1961:7, 1970:13, 1981:8, 1993:6, 1997:7, 1999:5,

2009:4, 2009:18
looked - 1906:7, 1915:7, 1917:25, 1928:16, 1932:5, 1932:8, 1932:10, 1992:19, 2008:23, 2009:7
looking - 1905:19, 1905:20, 1909:25, 1910:23, 1911:24, 1914:4, 1914:10, 1914:12, 1914:14, 1914:17, 1915:6, 1926:5, 1927:3, 1932:7, 1935:6, 1935:8, 1950:18, 1952:23, 1970:14, 2002:1
looks - 1909:12, 1973:20, 1973:24
louder - 1952:21
low - 1976:25, 1977:1
lowest - 1975:24
lunch - 2013:19, 2014:2

M

machine - 1933:13, 1933:14, 1933:17, 1936:3, 1978:9, 1978:14, 1979:1
machining - 1978:10, 1979:2, 1979:25
mail - 1940:21, 1941:2, 1941:16, 1954:14, 1954:21, 1955:21, 1957:19, 1957:25, 1958:19, 1964:20, 1966:5, 1966:10, 1973:16, 1974:9, 1974:12, 1974:24, 1981:5, 1993:6, 2008:14, 2008:16, 2012:4
mails - 1915:22, 1951:25, 1954:10, 1963:19, 1968:20, 1978:1, 1992:16, 1992:23, 2008:1, 2008:3, 2008:12, 2008:19, 2009:4, 2009:9
man - 1912:11, 2004:15
manage - 1910:14
management - 1970:24, 1971:6, 1997:10, 1997:13
manager - 1905:16, 1921:2, 1945:24, 1952:4, 1964:13, 1991:15, 1996:16
Manager - 1905:18, 1906:1, 1906:10, 1957:16, 1969:18, 1971:5
manager's - 1913:2
managers - 1946:4, 2005:8
manually - 1980:6
maps - 1921:18
March - 1957:19, 2008:1, 2008:3
Mark - 1919:9, 1941:1, 2009:17, 2013:3
matter - 2004:9, 2014:11
mattered - 1941:5
Mcintyre - 1908:20, 1912:6
Mcintyre's - 1908:16
McLaughlin - 1913:13, 1919:9, 1921:18, 1940:20, 1941:1, 1941:3, 1941:20, 1999:19, 1999:22, 2009:17, 2010:2
mean - 1906:18, 1909:2, 1911:1, 1911:13, 1912:8, 1913:10, 1913:12, 1919:22, 1926:23, 1937:15, 1938:17, 1938:18, 1938:24, 1939:15, 1943:17, 1943:24, 1944:13, 1944:15, 1944:17, 1949:9, 1960:15, 1982:23, 2002:11, 2003:19, 2006:6
meaning - 1966:9
means - 1983:24, 1995:8,

1998:10
measures - 1979:24
mechanical - 1904:9, 1908:17, 1983:24, 1984:1, 2001:13, 2003:4
mechanism - 1961:5, 1978:8
meet - 1912:21, 1922:25
Meeting - 1952:24
meeting - 1906:22, 1906:23, 1908:12, 1912:19, 1913:2, 1913:25, 1916:9, 1916:12, 1916:14, 1916:16, 1916:18, 1917:4, 1917:7, 1917:9, 1918:2, 1919:10, 1920:9, 1922:21, 1922:24, 1923:2, 1923:17, 1923:23, 1925:13, 1930:15, 1931:18, 1931:25, 1932:2, 1932:9, 1932:10, 1932:13, 1932:20, 1932:25, 1938:15, 1939:19, 1942:1, 1942:8, 1942:9, 1942:17, 1942:19, 1942:21, 1952:5, 1952:10, 1987:10, 1988:17, 1991:18, 1991:19, 1991:24, 1999:4, 1999:24, 2002:21
meetings - 1930:14, 1930:17, 1932:1, 1952:6, 2005:13
megawatt - 1976:17
member - 1934:16, 1952:1, 1952:3
memo - 1986:12
mention - 1953:8
mentioned - 1929:20, 1985:13
merely - 1993:8
message - 1912:12
messages - 1963:19
met - 1923:2
metal - 1932:15, 1979:2
methodology - 1915:18, 1927:2, 1978:9, 1988:11
methods - 1975:17
microfiche - 1928:10
mid - 1967:21, 1968:1, 1980:12, 2008:23
mid-morning - 1968:1
might - 1909:6, 1922:16, 1952:11, 1954:2
mike - 1952:18
Mile - 1944:17
miles - 1944:2
Miller - 1903:20, 1973:16, 1981:10
Miller's - 1906:21, 1907:17, 1907:20, 1907:23, 1908:7, 1909:10, 1909:25, 1910:4, 1986:16, 1987:11, 2008:16
mind - 2013:24
minds - 1968:5
minute - 1930:22, 1931:1, 1973:12, 1975:9, 1992:5
minutes - 1924:20, 1942:2, 1952:10, 1968:1, 1999:4, 1999:8, 2013:18
Minutes - 1952:24
misimpression - 1929:24
mislead - 1943:11
misleading - 2009:23, 2010:7
Misleading - 1928:3
misplaced - 2002:12
missed - 1926:21
missing - 2006:24
misstate - 1954:19
mistake - 1954:8
mistaken - 1999:10

Mod - 1954:1
Mode - 1959:8, 1959:11, 1960:16
mode - 1947:9, 1947:19, 1947:22, 1947:24, 1948:1, 1948:4, 1948:6, 1948:19, 1948:22, 1948:23, 1950:13, 1950:16
model - 1910:15, 1920:15, 1939:2, 1941:6, 1953:25, 1978:22
modification - 1963:2, 1963:3, 1963:25
modified - 1957:1
Moffitt - 1905:17, 1906:5, 1910:13, 1916:2, 1916:8, 1919:17, 1920:1, 1920:21, 1921:21, 1922:1, 1922:3, 1922:7, 1922:14, 1922:17, 1931:4, 1931:10, 1969:22, 1990:24, 2005:4
Moffitt's - 1907:3, 1999:18
moment - 1981:1
Monday - 1906:19
money - 2013:13
monitor - 1932:14, 1978:12
month - 1921:5, 1925:19
morning - 1905:5, 1913:2, 1931:5, 1939:1, 1939:10, 1945:18, 1945:19, 1968:1, 1974:13
Most - 1975:23
most - 1908:18, 1914:12, 1928:23, 1984:4, 2012:18
mouse - 1915:11, 1934:1, 1964:24, 1965:22, 1973:4, 1983:25, 1992:18, 2010:21
move - 1974:3, 1993:21, 1995:6
Moving - 1964:16
Mrp - 1981:12
multiple - 1915:11, 1972:23
multiple-part - 1972:23
mumbled - 1956:17
must - 1928:21, 2002:11

N

name - 1946:24
Navy - 1948:10
Nde - 1949:23, 1950:2, 1950:4, 1950:7, 1950:9, 1950:10, 1960:25, 1961:1, 1975:16, 1985:14
near - 2012:14
nearly - 1929:22
necessarily - 1939:14
necessary - 1945:3, 1993:2
necessitated - 1960:22
necessitating - 1975:16, 1981:22
need - 1920:22, 1949:13, 1962:7, 1963:7, 1983:23, 1984:2, 1993:6
needed - 1912:5, 1912:12, 1920:15, 1940:4, 1962:11, 1962:23, 1963:1, 1965:15, 1965:17, 1981:2
needs - 1948:2, 1963:20, 1963:21
never - 2004:11, 2007:1, 2007:3
New - 1903:14
new - 1945:24, 1955:6, 1978:15, 2007:3
Next - 1965:25
next - 1910:10, 1917:4,

