

1 STATE OF MISSOURI
2 PUBLIC SERVICE COMMISSION
3
4

5
6 TRANSCRIPT OF PROCEEDINGS
7
8
9

10
11
12 Hearing
13 August 1, 2007
14 Jefferson City, Missouri
15 Volume 3

10

11

12 In the Matter of an Investigation)
13 Into an Incident in December 2005)
14 at the Taum Sauk Pumped Storage) Case No. ES-2007-0474
15 Project Owned and Operated by the)
16 Union Electric Company, doing)
17 business as AmerenUE)

15

16 COLLEEN M. DALE, Presiding,
17 CHIEF REGULATORY LAW JUDGE.

17

18 JEFF DAVIS, Chairman,
19 STEVE GAW,
20 ROBERT M. CLAYTON III,
21 LINWARD "LIN" APPLING,
22 COMMISSIONERS.

21

22 REPORTED BY:

23 KELLENE K. FEDDERSEN, CSR, RPR, CCR
24 MIDWEST LITIGATION SERVICES

24

25

1 APPEARANCES:

2 THOMAS BYRNE, Attorney at Law
3 P.O. Box 66149
4 1901 Chouteau Avenue
St. Louis, MO 63103
(314) 554-2237

5 REBECCA WICKHEM HOUSE, Attorney at Law
6 Foley & Lardner, LLP
7 777 East Wisconsin Avenue
Milwaukee, WI 53211
(414) 297-5681

8 LISA PAKE, Attorney at Law
9 Haar & Woods, LLP
10 1010 Market Street
St. Louis, MO 63101
(314) 241-2224

11 FOR: Union Electric Company,
12 d/b/a AmerenUE and its Employees.

13 KURT U. SCHAEFER, Attorney at Law
14 LATHROP & GAGE
314 East High Street
Jefferson City, MO 65101
(573) 893-4336

15 KARA VALENTINE, Attorney at Law
16 Missouri Department of Natural Resources
P.O. Box 176
17 Jefferson City, MO 65102
(573) 751-0763

18 FOR: Missouri Department of Natural
19 Resources.

20 CHRISTINA BAKER, Assistant Public Counsel
21 P.O. Box 2230
200 Madison Street, Suite 650
Jefferson City, MO 65102-2230
22 (573) 751-4857

23 FOR: Office of the Public Counsel
24 and the Public.

25

1 KEVIN THOMPSON, General Counsel
2 STEVE REED, Litigation Attorney
3 P.O. Box 360
4 200 Madison Street
Jefferson City, MO 65102
(573) 751-3234

5 FOR: Staff of the Missouri Public
6 Service Commission.
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

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

2 JUDGE DALE: We are back on the record on
3 August 1st, 2007, in the matter of Taum Sauk,
4 ES-2007-0474. We are ready for Mr. Pierie. Is that how
5 you say his name?

6 THE WITNESS: Yes.

7 JUDGE DALE: Okay.

8 MR. THOMPSON: Your Honor, the rule was
9 invoked, I assume is still in effect and, therefore,
10 Mr. Fitzgerald and Mr. Witt as well as anyone else
11 scheduled to testify should be outside the room.

12 JUDGE DALE: Yes.

13 MR. BYRNE: They are, your Honor.

14 MS. HOUSE: Other than our corporate
15 representative, Mr. Birk.

16 (Witness sworn.)

17 JUDGE DALE: Thank you. You may inquire.

18 MR. THOMPSON: Thank you.

19 THOMAS PIERIE testified as follows:

20 DIRECT EXAMINATION BY MR. THOMPSON:

21 Q. Thank you. Good morning, Mr. Pierie.

22 A. Good morning.

23 Q. I wonder if you would tell us how you are
24 employed?

25 A. I'm a consulting engineer with AmerenUE.

1 I've been an electrical engineer with Ameren for about
2 five years now.

3 Q. And who did you work for before Ameren?

4 A. I worked for Power Engineers, which is
5 located in Chesterfield, Missouri, a consulting firm.

6 Q. How long did you work for them?

7 A. About five to six years.

8 Q. And who did you work for before Power
9 Engineers?

10 A. With Columbia River Carbonates.

11 Q. Where are they located?

12 A. In Woodland, Washington.

13 Q. And how long did you work for them?

14 A. About a year.

15 Q. And who were you employed by before
16 Columbia River Carbonates?

17 A. Commonwealth Edison.

18 Q. And where was that located?

19 A. Chicago, Illinois.

20 Q. And how long were you employed by
21 Commonwealth Edison?

22 A. Seven years.

23 Q. And how about before Commonwealth Edison?

24 A. It was school, college.

25 Q. And where did you go to school?

1 A. Southern Illinois, Carbondale.

2 Q. And what degrees do you have?

3 A. Double E.

4 Q. So you have a degree in electrical

5 engineering?

6 A. Correct.

7 Q. Would that be a bachelor's degree?

8 A. Yes.

9 Q. So is that, formally speaking, a bachelor

10 of science in electrical engineering?

11 A. Correct.

12 Q. And what date did you receive that degree?

13 A. May 15 -- or May of '88.

14 Q. Do you have any advanced degrees that

15 you've earned since then?

16 A. No, I do not.

17 Q. And that degree is sufficient for you to

18 pursue your profession?

19 A. It is.

20 Q. Are you a registered professional engineer

21 in any state?

22 A. I am not.

23 Q. You're not. Now, when you were employed by

24 Commonwealth Edison in Chicago, what was your position

25 with them?

1 A. I was basically a general engineer.

2 Q. Was your position the same throughout your
3 seven years of employment there?

4 A. Yes.

5 Q. And what were your responsibilities as a
6 general engineer?

7 A. Basically providing construction packages
8 to construction groups for putting in equipment.

9 Q. Okay. And what is a construction package?

10 A. A construction package is made up of
11 documents, drawings, physical drawings and installation of
12 equipment, and then also schematics if there's -- that
13 someone can use to figure out how something operates.

14 Q. Would these have been primarily electrical?

15 A. Yes.

16 Q. And then when you went to work for Columbia
17 River Carbonates, what was your title or your position
18 with that firm?

19 A. I was basically a controls engineer. Well,
20 I did it all. Kind of did all the electrical
21 responsibilities inside the plant. It was a smaller
22 plant, so whatever needed to be done, I did it on the
23 electrical side.

24 Q. So that firm had a factory?

25 A. Yeah.

1 Q. They manufactured carbonates?

2 A. Yeah. They ground limestone into fine
3 powder.

4 Q. You were only there a year. Why is it you
5 left?

6 A. Had a disagreement with the management.

7 Q. Okay. Can you tell me what was the nature
8 of the disagreement?

9 A. Just didn't see eye to eye on how he was
10 purchasing things. Thought he was spending more money
11 than he should be on different systems, and just kind of
12 had some conflicts.

13 Q. Okay. What was your position or your title
14 with Power Engineers?

15 A. Just a senior engineer.

16 Q. And what exactly did you do?

17 A. Basically, I did several things. I did
18 some control projects, did some SCADA work. Again, a lot
19 of this is just generating construction drawings,
20 supervising installations of equipment, schedule, budgets.

21 Q. And all those activities, as well as the
22 ones you did at Columbia River and at Commonwealth Edison,
23 those activities are all within the general scope of the
24 duties and profession of an electrical engineer?

25 A. Correct.

1 Q. Okay. Now, how is it you happened to leave
2 Power Engineers and go to work for Ameren?

3 A. I was working on a project for Bob Ferguson
4 of Ameren, and he had asked if I'd like to join Ameren,
5 and that's how I came to work at Ameren.

6 Q. Okay. And when you came to work at Ameren,
7 was Bob Ferguson your supervisor?

8 A. Yes, he is, or was.

9 Q. Is he still your supervisor now?

10 A. No, he's not.

11 Q. Okay. Who's your supervisor now?

12 A. Tom Callahan.

13 Q. Is Mr. Ferguson still at Ameren?

14 A. Yes, he is.

15 Q. So were you transferred or was he
16 transferred?

17 A. Yes. I was transferred to the new
18 generation and environmental projects group.

19 Q. Okay. And what was the name of the group
20 that Mr. Ferguson has?

21 A. Generation engineering.

22 Q. When did that transfer occur?

23 A. I want to say October of '05.

24 Q. So at the time that that transfer occurred,
25 would I be correct in understanding that the -- strike

1 that.

2 You understand we've heard testimony
3 already from Mr. Zamberlan and Mr. Bluemner, correct?

4 A. Correct.

5 Q. And we've heard from Mr. Zamberlan and from
6 Mr. Bluemner that you were in charge of the control
7 project at Taum Sauk in the summer and fall of 2004; is
8 that correct?

9 A. Correct.

10 Q. What exactly was that project?

11 A. That project was, basically Taum Sauk at
12 that time was a -- the control system was based off
13 electromechanical relays. So we were basically replacing
14 electromechanical relays with a computer-based system.

15 Q. Okay. What exactly is a electromechanical
16 relay?

17 A. It's a -- it's a -- well, it could take
18 many different types of electromechanical relays having a
19 series of different outputs to it, different voltage
20 classes for coils. Basically, you have a coil that drives
21 an output contact. The coil, you know, it's an
22 electromechanical coil. Again, you energize that coil,
23 you get a change in state of the contact. That's kind of
24 in a nutshell.