1921:3, 1928:24, 1928:25, 1931:5, 1938:23, 1939:1, 1939:20, 1955:23, 1957:18, 1960:18, 1969:17, 1969:21, 1983:11, 1987:24
nice - 1913:19
night - 1916:22, 1930:23, 1931:3, 1931:12, 1931:20, 1937:24
nine - 1958:3, 1958:17, 1977:16
nitpicky - 1993:11
nobody - 1963:15, 2004:4
nomenclature - 1959:5
non - 1981:9
non-b&w - 1981:9
nondestructive - 1950:4
Nondestructive - 1950:5
Normally - 1953:24
normally - 1908:25
Northern - 1903:1
northwest - 1977:3
Note - 1962:8
notereading - 1904:9
notes - 1906:21, 1906:22, 1907:17, 1907:20, 1907:24, 1908:7, 1909:10, 1909:25, 1910:4, 1986:16, 1986:21, 1987:10, 1987:11
Nothing - 1932:12, 1984:9
nothing - 1985:10
notice - 1928:15
November - 1930:9, 1930:11, 1938:11, 1940:21, 1940:25, 1941:16, 1941:24, 1942:8, 1942:13, 2009:8, 2012:3
nozzle - 1909:14, 1910:16, 1910:17, 1910:18, 1910:24, 1910:25, 1911:11, 1911:23, 1912:5, 1912:12, 1912:17, 1914:8, 1915:2, 1915:3, 1918:3, 1919:21, 1921:15, 1935:7, 1935:11, 1935:13, 1955:11, 1957:11, 1958:23, 1959:2, 1960:4, 1961:6, 1963:20, 1965:19, 1966:8, 1987:22, 1988:5, 1988:9, 1988:14, 1990:3, 1992:7, 1992:11, 1994:8, 1994:13, 1997:23, 1998:2
Nozzle - 1958:25, 1974:1
nozzle-by-nozzle - 1910:16, 1910:17, 1910:18, 1911:11, 1912:5, 1912:12, 1912:17, 1918:3, 1919:21, 1921:15, 1987:22, 1988:5, 1988:9, 1988:14, 1990:3, 1994:8, 1994:13
nozzles - 1909:16, 1914:22, 1914:24, 1914:25, 1923:16, 1925:22, 1935:10, 1958:2, 1958:3, 1958:9, 1958:11, 1958:14, 1958:17, 1958:19, 1958:23, 1959:1, 1960:25, 1974:22, 1977:14, 1977:16, 1981:21, 1990:21, 1995:21, 1998:7, 2012:9, 2012:12
Nrc - 1905:8, 1906:16, 1907:18, 1920:25, 1921:4, 1921:9, 1922:22, 1924:5, 1925:10, 1925:18, 1925:21, 1926:1, 1928:1, 1928:11, 1930:6, 1930:11, 1931:6, 1931:8, 1932:2, 1932:19, 1935:25, 1936:14, 1937:18, 1937:24, 1938:2, 1938:12, 1939:3, 1939:20, 1939:25, 1940:6, 1942:8, 1943:11,

1945:7, 1945:9, 1968:21, 1970:23, 1984:3, 1985:22, 1985:25, 1986:3, 1992:24, 1996:3, 1997:9, 1999:20, 2000:6, 2002:22, 2002:23, 2005:17, 2006:10, 2006:19, 2009:8, 2012:23, 2013:2
Nrc's - 1943:3
Nuclear - 1941:24, 1954:11, 1966:24, 1982:1, 1984:11, 1988:18, 1991:2, 1991:19, 1999:11, 1999:14, 2000:2, 2005:23, 2006:14
nuclear - 1944:16, 1948:8, 1975:19, 1975:23, 1991:15
number - 1930:24, 1935:13, 1938:8, 1942:20, 1990:21, 2006:18
Nw - 1903:14, 1903:22, 1904:3

O

Objection - 1983:16, 1984:15, 1987:4, 2007:8
objection - 1974:5
obligation - 1971:12
obscure - 1960:19
observations - 2000:23
observed - 1955:1, 1955:4, 2001:11
obviously - 1906:9, 1953:24, 1974:10, 1974:11
occasion - 1946:1
occur - 1921:23, 1978:24
occurred - 1916:9, 1951:2, 1978:21, 2004:21
occurring - 1957:12
Oconee - 1915:23, 1951:2, 1954:24, 1955:1, 1955:4, 1955:8, 1955:17, 1955:24, 1958:4, 1958:9, 1958:18, 1960:3, 1977:12, 1977:14, 1980:3, 1981:13, 2008:20
October - 1903:5, 1905:6, 1905:9, 1906:12, 1906:13, 1906:24, 1907:17, 1909:4, 1909:8, 1910:9, 1911:7, 1916:9, 1916:12, 1919:10, 1921:6, 1922:22, 1923:1, 1923:18, 1924:19, 1989:24, 1991:18, 1996:4, 1998:25, 2009:8
offered - 1937:11
office - 1907:3, 1907:4
Office - 2003:19
Officer - 2005:23
offices - 1907:4
offline - 1959:11, 1975:19, 1975:23, 1981:22
often - 1944:3, 1959:3
Ohio - 1903:1, 1903:5, 1904:6, 1977:2, 1977:3
oil - 1976:13
oil-fired - 1976:13
Once - 1936:20
One - 1973:19, 1997:2, 2002:20, 2006:13
one - 1910:14, 1910:15, 1911:12, 1913:2, 1913:23, 1915:13, 1917:16, 1918:25, 1923:7, 1923:19, 1924:20, 1928:25, 1929:3, 1930:15, 1931:11, 1932:14, 1933:10, 1933:11, 1933:12, 1934:1, 1935:12, 1935:14, 1938:8, 1939:7, 1946:3, 1950:18, 1954:14, 1956:13, 1958:23, 1961:24, 1963:21, 1966:7, 1966:19, 1968:24, 1969:10,

1975:8, 1979:21, 1983:13, 1989:12, 1989:13, 1990:11, 1992:4, 1993:11, 1994:4, 1996:19, 1997:1, 1998:17, 2001:6, 2001:17, 2001:21, 2002:3, 2004:7, 2006:21, 2008:14, 2012:20
open - 1914:11, 1919:3, 1919:5, 1940:22, 1941:8, 1941:13, 1941:14, 1941:17, 1942:3, 1998:2, 1998:8, 1998:16, 1998:18, 1998:20, 1998:21, 1999:9, 1999:12, 2001:22, 2001:25, 2002:7, 2002:11, 2002:15, 2002:17
opened - 2012:11
opening - 1953:9, 1953:19, 1954:7, 1997:24
openings - 1962:23, 1962:25
operate - 1965:12, 1965:14, 1982:4
operating - 1933:3, 1933:5
Operation - 1959:4
operation - 1943:19
opposed - 1924:18
optics - 1928:22, 1937:16, 1937:22, 1939:16
order - 1947:23, 1948:5, 1965:14
orientation - 1994:9
original - 1911:22, 1929:25, 1956:21, 1964:3, 1985:17
originally - 1918:7, 1990:18
outage - 1910:25, 1911:1, 1918:15, 1919:16, 1927:10, 1945:20, 1945:22, 1946:1, 1950:14, 1953:11, 1963:4, 1980:7, 1982:4, 1984:5, 1984:7, 1994:2
outages - 1911:2, 1926:17
outline - 1987:24
over-characterization - 1993:4
overall - 1918:12
Overruled - 1984:16
own - 2000:23, 2001:3
owned - 1911:13