25 Q. Okay. So you energize the coil and you get

1 an output of a particular type?

2 A. Very good.

3 Q. And so if you use several of these, you can
4 make a device that will do different things if different
5 inputs are given to it?

6 A. Correct.

7 Q. Okay. And by using a programmable logic
8 controller, you can replace that system of relays,
9 correct?

10 A. Correct.

11 Q. Okay. And who designed the control system
12 that was installed at Taum Sauk in the fall of 2004?

13 A. Tony Zamberlan actually did the design of
14 the replacement.

15 Q. Would you agree with me that Mr. Zamberlan
16 was an automation expert?

17 A. I would say so, yes.

18 Q. He is, in fact, is he not, the vice
19 president and manager of the instrumentation and control
20 group at, I think it's LDP, his employer?

21 A. That is correct.

22 Q. And he's a partner there, isn't he?

23 A. Yes, he is.

24 Q. So far as you know, is he well regarded in
25 the electrical engineering circles?

1 A. That's my understanding.

2 Q. Now, as part of this control project, was
3 every part of the pre-existing control system replaced?

4 A. It was not.

5 Q. What parts were not replaced?

6 A. Basically, originally it was to replace the
7 complete -- basically I should say as many
8 electromechanical relays as possible. We got into the
9 project. The further we got along, we realized that we
10 weren't going to be able to do the whole entire system.
11 So we kind of chose pieces to complete, so upper reservoir
12 control, lower reservoir control, the governor control,
13 liquid reistat.

14 And then the main control system that
15 basically starts and stops the generating and pump cycle,
16 we decided that we would save those for a later outage
17 because, again, we didn't have enough time to complete it.

18 Q. So it was a time limitation?

19 A. Correct.

20 Q. The technology existed to replace it all?

21 A. Yes.

22 Q. And that was the original design?

23 A. Correct.

24 Q. Did you feel that the system was in any way
25 compromised because it couldn't all be replaced at one

1 time?

2 A. No.

3 Q. Now, let's back away from Taum Sauk just
4 for a moment. In the course of your duties at AmerenUE,
5 you've worked at many different locations in the system;
6 isn't that correct?

7 A. Correct.

8 Q. Where is your base?

9 A. My base at the time when I was working for
10 generation engineering or now?

11 Q. How about now?

12 A. Now, I am based out of the Sunset Hills
13 office.

14 Q. And where's that?

15 A. Sunset, Missouri.

16 Q. Where's Sunset?

17 A. Lindbergh and 40, or Lindbergh and 44.

18 Q. Okay. So St. Louis County?

19 A. Uh-huh.

20 Q. Very well. How about when you were working
21 for Mr. Ferguson, where was your base?

22 A. The general office building off Chouteau in
23 St. Louis, Missouri.

24 Q. Downtown?

25 A. Yes.

1 Q. So you would travel to wherever the work
2 was being done; is that correct?

3 A. Correct. Well, we did -- I mean, we did do
4 work in the office, but we did travel to the plants also.

5 Q. That was going to be my next question. Am
6 I correct in understanding that much of the work, probably
7 as much as possible, would be done at your location in
8 St. Louis, and then you would travel to the different
9 sites as necessary?

10 A. Correct.

11 Q. Now, with respect to the Taum Sauk project,
12 I understand from Mr. Bluemner that he was in charge of
13 the liner installation. Did you understand that to be the
14 case?

15 A. That is correct.

16 Q. Did he have any supervisory duties or
17 powers with respect to you and the control project?

18 A. He did not.

19 Q. So it was two parallel projects that
20 happened to be occurring simultaneously, but you both
21 reported to someone else?

22 A. Correct.

23 Q. Okay. Did you work well with Mr. Bluemner?

24 A. Yes.

25 Q. Did you have to interface with him pretty

1 much in doing your project?

2 A. No. Just for when he was installing the

3 gage piping was about our only interface.

4 Q. So he installed the piping?

5 A. Correct.

6 Q. That was part of his project?

7 A. Correct.

8 Q. But the purpose of the piping was to hold

9 the control gages or probes?

10 A. Very good.

11 Q. Is that correct?

12 A. Correct.

13 Q. Okay. Now, why was it necessary to house

14 the probes in piping?

15 A. Because they removed the original piping

16 that was used originally, so he had to move that, remove

17 it to put in the liner, so to put in a -- some sort of

18 vessel to hold the instrumentation, and he selected to use

19 PVC pipe.

20 Q. Did you concur with that decision?

21 A. I wasn't in on that decision.

22 Q. You were not in on it?

23 A. Huh-uh.

24 Q. Do you have any opinion as to whether that

25 was an appropriate decision?

1 A. It seemed appropriate to me.

2 Q. Okay. What was the nature of the original
3 control piping that was removed?

4 A. I wasn't onsite. They pulled it out before
5 I got onsite. So I'm not quite sure. It was a
6 stainless -- or a tube, some metal tube, but I --

7 Q. So did you ever see it?

8 A. Did not.

9 Q. Okay. When you went down to Taum Sauk for
10 this project, was that your first visit to that site?

11 A. No. I'd been down earlier, you know,
12 because this -- the controls upgrade kept getting pushed
13 off. I know I'd been down there, like, '02 or '03 for
14 short meetings. What those meetings were about, I do not
15 recall.

16 Q. Were you entrusted with the controls
17 upgrade project from the very inception of that project?

18 A. No, I don't believe so. I think Chris
19 Hawkins was originally going to do the project.

20 Q. Okay.

21 A. But again, that would have been like '02.
22 Chris and I kind of started at the same time, and I do
23 believe he was originally assigned to do that project.

24 Q. Do you know why he didn't do it?

25 A. I think due to workload.

1 Q. He had too much else to do?

2 A. Yeah, I think so.

3 Q. Okay. And who made those assignments?

4 A. Bob Ferguson.

5 Q. It's my understanding from the testimony of

6 Mr. Zamberlan that Mr. Hawkins was in charge of what was

7 called the historian?

8 A. Correct.

9 Q. And that was also part of this project?

10 A. I don't know if it was a different work

11 order or not, but it coincided because he was doing

12 operator interface, so basically the -- the graphics for

13 running the control system.

14 Q. Is that the thing that was described by

15 Mr. Zamberlan as the human/machine interface?

16 A. Correct.

17 Q. The HMI?

18 A. Yes.

19 Q. Something like a computer terminal?

20 A. Yeah.

21 Q. Did that -- was it, in fact, a computer?

22 A. Yes.

23 Q. Did it run a proprietary program?

24 A. Yes.

25 Q. Who designed and constructed that program?

1 A. Wonderware.

2 Q. Wonderware?

3 A. Uh-huh.

4 Q. Did they do that as a subcontractor, or is

5 that an off-the-shelf item?

6 A. No. It's a software package, and then

7 Chris went ahead and did the development for it, Chris and

8 another gentleman. I don't recall his name.

9 Q. Now, we were told by Mr. Zamberlan that the

10 historian, in fact, was a Wonderware SQL industrial

11 server; is that correct?

12 A. I just know it was Wonderware. I don't

13 know.

14 Q. So far as you know, what is Mr. Hawkins'

15 background?

16 A. He's -- he's an I and C controls engineer.

17 Q. When you say I and C, what does that mean?

18 A. Instrument and controls.

19 Q. Okay. Is that part of electrical

20 engineering or is that --

21 A. Yes.

22 Q. -- a different specialty?

23 A. No. It is. I mean, it's a select field of

24 engineering, of electrical engineering.

25 Q. Okay. And that's also what Mr. Zamberlan

1 is?

2 A. Yes.

3 Q. How about you, is that what you are?

4 A. I kind of cover both power distribution and
5 somewhat controls. The majority of my background is in
6 power distribution.

7 Q. Okay. So your background, would you agree,
8 is somewhat broader than that of Mr. Hawkins or
9 Mr. Zamberlan?

10 A. Correct.

11 Q. But perhaps your expertise in controls is
12 not as deep?

13 A. No, it's not.

14 Q. Okay. So was it part of your job to hire
15 or find the personnel you would need to complete the
16 project?

17 A. Actually, no. I was -- had been -- I know
18 I had a -- I planned on doing the Taum Sauk upgrade
19 myself, and with internal designers, internal to Ameren,
20 but my workload got too great, so my boss suggested that
21 we tire Tony. Bob had a good background with Tony and was
22 confident in his abilities, so he suggested that we hire
23 him, and that's what we did.

24 Q. So originally you were going to design the
25 control system?

1 A. I was.

2 Q. Okay. If you know, how did the control
3 project come about?

4 A. I think they were having issues with
5 electromechanical relays failing, and it's a
6 troubleshooting nightmare trying to figure out -- I mean,
7 it's just a -- I shouldn't say it's a troubleshooting
8 nightmare, but it's very intricate. There's probably 2,
9 300 relays involved in this process of turning on the
10 generator or pump mode. And so when a relay hangs up,
11 it's quite a challenge to figure out what went wrong.

12 Q. Is it a difficult task to even identify
13 which relay has malfunctioned?

14 A. Well, it's a series of troubleshooting that
15 you must go through, but it can take a while. You get a
16 loose wire or a dirty contact or something like that,
17 you're looking at hundreds of contacts. It can be tough.