P

package - 1923:6, 1942:16
page - 1917:11, 1923:4, 1923:9, 1929:9, 1929:11, 1947:11, 1947:15, 1952:23, 1953:7, 1962:1, 1966:21, 1969:3, 1969:11, 1969:14, 1971:24, 1988:22, 1992:2, 1993:23, 1993:25, 1998:25, 1999:4, 1999:5, 2001:6, 2009:12, 2009:18
pages - 1924:14, 1991:23
paid - 1906:2
paper - 1948:7, 1948:11
paperwork - 1938:9
Paragraph - 1982:14
paragraph - 1923:11, 1923:12, 1929:13, 1964:23, 1983:10, 1983:12, 1994:1
paragraphs - 1924:3
Pardon - 1972:7
part - 1911:13, 1924:22, 1926:21, 1931:15, 1953:16, 1971:6, 1972:23, 1986:23, 1995:9, 1999:24, 2009:10
participated - 1911:16, 1927:25, 2002:21, 2005:20
participating - 1930:18

particular - 1914:8, 1915:12, 1953:25
parts - 1926:23, 1935:25, 1936:6, 1950:15
passes - 1979:4
past - 1906:2, 1908:8, 1908:11, 1909:4, 1909:7, 1913:9, 1927:23, 1939:22, 1944:23, 1971:25, 1991:5, 1993:9
path - 1920:20
pause - 1913:17, 1913:18, 1934:17, 1972:8
paused - 1933:20, 1936:16, 1939:18
pay - 1958:6
peak - 1976:19
peaker - 1976:2, 1976:6, 1976:10, 1976:11, 1976:15, 1976:21
penetrant - 1950:6
penetrations - 1989:6, 1989:13, 1989:22, 1992:7, 1992:11, 1995:24
people - 1905:23, 1906:7, 1906:15, 1906:25, 1907:6, 1908:16, 1927:22, 1932:19, 1964:8, 1964:10, 1970:4, 1973:17, 1973:18, 1973:21, 1973:25, 1974:25, 1976:4, 1977:18, 1977:22, 1994:21, 1997:2, 2000:25, 2005:19, 2010:25
People - 1970:6
per - 1976:17, 1981:12
percent - 1909:24, 1961:11, 1967:18, 1986:24, 1995:17, 1995:21
perform - 1974:21
performance - 1944:9
performed - 1925:5
perhaps - 1948:13
period - 1976:25
periods - 1977:2
permission - 1931:4
permit - 1968:4, 1972:14, 1993:3, 1993:9, 2013:22
permits - 1969:4
person - 1935:1, 1935:2, 1940:4, 1940:5, 1951:9, 1951:19, 1971:5, 1980:4, 1991:14, 1994:16, 1996:23, 2004:17, 2011:17
personal - 1931:3, 1987:10
personally - 1906:21, 1927:22, 2007:1
personnel - 1916:24
persons - 1991:20
persuade - 1982:1
pertinent - 1905:21
phone - 1906:17, 1906:18, 1909:4, 1909:8, 1910:9, 1910:12, 1974:16, 1975:2, 1987:21, 2004:19, 2004:21, 2004:23, 2005:3, 2005:5, 2005:10, 2005:11, 2008:17
photo - 1946:12
photograph - 1946:7, 2007:1, 2011:7
photographs - 1925:11, 1926:11, 1926:15, 1926:19, 1927:9, 1928:7, 1928:16, 1929:2, 2000:15, 2000:17
photos - 1925:13, 1925:22, 1926:5, 1926:12, 1927:13, 1929:24, 1929:25, 2007:3
phrase - 1938:23, 1938:24, 1939:9, 2011:23

picked - 1933:10, 1933:12
Pickett - 1917:10
picture - 1913:19,
 1918:12, 1927:16, 1928:23,
 1934:8, 1946:11, 2001:6,
 2001:7, 2001:8, 2002:1
pictures - 1928:10,
 1928:12, 1928:19, 1937:23,
 2000:6
piece/part - 1908:15
pieces - 2006:18, 2006:21
Piedmont - 1982:9
piles - 2001:11
place - 1993:13
Plaintiff - 1903:5
Plaintiffs - 1903:13
plan - 1910:13, 1913:21
plant - 1905:21, 1906:15,
 1912:11, 1943:19, 1944:3,
 1944:6, 1947:20, 1948:8,
 1948:19, 1956:13, 1956:21,
 1959:10, 1960:13, 1960:16,
 1964:7, 1965:12, 1965:14,
 1974:25, 1975:12, 1975:19,
 1976:20, 1977:12, 1978:5,
 1978:7, 1981:17, 1981:18,
 1991:16, 2005:11, 2008:25,
 2011:15
Plant - 1906:10, 1918:25,
 1954:4, 1987:8, 1987:16
plants - 1973:22, 1975:23,
 1977:9, 1977:12, 1980:17,
 1981:8, 1981:9, 1981:12,
 1981:14, 1981:15
play - 1933:19, 1935:22
playing - 1936:13
plus - 2002:3
Po - 1903:17
pocket - 2013:10
podium - 1952:19
point - 1910:23, 1911:7,
 1918:2, 1919:14, 1920:16,
 1922:17, 1932:6, 1935:11,
 1935:15, 1939:7, 1939:11,
 1939:19, 1941:19, 1943:9,
 1949:25, 1951:18, 1960:20,
 1979:10, 1988:13, 1989:10,
 2004:6, 2005:16, 2011:17,
 2012:20
pointed - 1964:24, 1994:1
points - 1917:4, 1985:6
pompous - 1997:5, 1997:8
Poole - 1903:13, 1945:13,
 1945:14, 1945:17, 1946:6,
 1946:9, 1946:10, 1947:11,
 1947:14, 1952:15, 1952:21,
 1952:22, 1954:16, 1954:18,
 1957:21, 1957:24, 1961:24,
 1962:2, 1964:17, 1964:19,
 1965:25, 1966:4, 1967:23,
 1968:8, 1968:9, 1968:12,
 1968:17, 1968:18, 1969:2,
 1969:6, 1969:10, 1969:13,
 1971:19, 1971:20, 1974:3,
 1974:8, 1982:11, 1982:13,
 1983:18, 1984:19, 1986:15,
 1986:19, 1987:5, 1988:21,
 1988:24, 1989:1, 1991:22,
 1992:1, 1993:22, 1993:24,
 1996:10, 1996:13, 1998:23,
 1999:2, 2000:9, 2000:12,
 2000:13, 2007:10, 2007:17,
 2007:25, 2008:12, 2009:9,
 2009:14, 2010:11, 2011:6,
 2013:5, 2015:6
pooled - 1909:15
popcorn - 1914:13,
 1918:1, 1935:8, 1989:7,
 1989:13, 1989:23, 1990:6,
 1995:24

popcorn-type - 1914:13,
 1918:1, 1935:8, 1989:7
portion - 1937:5
Portions - 1967:12
portions - 1913:9, 1932:6,
 1936:14
ports - 1952:8, 1962:11,
 1962:23, 1973:8, 1993:2,
 1993:7, 2009:3
pose - 2001:14
posed - 1971:25
position - 1944:11,
 1994:7, 1994:8, 2007:5
positive - 1961:11
possible - 1914:20,
 1966:7, 1984:6
possibly - 1944:24,
 1981:21, 1987:9
postponed - 1963:3
potential - 1949:9
potentially - 2002:13,
 2003:20, 2012:11
Power - 1984:1
power - 1944:16, 1948:8,
 1975:19, 1976:2, 1991:16
Powerpoint - 1917:4,
 1917:17, 1923:7
Pra - 1941:6, 1941:9
practice - 1908:25, 1909:2
Prasoon - 1954:3,
 1954:15, 1954:21, 1957:19,
 1962:5, 1963:11, 1963:13,
 1964:20, 1966:5, 1978:1,
 1992:16, 1995:12, 1995:13,
 1996:1, 2004:10, 2008:6
preceded - 1954:11
preclude - 1985:3
precluded - 1909:14,
 1941:14, 1986:24
preexisting - 1983:21
preference - 1933:12
prep - 1906:20, 1906:22,
 1917:6
preparation - 1908:12,
 1952:9
prepare - 1953:2
prepared - 1938:21,
 1988:9
preparing - 1906:17,
 1926:6, 2011:12
prepped - 1906:19,
 1930:23
preps - 1983:2
present - 1910:18,
 1916:16, 1916:18, 1923:15,
 1923:20, 1930:10, 1931:7,
 1931:11, 1931:24, 1942:23
presentation - 1924:15,
 1931:22, 1939:1, 1939:6,
 1941:23, 1942:1, 1942:14,
 1943:4, 1989:24, 1992:2
presentations - 1942:15
presented - 1910:3,
 1910:4, 1917:16, 1917:17,
 1918:17, 1918:21, 1919:11,
 1924:15, 1924:18, 1930:5,
 1943:1
presenters - 1916:23
presenting - 1917:20,
 1918:2, 1924:1, 1930:17,
 1940:1, 2012:6
president - 2005:25,
 2010:10
pressure - 1947:1, 1947:2
pretty - 1907:5, 1915:17,
 1916:6, 1937:9, 1950:9,
 1975:5, 1977:19, 1980:14,
 2005:15, 2005:18
prevent - 1935:25
prevented - 1947:20,

2010:22
previous - 1910:1,
 1911:12, 1920:9, 1927:2,
 1927:8, 1946:4, 1963:19,
 1968:2, 1983:22, 1991:8,
 1999:10, 2001:12, 2001:19,
 2002:1, 2013:20
Previously - 1946:9,
 1957:21, 1964:17, 1971:19
previously - 1907:9,
 1910:20, 1921:8, 1946:8,
 1947:12, 1961:25, 1966:1,
 1973:11, 1982:7, 1991:24,
 1996:11, 1998:24, 2000:11
printing - 1928:10
pristine - 1915:23,
 1949:13, 1949:18, 1956:2,
 1957:9, 1960:6, 1960:10
probabilistic - 2012:6,
 2012:19
probe - 1961:7, 1961:8
problem - 1948:12,
 1948:13, 1949:1, 1949:5,
 1949:7, 1950:24, 1956:8,
 1956:11, 1956:16, 1956:18,
 1956:19, 1956:21, 1960:9,
 1967:14, 1968:17, 1976:3,
 1985:10, 2008:7, 2008:10,
 2008:25
problems - 1981:18,
 1981:19
procedure - 1963:21
Proceedings - 1904:9
proceedings - 2014:11
process - 1912:16,
 1926:10, 1978:16, 1978:17,
 1981:3, 2007:4
produce - 1963:20
produced - 1904:9, 1946:2
progression - 1937:2
Project - 1952:1, 1952:3,
 1952:5, 1952:6, 1952:24
project - 1952:10
proposal - 1952:7,
 1972:13, 1973:7
proves - 2002:11
provide - 1925:24, 1926:4,
 1976:2, 2002:23, 2012:22
provided - 1910:21,
 1912:4, 1912:6, 1921:9,
 1924:9, 1924:11, 1926:19,
 1942:5, 1991:5, 1992:14,
 1998:19, 1999:20, 2000:1
providing - 1928:7, 2007:5
prudent - 1984:4
public - 1930:15
pull - 1960:20, 1961:4
pulled - 2005:4
pulling - 1933:25,
 1960:24, 1961:5
purpose - 1920:6,
 1922:24, 1922:25, 1923:14,
 1928:7, 1948:23, 2005:7
purposes - 2001:17
push - 1932:15, 1933:5
push-around - 1932:15
pushed - 1933:19
pushing - 1933:4
put - 1907:8, 1911:15,
 1911:21, 1913:22, 1917:3,
 1924:24, 1926:12, 1933:9,
 1933:13, 1933:14, 1933:17,
 1936:2, 1936:9, 1936:12,
 1937:10, 1958:21, 1964:6,
 1975:13, 1976:19, 1977:21,
 1979:1, 1979:10, 1979:22,
 1980:4, 1980:5, 1994:22,
 2000:20, 2007:1, 2007:12
putting - 1911:18, 1912:1,
 1913:21, 1924:23, 1944:24,

1948:9, 1960:23, 1988:6

Q

qualified - 1949:18,
 1949:21, 1950:1
quality - 1928:21, 1929:2,
 1929:15, 1929:18, 1936:15,
 1939:8, 1939:12, 1948:11
questioned - 1989:2
questioning - 1943:17,
 1990:1
questions - 1924:11,
 1934:23, 1935:10, 1935:18,
 1938:17, 1938:18, 1940:5,
 1945:14, 1954:13, 1973:13,
 1986:20, 1999:6, 2006:10,
 2006:11, 2006:13, 2007:18,
 2009:7, 2010:13, 2013:5,
 2013:8
quit - 2007:17
quite - 1983:6

R

radiation - 1979:19
radiographs - 1950:7
radius - 1915:4
raised - 1946:15
ran - 2012:19, 2012:20
rate - 1910:15, 1920:15,
 1920:17, 1939:2
ratifies - 2001:19
reactor - 1911:13,
 1911:14, 1952:8, 1956:12,
 1958:12, 1959:13, 1959:24,
 1960:22, 1960:23, 1964:2,
 1965:2, 1974:21, 1975:13,
 1978:23, 1979:9, 1979:10,
 1979:14, 1979:22, 1983:8,
 1993:3, 1997:23, 1998:4,
 1998:7, 2000:7
Reactor - 1984:6
read - 1964:13, 1973:12,
 1983:7, 1984:8, 1986:12,
 2013:23
reads - 1997:3
realistic - 1949:24
realize - 1949:23, 1972:6,
 1972:8
really - 1922:12, 1933:11,
 1940:4, 1955:6, 1958:24,
 1976:6, 1987:9, 1988:11,
 2006:5
reason - 1907:23,
 1947:24, 1976:15, 1982:23,
 1982:24, 2011:3
reasons - 1953:14
recap - 1959:9
receive - 1982:21
received - 1977:25,
 1982:15, 1982:20, 1992:23
receiving - 1982:19
Recent - 1974:1
Recess - 1968:7, 2014:4
recognize - 1907:13,
 1907:16, 1917:13, 1917:15,
 1923:5, 1929:11, 1942:13,
 1964:21, 1970:16, 1971:21,
 1974:9, 1982:8, 1992:2
recollection - 1907:19,
 1909:3, 1929:14, 1941:2,
 1962:16, 1962:21, 2004:10
recommendation -
 1959:7, 1959:19, 1961:16,
 1961:17, 1961:22
reconsider - 1974:19,
 2004:25
record - 1929:23, 2014:11
recorded - 1904:9