18 Q. So is the programmed logic controller-based
19 system easier to maintain and troubleshoot?

20 A. Very much so.

21 Q. Okay. And if you know, when was it decided
22 to replace the control system?

23 A. I think it was decided before I started on
24 with Ameren. So to give you an exact date, I'm not quite
25 sure.

1 Q. Okay. What was the date you started with
2 Ameren?

3 A. I think it was January of '02.

4 Q. So as far as you know, that project already
5 existed at that time?

6 A. It did.

7 Q. Now, you said you think Mr. Hawkins started
8 the same time you did?

9 A. Uh-huh.

10 Q. So if you know, who was in charge of that
11 project before Mr. Hawkins?

12 A. That I don't know. I do not know.

13 Q. Do not. Would Mr. Ferguson know that?

14 A. Yes.

15 Q. If you know, what is the -- what is the
16 flow of decision-making that would result in the inception
17 of a project like that? In other words, is it something
18 that Mr. Cooper came up with?

19 A. Yes. There's a meeting, and I don't know
20 if Rick was even at the plant at the time that that
21 decision would have been made for the controls upgrade.
22 But, yeah, the plant has so much money and a budget, and I
23 guess they sit, have a meeting and decide, you know, what
24 capital improvements they would like to make to the plant.
25 They kind of weigh those improvements, what's the most

1 beneficial project, and that's kind of how they do it.

2 Q. Okay. If you know, who would be involved
3 in that meeting?

4 A. I would think the plant managers, Bob
5 Ferguson or someone from generation engineering, probably
6 the supervisor, generation engineering.

7 Q. Who was that, if you know?

8 A. At that time, it would have been -- in the
9 original decision, that would be Jim Morgan.

10 Q. Is Mr. Morgan still with the firm?

11 A. He's not.

12 Q. Did he retire?

13 A. Yes.

14 Q. Who's in that position today, if you know?

15 A. James Witges.

16 Q. Now, when you were working for
17 Mr. Ferguson, you were not an employee of AmerenUE; is
18 that correct?

19 A. I was not. Originally, yeah, I was working
20 as a consultant.

21 Q. Originally you were a consultant. Okay.
22 How about when you became an Ameren employee, were you
23 working for AmerenUE?

24 A. Yes.

25 Q. So Mr. Ferguson's group is part of

1 AmerenUE, not Ameren Services?

2 A. No. They were Ameren Services. So I take
3 that back. Yeah, it was always Ameren Services when I
4 came on.

5 Q. All right. And if you know, that's a
6 separate corporation, is it not?

7 A. It is.

8 Q. Your paycheck, for example, said Ameren
9 Services on it?

10 A. I do believe so.

11 Q. And who was Mr. Ferguson's boss, if you
12 know?

13 A. Would be James Witges.

14 Q. At that time?

15 A. Yes.

16 Q. And how about today?

17 A. Still.

18 Q. Okay. And who would be Mr. Witges' boss,
19 if you know?

20 A. Would be Bob Powers.

21 Q. At that time?

22 A. Yes.

23 Q. And today?

24 A. Yes.

25 Q. Do you happen to know what Mr. Powers'

1 title is?

2 A. Vice president of Ameren Services, I do

3 believe.

4 Q. Okay. And if you know, who does he report

5 to?

6 A. Allen Kelly.

7 Q. Is that true now?

8 A. Yes.

9 Q. Was that true at the time?

10 A. Yes.

11 Q. And do you know what Mr. Kelly's title is?

12 A. President and CEO of Ameren -- Ameren

13 Energy Services or Sources.

14 Q. And would it be correct that he reports to

15 Mr. Rainwater?

16 A. Yes, he does.

17 Q. Now, Mr. Ferguson, if you know, is he an

18 engineer?

19 A. Yes, he is.

20 Q. Do you know if he's a registered

21 professional engineer?

22 A. He is.

23 Q. Of the various disciplines within the label

24 engineering, do you know which discipline he's trained in?

25 A. He covered both the power and the

1 instrument or control side of -- I mean, we were one
2 group, and we did both controls projects and distribution
3 or electrical projects, if you want to call it, and he --
4 he supported both.

5 Q. So would I be correct in understanding him
6 to have been an electrical engineer, just as you are?

7 A. Correct.

8 Q. Okay. And if you know, is Mr. Witges an
9 engineer?

10 A. Yes, sir.

11 Q. What kind of engineer is he?

12 A. I do believe he's a chem E and also a
13 double E.

14 Q. Okay. What's a chem E?

15 A. Chemical engineer.

16 Q. He's a chemical engineer and an electrical
17 engineer?

18 A. Correct.

19 Q. Okay. If you know, how about Mr. Powers,
20 is he an engineer?

21 A. He is an engineer.

22 Q. Do you know what kind of engineer
23 Mr. Powers is?

24 A. I do believe he is a civil engineer.

25 Q. And if you know, how but Mr. Kelly?

1 A. That I don't -- I want to guess an
2 electrical, but I couldn't say for sure.

3 Q. Do you know for sure that he is an engineer
4 of some kind?

5 A. Yes.

6 Q. But you're not sure what kind?

7 A. No.

8 Q. Okay. And it's my understanding
9 Mr. Rainwater also has an engineering background. Is that
10 so?

11 A. That's correct.

12 Q. Do you know what kind of engineer
13 Mr. Rainwater is?

14 A. Electrical.

15 Q. Now, it's true, is it not, that Rick Cooper
16 was in charge at Taum Sauk?

17 A. He was the plant manager, correct.

18 Q. Okay. And do you know who his boss was?

19 A. His boss at that time I do believe was
20 Warren Witt.

21 Q. Okay. Now, if you know, was Mr. Cooper an
22 engineer?

23 A. Yes.

24 Q. What kind of engineer was he?

25 A. He's electrical.

1 Q. How about Mr. Witt, if you know?

2 A. That I do not know.

3 Q. Don't know. Okay. Do you know who

4 Mr. Witt reported to at that time?

5 A. I think Mr. Birk.

6 Q. Okay. How about now, if you know?

7 A. I would still think Mr. Birk.

8 Q. Okay. And do you happen to know whether or

9 not Mr. Birk is an engineer?

10 A. He is an engineer.

11 Q. Do you know what kind?

12 A. He's electrical engineer.

13 Q. All right. And if you know, who did

14 Mr. Birk report to at that time?

15 A. Mr. Voss.

16 Q. Okay. And if you know, is Mr. Voss an

17 engineer?

18 A. Yes, he is.

19 Q. What kind?

20 A. I want to say electrical.

21 Q. And would I be correct in understanding

22 that Mr. Voss reported at that time and also now to

23 Mr. Rainwater?

24 A. That is correct.

25 Q. Okay. Now, with respect to the

1 instrumentation and control project at Taum Sauk, were you
2 given a budget?

3 A. We were given a budget.

4 Q. And was there any kind of penalty for you
5 if the project cost more than the budget?

6 A. Penalty to me?

7 Q. Yes.

8 A. Well, penalty to my work order, and then I
9 would have to go in front of the board and explain why we
10 went over budget.

11 Q. Okay. And that's not a good thing, is it?

12 A. It's not a good thing.

13 Q. Okay. How about if you got the project
14 done under budget, was that a good thing?

15 A. Well, they don't want you go way under. If
16 you tell them it's going to cost something or cost a
17 certain cost, then you need to be within plus or minus
18 10 percent, kind of the rule of thumb.

19 Q. Okay. And in doing the costing, who did
20 that?

21 A. Tony Zamberlan.

22 Q. Would you have done that had you designed
23 the system?

24 A. Correct.

25 Q. And that basically meant selecting the

1 components and pricing them?

2 A. Uh-huh.

3 Q. And then calculating the length of time

4 installation would cost?

5 A. Length of time, construction, training.

6 Q. And you had to do this with a 10 percent

7 level of tolerance?

8 A. Correct.

9 Q. That sounds like difficult -- difficult

10 work. Did you find that difficult?

11 A. It can be challenging, depending on the

12 size of the project.

13 Q. Now, when the decision was made to pass the

14 design of the system to Mr. Zamberlan, what stage was the

15 project in at that time?

16 A. It was preliminary. Nothing really had

17 been done.

18 Q. Okay. Do you remember about when that was?

19 A. I want to say May of '04.

20 Q. Okay. Now, at that time, in May of '04,

21 was an outage already scheduled?

22 A. Yes.

23 Q. And when was the outage to be?

24 A. September of '04.

25 Q. Okay. So Mr. Zamberlan had four months to

1 design the project; is that correct?

2 A. That's correct.

3 Q. Did you consider that an adequate interval?

4 A. I did consider that an adequate interval,

5 if someone worked on it full-time with a series of

6 designers.

7 Q. And Mr. Zamberlan, did he have a series of

8 designers to work with him?

9 A. He had one designer.

10 Q. And that designer also worked for him and

11 his firm?

12 A. No. He actually worked for Ameren.

13 Q. Okay. Who was that?

14 A. Art Fishman.

15 Q. Now, Art Fishman, who did he work for at

16 Ameren?

17 A. He worked for Janice Pelligrini.

18 Q. Could you spell that last name, if you

19 know?

20 A. P-e-l-l-i-g-r-i-n-i.

21 Q. Okay.

22 A. I think.

23 Q. And what was her title, if you know?

24 A. I would say she's the head of drafting, the

25 drafting department, but her formal title I do not know.