recordings - 1989:7,
 1995:7
 rectify - 1920:11
 red - 1946:12
 Redirect- 2007:19,
 2007:23, 2015:7
 reestablish - 1979:5,
 1979:6
 referring - 1909:18,
 2004:8
 reflect - 1942:2, 1942:25,
 1999:8
 reflecting - 1927:20
 reflection - 1936:18
 refresh - 1929:13
 refueling - 1918:15,
 1919:16, 1945:20, 1950:14,
 1953:11, 1963:4, 1984:7,
 1994:2
 refused - 1934:18
 regard - 1927:5
 regarding - 1905:8,
 1974:16, 1992:15
 regret - 1944:13, 1944:20
 regrets - 1944:8, 1944:12
 regulation - 1985:21,
 1985:22
 Regulatory- 1921:2,
 1954:11, 1966:24, 1982:1,
 1984:11, 1988:19, 1991:2,
 1991:19, 1999:14, 2000:2,
 2006:14
 reiterated - 1916:6
 relate - 1923:13
 related - 1948:14, 2006:14
 relating - 1924:4
 relatively - 1915:5
 relaxation - 1978:16
 relevant - 1999:5
 reliability - 1910:7,
 1921:22, 1922:18, 1940:17
 reliable - 1967:6, 1967:9
 relied - 1925:4
 rely - 1991:16
 relying - 1989:8, 1989:10
 remain - 1934:8
 remained - 1948:19
 remember - 1907:4,
 1912:9, 1925:17, 1931:2,
 1933:2, 1940:23, 1952:5,
 1952:6, 1953:22, 1954:2,
 1968:2, 1968:22, 1974:12,
 1994:10, 2003:6, 2003:10,
 2003:13, 2006:11, 2010:13,
 2013:8, 2013:20
 remind - 1950:4
 Remind- 1982:15
 remorse - 1944:20
 remote - 1932:25, 1933:1,
 1933:2
 remove - 1975:12,
 1979:13, 1983:23
 removed - 1947:9,
 1947:22, 1948:22, 2001:13,
 2003:4
 removes - 1947:19
 removing - 1948:4,
 1960:22, 1983:22
 repair - 1978:8, 1978:12,
 1978:23, 1980:9, 1981:21,
 1982:15
 repaired - 1967:8
 repairs - 1980:4
 repeat - 1926:23
 rephrase - 1956:15
 replace - 1976:22
 Report- 1947:4, 1947:7,
 1947:9, 1947:15, 1948:3
 report - 1955:23, 1956:3,
 1962:3, 1965:9, 1968:25,

1982:9, 2002:15, 2009:13
 Reporter- 1904:5
 reporting - 1906:8, 2010:6
 reports - 1968:20,
 1977:25, 2008:1, 2008:3
 Reports- 1946:2, 1946:4
 representation - 1989:22,
 1990:2, 1992:6, 1993:15,
 2002:25
 representations -
 1991:14, 1991:15
 representative - 1925:22,
 1925:25, 1926:5, 1926:16,
 1927:10, 1927:14, 1955:8
 represented - 1987:18
 representing - 1973:21
 request - 1925:10
 requested - 1910:16,
 1925:12, 1925:13, 1931:4
 requesting - 1925:11
 required - 1949:18,
 1955:21, 1965:9, 1985:25
 requirements - 1984:4,
 1985:21
 requires - 1959:24
 reran - 2012:18
 rescheduled - 1952:12
 response - 1908:13,
 1923:15, 1924:7, 1954:2,
 1964:21, 1968:21, 1969:15,
 1970:23, 1974:19, 1981:25,
 1983:13, 1983:19, 1984:21,
 1985:6, 1986:2, 1987:17,
 1992:14, 1992:24, 1997:9,
 2004:25, 2006:24, 2010:7
 responses - 1943:10,
 1951:15
 responsibility - 1946:15,
 1970:3, 1970:24, 1971:1,
 1997:10, 1997:19, 2007:5,
 2007:7
 responsible - 1908:17,
 1908:18, 1951:9, 1951:19,
 1971:5, 1971:7, 1971:9,
 1984:12, 1984:24, 1988:3,
 1988:6, 1991:11, 1996:16,
 1996:23
 rest - 1915:8, 1925:2,
 1930:19, 1932:1, 1937:8,
 1940:2, 2003:2
 restart - 1959:16
 restate - 1926:21, 1984:17
 restraint - 1947:10,
 1947:19, 1947:22, 1947:24,
 1948:5, 1948:6, 1948:19,
 1948:22, 1948:23, 1950:13,
 1950:16, 1950:17
 restricted - 1983:25
 result - 1910:24, 1941:4,
 1948:3, 1955:21, 1964:3,
 1965:1
 results - 1910:12,
 1919:24, 1922:8, 1925:4,
 1925:7, 1991:4
 retrospect - 1954:6
 reveal - 2002:22
 revealed - 2006:19
 review - 1905:10, 1906:1,
 1906:6, 1906:11, 1906:21,
 1909:7, 1910:20, 1910:22,
 1946:2, 1946:3, 1947:25,
 1952:10, 1968:25, 1988:14,
 1990:3, 1991:8, 1994:12,
 1995:7, 1997:16, 2010:16,
 2011:4
 Review- 1941:24, 1952:2,
 1952:3, 1952:5, 1952:6,
 1952:24, 1970:20, 1999:11
 reviewed - 1908:12,
 1909:21, 1932:3, 1941:25,

1947:25, 1952:10, 1953:2,
 1970:4, 1970:7, 1970:10,
 1987:12, 1987:15, 1987:16,
 1988:9, 1988:11
 reviewing - 1944:23,
 1994:14
 reviews - 1905:24
 revise - 1920:25
 revised - 1941:22, 2012:22
 revisions - 1998:17,
 2002:20
 reweld - 1979:3, 1979:4
 rewelding - 1978:15
 rewind - 1934:6, 1934:17
 rewinding - 1934:14
 rewound - 1933:21,
 1934:7
 Rfo- 1918:5, 1924:22,
 1924:23, 1925:3, 1941:12,
 1949:10, 1949:11, 1952:13,
 1983:8, 1985:15, 1987:12,
 1995:25
 Richard- 1903:13, 1903:21
 rig - 1979:1, 1979:4,
 1979:25
 risk - 2012:7, 2012:19
 Rmr- 1904:5, 2014:14
 robotic - 1980:14
 robotics - 1980:11
 Rockville- 1917:1
 role - 1905:10, 1946:1,
 1997:6
 room - 1917:2, 1932:10,
 1932:13, 1937:9, 1940:3
 roughly - 2013:17
 Roy- 1920:23
 run - 1961:7, 1976:17,
 1976:18
 running - 1932:3, 1940:24,
 1976:21

S

sacrificed - 2013:12
 safe - 1965:12, 1965:14,
 1982:3
 safety - 1944:5, 2006:14
 safety-related - 2006:14
 Sai - 1998:15, 2012:22
 sample - 1926:5, 1926:16
 sampling - 1925:21
 sat - 1910:11, 1915:21
 satisfy - 1971:12
 Saunders - 1974:17,
 2005:10, 2006:5
 Saunders'- 2005:22,
 2006:2
 save - 2013:12
 saw - 1939:21, 1942:16,
 1946:11, 1977:14, 1983:7,
 1995:20, 2009:5
 scan - 1933:23
 scenario - 1960:15
 schedule - 1980:22,
 1980:23
 scheduled - 1930:14,
 1932:1, 1948:4, 1982:4
 screen - 1907:8, 1914:9,
 1934:8, 1934:14, 2009:18
 screening - 2002:3
 second - 1916:12, 1929:5,
 1929:13, 1932:24, 1944:24
 section - 1908:1, 1966:19
 sectional - 1978:22
 sections - 1905:21
 see - 1907:10, 1909:10,
 1914:19, 1918:14, 1936:19,
 1942:19, 1942:21, 1961:17,
 1970:7, 1970:13, 1972:1,
 1972:10, 1972:13, 1976:3,