1 Q. Okay. But functionally she was the head
2 drafter?

3 A. Correct.

4 Q. Or head of drafters?

5 A. Supervisor.

6 Q. Was that part of your shop back in
7 St. Louis at the head office?

8 A. Correct.

9 Q. Part of the engineering shop?

10 A. Yes.

11 Q. So did she report to Mr. Ferguson?

12 A. No.

13 Q. Who did she report to?

14 A. I do believe she reported to -- I'm
15 forgetting his name. I can picture him, but I can't
16 remember his name.

17 Q. Okay. The guy whose name you can't recall,
18 who did he report to, if you remember?

19 A. That I could not tell you.

20 Q. You don't know?

21 A. No.

22 Q. Was there someone that was the chief
23 engineer or head of engineering?

24 A. Head of engineering?

25 Q. Right.

1 A. Well, that was -- I mean, so they're the
2 drafting department, and then there's the engineering
3 department. So the engineering department, head of
4 generation engineering would be James Witges.

5 Q. Okay. So drafting wasn't part of
6 engineering?

7 A. No.

8 Q. It was a separate department?

9 A. Separate department.

10 Q. As far as you know, was it also part of
11 Ameren Services Corporation?

12 A. You got me on that. I'm not sure.

13 Q. You don't know. Okay. So if you know, who
14 was it that decided to make Art Fishman available to
15 Mr. Zamberlan as his designer?

16 A. Bob Ferguson.

17 Q. Did he do that by arrangement or agreement
18 with Janice Pelligrini?

19 A. Yes.

20 Q. As far as you know, was that a standard
21 sort of arrangement at Ameren for projects?

22 A. It's not standard, but -- and I'm not quite
23 sure why that structure was selected.

24 Q. Okay. So it was a little bit unusual?

25 A. Yeah.

1 Q. And Mr. Fishman's skills and talents, so
2 far as you know, he was a draftsman?

3 A. Very, very good, very meticulous.

4 Q. A good draftsman. But as far as you know,
5 he was not an engineer, was he?

6 A. No, he's not an engineer.

7 Q. Okay. Now, in addition to Mr. Zamberlan,
8 were there any other outside contractors that Ameren
9 employed in installing the control and instrumentation
10 system?

11 A. Yes. We hired a gentleman, it was American
12 Governor, Dan Berrien, to do the governor controls,
13 because they had just -- well, not just, but they had put
14 in a control system, I don't know how many years previous
15 to when we replaced it, but it was kind of antiquated and
16 spare parts were very expensive.

17 So we thought, well, since we're doing the
18 replacement of the electromechanical controls, we've got
19 this stand-alone governor system that wouldn't talk to the
20 new controls we were putting in, we decided to replace
21 that also. So we hired Dan because that was his
22 expertise.

23 Q. Now, the governor, if I'm correct, does
24 that control the speed that the turbines run at?

25 A. Correct.

1 Q. And so with the new governor, this would
2 all be integrated into the programmable logic control
3 system?

4 A. Very good.

5 Q. Okay. Where were the operators who used
6 these human/machine interfaces, where were they located?

7 A. Down in the plant, elevation 3, I do
8 believe it is.

9 Q. So at the plant at Taum Sauk?

10 A. Yes.

11 Q. In the powerhouse?

12 A. In the powerhouse. Then also they had
13 remote monitoring of the units at Osage.

14 Q. How about St. Louis, was there remote
15 monitoring in St. Louis?

16 A. I do believe they do have monitoring at
17 St. Louis.

18 Q. And where in St. Louis would that be? Was
19 that on Chouteau?

20 A. Yes.

21 Q. So the plant could actually be controlled
22 from any of those three locations; is that correct?

23 A. I don't think they could -- I'm guessing
24 here. I don't think they --

25 Q. Don't guess.

1 A. Okay.

2 Q. Just tell me what you know.

3 A. I know they can do it at Osage, and I know

4 we could do it at Taum Sauk.

5 Q. But you don't know that it could be done

6 from St. Louis?

7 A. No.

8 Q. Okay.

9 A. Huh-uh.

10 Q. But if they did have remote monitoring

11 there, they could at least see the readings; is that

12 correct?

13 A. Correct.

14 Q. Now, it's my understanding, and tell me if

15 this is correct or not, that Taum Sauk was manned only for

16 one shift during the week?

17 A. That is correct.

18 Q. Basically eight to five?

19 A. Correct.

20 Q. Monday through Friday?

21 A. Correct.

22 Q. And the rest of the time it would be

23 operating remotely. Is that your understanding?

24 A. That's my understanding.

25 Q. Okay. And how did the signals get from

1 Taum Sauk to Osage?

2 A. Microwave, I do believe.

3 Q. Was this a dedicated microwave facility?

4 A. I can't answer that.

5 Q. Don't know that?

6 A. I don't know.

7 Q. Who was in charge of that, if you know?

8 A. I don't know that.

9 Q. Was that part of the upgrade?

10 A. No. That was already installed.

11 Q. And so far as you know, it was sufficient

12 and did not need to be replaced or upgraded?