1982:25, 2003:1, 2009:4,
 2009:19, 2009:21, 2009:23,
 2014:2
 seeing - 1935:25, 1936:7,
 1936:22
 seem - 1929:22
 selected - 1931:11
 send - 1928:11, 1931:1
 sending - 1925:14,
 1939:25
 sense - 1915:18, 1927:25,
 1929:17, 1935:17, 2004:17,
 2008:24
 sent - 1937:23, 1938:20,
 1940:12, 1963:11, 1968:20,
 1968:21, 1986:3, 1991:2,
 1991:8, 1992:24, 2007:3,
 2008:19
 sentence - 1924:21,
 1983:11, 2001:16, 2001:17,
 2002:5
 September - 1905:6,
 1952:25, 1974:17, 2004:20,
 2008:16
 serial - 2000:5
 Serial - 2000:14
 series - 1930:14, 1954:10,
 1968:20, 2006:9, 2013:5
 served - 1995:8
 service - 1952:8, 1953:9,
 1953:19, 1954:6, 1960:23,
 1962:7, 1962:8, 1963:8,
 1963:14, 1963:22, 1972:14,
 1973:8, 1983:25
 Service - 1984:6
 Services - 1969:25
 session - 1917:6
 set - 1907:5, 1911:25,
 1917:9, 1917:10, 1931:18,
 1981:11
 setbacks - 1944:17
 seven - 1926:23, 1951:13
 several - 1942:15,
 1973:21, 2005:8
 severely - 1983:24
 sheet - 1942:18
 shelf - 1932:15
 Sheron - 1974:14,
 1974:15, 1974:17, 1974:18,
 1975:3, 2004:20, 2004:23
 shield - 1980:5
 shiny - 1936:19
 short - 1968:14
 shoulder - 1927:3, 1932:8
 show - 1910:4, 1913:9,
 1914:1, 1917:11, 1919:3,
 1923:4, 1923:9, 1929:9,
 1930:1, 1931:19, 1937:4,
 1937:8, 1942:11, 1942:18,
 1953:5, 1978:21, 1982:6,
 1998:23, 1999:3, 2001:5,
 2009:12
 showed - 1914:8, 1914:21,
 1914:22, 1914:24, 1937:5,
 1939:21
 showing - 1934:20,
 1935:24, 1937:18, 1940:22,
 1958:15
 shown - 1933:7, 2008:12,
 2009:9
 shows - 2001:25
 shut - 1975:8, 1977:6,
 1977:18, 1980:8, 1981:17,
 1982:2, 2005:1, 2013:7
 Shut - 1975:12
 shuts - 1975:19, 1978:5
 shutting - 1974:20, 1975:4
 Sia - 1940:24, 2002:15
 Sia's - 1941:17
 sic - 1943:16

side - 1907:1, 1914:11, 1914:25, 1915:4, 1915:6, 1915:8, 1915:13, 1943:3
sides - 1915:14
sidetracked - 1939:7
Siemaszko - 1909:4, 1911:10, 1916:1, 1917:6, 1918:3, 1921:21, 1923:23, 1931:15, 1939:12, 1939:25, 1944:25, 1951:11, 1951:19, 1954:22, 1987:3, 1987:9, 1988:9, 1989:11, 1990:2, 1991:5, 1991:10, 1993:2, 2000:15, 2000:21, 2001:3
Siemaszko's - 1921:22, 1922:4, 1922:10
sign - 1905:13, 1996:19
signature - 1970:14
signed - 1905:18, 1905:24, 1906:5, 1906:8, 1947:17, 1959:20, 1959:22, 1960:12, 1966:24, 1969:14, 1969:24, 1971:4, 1971:22, 1972:21, 1972:22, 1972:24, 1983:13, 1984:10, 1984:21, 1985:6, 1996:6, 1996:8, 1996:9, 1996:14
signers - 1968:24
significant - 1958:24, 1975:6
signing - 1970:2
signs - 1909:16, 1909:17, 1914:15, 1914:19, 1986:25, 1997:4
similar - 1924:18, 1942:15, 1977:12
simply - 1935:14
single - 1945:1, 1977:16, 2004:14
sit - 1931:25, 1944:8, 1980:23, 1983:4
site - 2005:25
sitting - 1913:5, 1982:18, 2003:17
situation - 1938:21
six - 1907:6
slide - 1917:13, 1917:15, 1918:6, 1918:17, 1918:24, 1923:5, 1923:21, 1924:1, 1924:4, 1924:14, 1924:15, 1924:18, 1924:24, 1942:11, 1942:13, 1942:15, 1942:23, 1995:7
slides - 1916:18, 1916:21, 1917:3, 1917:16, 1923:12, 1923:19, 1991:24
slow/fast - 1933:23
small - 1954:25, 1955:1, 1955:11
snapshots - 1925:25
snowdrift - 1915:9
solution - 1948:12
solve - 1985:10
someone - 1948:21
Sometime - 1982:22
sometimes - 1940:15
somewhat - 2005:9
somewhere - 1976:21, 2013:18
soon - 1920:13, 1984:6
sorry - 1911:5, 1913:4, 1926:21, 1929:4, 1950:20, 1956:12, 1956:17, 1960:1, 1962:14, 1963:14, 1972:6, 1972:8, 1972:23, 1976:11, 1979:16, 1981:19, 1986:2, 2004:13, 2004:14, 2007:12, 2007:16
Sorry - 1968:15
sort - 1930:25, 1938:9,

1978:22, 1991:15, 1994:19, 2004:24, 2005:16
sought - 1980:9
sound - 1921:6, 1997:5
sounded - 1905:22
sounds - 1970:7, 1971:10, 1987:13
Sounds - 1970:10
source - 1939:17
sources - 1910:7
space - 1913:22
speaking - 1908:7, 1917:4, 1937:14
special - 1906:2
specific - 1907:19, 1910:23, 1918:25, 1935:9, 1935:11, 1994:18, 1997:8
specifically - 1911:23, 1914:12, 1922:22, 1925:12, 1930:10, 1942:17, 1981:11, 1997:17, 2001:1, 2011:21
Specifically - 1947:4
speed - 1934:12
spent - 1944:15, 1944:23
Spielbusch - 1904:5
Spm - 1969:23
spoken - 1927:22, 2011:9, 2011:18
sponsor - 1954:1
sponsored - 1954:3
Spore - 1904:5, 2014:14
spring - 1911:17, 1975:24, 1980:3
square - 1932:12
staff - 1905:23, 1922:25, 1923:2, 1933:11, 1934:4, 1934:16, 1935:4, 1935:17, 1936:14, 1938:12, 1991:20
stand - 1918:13, 1944:12, 1960:24, 1975:13, 1979:10, 1979:17, 1979:18, 1980:21, 2003:13, 2004:11, 2004:14
standard - 1971:10
standing - 1980:24
standpoint - 1939:16, 1941:6, 1952:13, 2001:15, 2012:15
start - 1920:19, 1932:3, 1933:11, 1945:20, 1960:24, 1976:5, 1976:6, 1978:9, 2005:16
started - 1912:2, 1914:3, 1948:20, 1956:16, 2006:8, 2007:25
starting - 1920:16, 1947:20, 1976:2
state - 1967:9, 1981:14
statement - 1949:15, 1950:25, 1962:14, 1967:13, 1975:6, 1977:10, 1981:16, 1995:23, 1996:2, 1996:25, 2001:24, 2003:3, 2011:17
statements - 1945:9, 1987:2, 2010:7
States - 1903:1, 1903:4, 1903:11
stating - 1973:14, 1992:17
station - 2010:15
staying - 1916:25
steam - 1946:21, 1946:23, 1946:24, 1946:25
Steering - 1955:8, 1958:9, 1978:19, 1980:2, 1980:16
stenography - 1904:9
step - 1913:23, 2013:16
steps - 1975:9
Steve - 1905:17, 1907:2, 1907:3, 1910:13, 1916:2, 1916:5, 1919:17, 1922:17, 1931:9, 2005:4

sticking - 1979:7
still - 1948:20, 1975:21, 2012:15
stop - 1913:20, 1934:5, 1934:6, 1939:17, 1987:1, 2012:16
stop-it-on-a-dime - 1913:20
stopped - 1905:5, 1912:20, 1912:25, 1913:3
streaking - 1914:15, 1914:17
streams - 1909:18
Street - 1903:22, 1904:3
stress - 1978:16
strong - 1940:15, 1963:13, 1989:20, 1989:21, 1990:5
strongly - 1974:19
structural - 1919:2, 1953:19
Structural - 1919:7, 1940:21
Structure - 1984:6
structure - 1952:8, 1953:9, 1954:7, 1960:23, 1962:7, 1962:9, 1963:8, 1963:14, 1963:22, 1972:14, 1973:8, 1983:25
studs - 1979:13
stuff - 1914:23, 1930:25, 1932:13, 1934:25, 1978:19, 2002:4
stupid - 1938:17
style - 1957:1
Subject - 1999:4
subject - 1974:1, 2000:2
submission - 1921:3, 1929:11, 1954:11, 1996:24
submittal - 1920:9, 1928:11, 1929:4, 1937:1, 1985:24, 1994:22
submitted - 1927:25, 1966:24, 1996:3, 2013:25
submitting - 1928:1
substance - 1921:25
substantial - 1990:21
successful - 2010:18, 2010:23
succession - 1992:16
sufficient - 1919:5, 1986:13
suggest - 1967:23, 1997:8
suggested - 2009:14
suggesting - 1974:19
Suite - 1903:21, 1904:2
sum - 2011:14
summary - 1987:22, 1988:5, 1988:9
summer - 1975:25, 1980:12
superiors - 1943:20
supervisor - 1908:16, 1908:22, 1940:13
supervisors - 1909:1, 1909:2
supplied - 2000:17
support - 1916:24
Suppose - 1994:23
supposed - 1936:4, 2007:14
surface - 1998:4
surfaces - 1928:24
surprise - 1936:25, 2004:4
surprised - 1919:23, 2004:7
susceptibility - 1981:12
Susceptible - 1978:5
susceptible - 1958:20, 1978:3
Swim - 2008:9

switch - 1907:10
system - 1911:13, 1911:14
Systems - 1908:16

T

tabbed - 1971:24, 1999:5
table - 1907:5, 1910:16, 1910:17, 1910:18, 1910:24, 1911:11, 1912:3, 1918:3, 1919:14, 1919:21, 1920:17, 1921:15, 1994:22
tables - 1932:13
tail - 1983:10
tape - 1933:7, 1933:13, 1933:14, 1933:17, 1933:19, 1933:20, 1933:21, 1934:7, 1934:14, 1934:17, 1934:21, 1935:11, 1935:22, 1935:25, 1936:6, 1936:9, 1936:12, 1936:23, 1937:4, 1937:8, 1937:10, 1937:19, 1937:21, 1939:18, 1993:17, 1994:9
tapes - 1909:20, 1911:18, 1911:21, 1911:22, 1911:25, 1913:9, 1913:10, 1913:11, 1913:15, 1920:19, 1929:18, 1931:19, 1931:24, 1931:25, 1932:3, 1932:4, 1932:5, 1932:17, 1934:3, 1937:25, 1938:2, 1938:20, 1938:22, 1939:4, 1939:8, 1990:3, 1993:13
tasked - 1997:17
tasks - 1910:14
team - 1910:10, 1917:2, 1930:20, 1930:21, 1931:15, 1939:24, 1940:2
teammates - 1938:19
tech - 1917:17
Technical - 1969:24
technical - 1916:10, 1916:14, 1918:17, 1970:23, 1971:1, 1971:7, 1971:9, 1984:11, 1984:24, 1988:18, 1990:9, 1996:24, 1997:4, 1997:9
technically - 2011:4
technique - 1950:11
techniques - 2000:23
technology - 1961:9, 1980:9, 1993:18
teleconference - 1906:14, 1906:15, 1906:23, 1907:18, 1981:11
temper - 1978:16
temperature - 1997:24
terms - 1929:18
testified - 1913:13, 1932:24, 1946:11, 1982:10, 1988:2, 1988:8, 1988:12, 1988:17, 1989:5, 1995:13, 2000:5, 2001:6
testifying - 1940:20, 1945:21
testimony - 1953:3, 1955:5, 1959:9, 1962:10, 1962:18, 1962:21, 1967:17, 1970:2, 1982:18, 1982:23, 1990:13, 1997:22, 1999:18, 2006:9
testing - 1950:6
text - 1923:11, 1923:12, 1924:17, 2009:19, 2009:21, 2009:23
Theo - 2008:9
therefore - 1927:16, 1998:12, 2001:14
thinking - 1977:20, 1977:22, 2009:9

third - 1918:24, 1964:23
Thomas - 1903:16
thorough - 1915:17,
 1949:3, 1967:18
threat - 2001:14
Three - 1944:17
three - 1926:17, 1929:1,
 1966:23, 1977:12
throughout - 2007:4
thrust - 1971:4
time-consuming - 1981:2
timeframe - 1905:7
title - 2005:22
Today - 1963:9
today - 1944:8, 1949:24,
 1967:17, 1970:6, 1980:24,
 1982:18, 1986:11, 2003:17,
 2003:22
together - 1911:15,
 1917:3, 1948:9, 1979:13,
 1988:7
Toledo - 1903:5, 1904:6
took - 1938:1, 1967:11,
 1968:19, 1994:20, 2005:15
Tooling - 1981:19
top - 1932:14, 1941:11,
 1958:11, 1977:15, 1983:20,
 1983:24, 1997:23, 1998:7,
 2001:11, 2012:8
topic - 1908:8, 1916:13
tornado - 1959:10,
 1960:16
total - 2011:14
totsy - 1946:24
touching - 2013:23
towards - 1909:23
Tracy - 1904:5, 2014:14
Transcript - 1903:10
transcript - 1904:9,
 2014:10
transmit - 1938:10
travel - 1930:19, 1930:22
travelled - 1930:21
trees - 1995:1
Trial - 1903:6, 1903:10
trial - 1932:25, 1952:9
tried - 1913:17
trip - 1955:23, 1956:3,
 1959:8, 1962:3, 1968:20,
 1977:25, 2008:1, 2008:3
tripped - 1960:13
trips - 1960:16
trouble - 1985:14, 2012:17
true - 1949:15, 1950:25,
 1957:10, 1957:13, 1958:16,
 1965:7, 1989:19, 1995:23,
 1996:2, 1998:9, 2002:16,
 2012:1
truth - 1942:7, 1943:25
try - 1909:1, 1918:12,
 1944:25, 1981:25, 2013:1
trying - 1912:9, 1914:19,
 1939:6, 1959:15, 1981:10,
 1993:10, 1993:14
tube - 1915:9, 1935:7
tubes - 1909:19, 1914:16
Tuesday - 1906:19
tumbled - 1915:8
turbine - 1976:9, 1976:12
turn - 1916:12, 1923:19,
 1954:12
turned - 1954:7
Tv - 1932:14, 1932:23,
 1933:3
Twice - 1905:14
two - 1910:14, 1911:2,
 1911:4, 1912:16, 1915:13,
 1915:14, 1918:12, 1924:3,
 1924:14, 1930:17, 1959:1,
 1966:23, 1973:20, 1983:5

type - 1913:20, 1914:13,
 1915:10, 1918:1, 1932:14,
 1935:8, 1936:13, 1989:7
typed - 1918:7

U

ultimate - 1968:5, 2013:24
ultrasonic - 1950:6
under - 1917:18, 1959:16,
 1979:14, 1979:15
Undergoing - 1981:20
underneath - 1925:6,
 1932:16, 1979:1, 1979:21,
 1979:22, 1980:4
understandable - 1985:19
undetected - 1998:12
uninspectable - 1998:10
unit - 1976:9, 1976:10,
 1976:11
United - 1903:1, 1903:4,
 1903:11
units - 1976:2, 1976:6,
 1976:11, 1976:16, 1976:22
unless - 1942:16, 1948:21
Unless - 1976:24
untrue - 1942:6
up - 1905:25, 1907:5,
 1907:8, 1910:12, 1913:1,
 1913:2, 1913:24, 1914:11,
 1918:8, 1919:4, 1919:5,
 1923:2, 1923:7, 1925:6,
 1926:2, 1931:10, 1932:6,
 1934:8, 1940:22, 1941:8,
 1941:13, 1941:14, 1941:18,
 1942:3, 1944:6, 1945:1,
 1947:20, 1948:20, 1949:23,
 1968:4, 1969:7, 1972:24,
 1976:1, 1976:6, 1976:15,
 1978:14, 1978:25, 1979:1,
 1980:6, 1981:11, 1984:20,
 1986:7, 1987:17, 1990:10,
 1994:21, 1998:16, 1998:18,
 1998:20, 1998:21, 1999:9,
 1999:12, 2001:22, 2001:25,
 2002:8, 2002:11, 2002:15,
 2002:17, 2009:18, 2011:25,
 2012:11, 2012:13, 2013:24
uphill - 1915:6, 1915:8
upside - 1914:25
urgent - 1974:2, 1974:24,
 2008:13, 2008:15, 2008:21
utility - 2004:24

V

Vague - 1928:5
Vaguely - 2003:8
validity - 1941:9
various - 1927:5, 1934:24
Vcr - 1932:15, 1933:3,
 1933:4, 1933:6
verbiage - 1921:10,
 1925:2
verdict - 2014:1
verified - 1989:6, 1989:12,
 1989:19, 1989:23, 1990:6,
 1995:24, 2001:13, 2003:4,
 2003:25, 2004:11, 2004:15,
 2011:20
verify - 1905:22, 1906:7,
 1922:3, 1922:5, 2003:9
verifying - 1918:1
version - 2012:18
versus - 1915:9, 1928:15
vessel - 1952:8, 1958:12,
 1959:13, 1959:24, 1964:2,
 1965:2, 1974:21, 1975:13,
 1978:23, 1979:9, 1979:23,
 1983:8, 1993:3, 1997:24,

1998:4, 1998:7, 2000:7
Vhs - 1913:14, 1913:18,
 1932:8, 1932:17, 1939:18
vice - 2005:25, 2010:10
vice-president - 2005:25,
 2010:10
vicinity - 2001:11
video - 1913:10, 1913:11,
 1915:24, 1917:25, 1925:3,
 1929:15, 1932:7, 1934:1,
 1936:15, 1987:13, 1989:7,
 1989:13, 1994:17, 1994:19,
 1994:24, 1995:2, 1997:16
videos - 1909:7, 1914:1,
 1930:11, 1939:13, 1987:12
videotape - 1910:20,
 1936:2, 1987:19, 1994:13
videotapes - 1910:22,
 1925:11, 1930:6, 1931:8,
 1931:13, 1939:21, 1940:1,
 1943:7, 1987:12, 1987:15,
 1987:17, 1991:8
videotapes-reviewed -
 1987:12
view - 1911:22, 1915:13,
 1936:17, 1950:19, 1967:3,
 1987:19
viewed - 1950:19,
 1985:11, 1985:14, 1990:22,
 2007:5, 2007:6
viewer(s) - 1970:22
viewpoint - 1949:24
visual - 1919:6, 1949:13,
 1949:18, 1949:21, 1949:22,
 1950:2, 1950:10, 1950:12,
 1950:14, 1955:1, 1955:2,
 1960:6, 1975:15, 1983:20,
 1984:4, 1985:4, 1986:3,
 1986:12, 1995:7, 1998:3,
 1998:10
visualizing - 1949:21
visually - 1960:4, 1960:17
Volume - 1903:9

W

walked - 1913:24, 1915:22
wandering - 1994:23,
 1994:24
warned - 1959:23
warning - 1956:5,
 1957:14, 1958:19, 1963:6,
 1963:8, 1963:11, 1964:13,
 1965:4, 1965:6, 1965:21,
 1967:2, 1967:3, 1983:12,
 2008:7, 2008:10
Warnings - 2008:13
warnings - 2008:2, 2008:3
washer - 1947:1, 1947:2
Washington - 1903:15,
 1903:18, 1903:22, 1904:3,
 1906:16, 1916:25, 1930:10,
 1930:13, 1930:19
watch - 1931:25, 2013:23
watched - 1933:19,
 1937:21
water - 1946:22, 1946:25,
 1947:2, 2010:19
weak - 1989:20
Wednesday - 1906:19
week - 1912:15, 1919:13,
 1982:4, 1983:5
weeks - 1966:23, 1983:5
weep - 1972:18
weld - 1978:11, 1978:12,
 1978:13, 1978:15, 1979:4,
 1979:5
welding - 1980:1
Western - 1903:2
wet - 2001:14, 2003:5,

2003:10, 2004:1, 2004:12,
 2011:21
whereas - 1924:23,
 1928:20
white - 1928:20
whole - 1909:13, 1923:6,
 1935:23, 1942:16, 1943:24,
 1956:15, 1963:22
willing - 1993:14
winter - 1976:1
Wise - 1903:20, 1905:4,
 1907:10, 1907:12, 1929:5,
 1929:7, 1929:23, 1930:4,
 1945:11, 1957:19, 1959:3,
 1974:5, 1983:16, 1984:15,
 1986:20, 1987:4, 1989:3,
 1990:1, 1993:25, 2006:9,
 2007:8, 2007:20, 2007:24,
 2013:15, 2015:4, 2015:8
wish - 1944:22, 1944:23,
 1958:21, 1967:4, 1983:17,
 2008:5
witness - 1930:16, 1969:6,
 1982:6, 1998:23
Witness - 1969:9, 1984:17,
 2007:15
word - 1917:18, 1918:5,
 1918:6, 1922:5, 1941:17,
 2009:19, 2009:21, 2009:23,
 2012:16
words - 1989:15, 1989:17,
 1989:18, 1990:17, 1990:19
works - 1933:14
worried - 1936:6
worse - 1928:25, 1929:25,
 1937:13, 1937:16
worth - 1946:4
worthless - 1938:22
worthwhile - 1934:2
write - 1927:9, 1927:15
writing - 1926:25, 1981:7,
 1987:17, 2011:20
written - 1946:3, 1951:4,
 1959:16, 1961:16, 1982:25
wrote - 1926:18, 1927:23,
 1950:22, 1950:24, 1985:15,
 2002:14

Y

year - 1914:4, 1954:7,
 1974:20, 1975:5, 1975:22,
 1981:17, 1982:2, 2005:1,
 2009:10
years - 1911:6, 1944:15,
 1951:13
yell - 1978:25
yesterday - 1905:5,
 1911:20, 1915:23, 1962:19,
 1967:13, 1970:2, 1999:23,
 2006:9
York - 1903:14
yourself - 1909:7, 1941:3,
 1971:12, 1996:21
yourselves - 1968:3,
 2013:21