13 A. No.

14 Q. Okay.

15 A. It was fine. I need to -- Rick Cooper

16 could also -- Chris installed that HMI at Rick Cooper's

17 house to be able to monitor also.

18 Q. If you know, could Mr. Cooper operate the

19 dam from there?

20 A. I don't -- well, I can't answer that.

21 Q. You don't know. Okay. And if I wanted to

22 know more about this microwave system, who could I ask

23 about that?

24 A. I would start with Chris Hawkins. That

25 would lead you in the right direction.

1 Q. Okay. So after you handed the design
2 responsibility off to Mr. Zamberlan, what was your
3 responsibility with respect to the control project?

4 A. Kind of became a support role, to make sure
5 everything was keeping on schedule.

6 Q. So you delegated quite a bit of the
7 responsibility to Mr. Zamberlan?

8 A. I did.

9 Q. And you expected him to have the expertise
10 and the know-how to get it done?

11 A. I did.

12 Q. Now, when the time came and the outage
13 occurred and it was time to actually go to the plant and
14 physically install the components, who did that?

15 A. We hired Sachs Electric, an electrical
16 contractor, to do the installation of the equipment.

17 Q. Okay. And where's Sachs Electric located?

18 A. They're located in Fenton, Missouri.

19 Q. Any particular person at Sachs?

20 A. Dave Otte was the foreman, and Chris
21 Garaffalo was the project manager.

22 Q. And did they their bring their own
23 laborers?

24 A. They did.

25 Q. And how long did it take them to install

1 the components?

2 A. From the beginning of the outage right up
3 'til the end.

4 Q. Thirty days?

5 A. No. What was it, in September -- I can't
6 remember whether it was September 15th outage to November.
7 I know we came out of the outage November 15th. Then
8 there was some cleanup work. They were actually -- once
9 the unit was on, they were there doing work also.

10 Q. So were you onsite that entire time?

11 A. Pretty much, during the outage.

12 Q. How about Mr. Zamberlan, was he onsite
13 throughout that outage?

14 A. He was.

15 Q. Where did you guys stay?

16 A. As far as where we stayed at night?

17 Q. Yeah. Where did you stay in Reynolds
18 County?

19 A. He stayed at the Shepherd Mountain, and I
20 stayed at the Fort Davidson.

21 Q. Okay. In addition to you and
22 Mr. Zamberlan, how many other people were onsite for the
23 purpose of installing the control system?

24 A. Just for the -- just the controls?

25 Q. Just the controls.

1 A. Chris Hawkins, and again, he had a
2 consultant working with him. I don't recall his name.

3 Q. Now, Hawkins was doing, I believe we said,
4 the historian; is that correct?

5 A. Correct.

6 Q. Was that part of the control project or was
7 that a separate project?

8 A. I'm going to say it was a separate -- it
9 was a separate project. He had his own budget.

10 Q. So he -- he interfaced with you, but he
11 didn't report to you?

12 A. No.

13 Q. He also reported to Mr. Ferguson?

14 A. Correct.

15 Q. And did he finish his project more quickly
16 or did it take less time, do you recall?

17 A. I think he finished right about the same
18 time that the unit was coming on.

19 Q. Okay. Did Mr. Hawkins help out with the
20 control project in any way?

21 A. No, he did not. I know him and Tony had
22 some interfaces on issues, which would be common, because
23 you had the -- the computer system has to talk to the HMI
24 so it gets the information in the correct areas. So they
25 definitely were talking, but as far as in the control

1 systems making suggestions, I don't believe so.

2 Q. Now, Mr. Hawkins' project included the HMI;
3 is that correct?

4 A. Correct.

5 Q. And the HMI was actually a crucial part of
6 the control system, was it not?

7 A. It's how you operate.

8 Q. Without that, the control system was
9 meaningless, correct?

10 A. Correct.

11 Q. And so you said that you believe he and
12 Mr. Zamberlan interfaced on issues. By that you mean they
13 worked cooperatively?

14 A. Yes.

15 Q. As far as you know, they got along?

16 A. Yes. There were some issues, but more or
17 less they got along.

18 Q. When you say there were some issues, what
19 were they?

20 A. Just typical, you know.

21 Q. I don't know. I'm a lawyer, not an
22 engineer, so I don't know.

23 A. They got along fine. They did have some
24 squabbles, but nothing major.

25 Q. Okay. Were these -- in your mind, were

1 these personality differences?

2 A. Probably.

3 Q. Okay. They have different styles?

4 A. Very well put.

5 Q. Okay. To your knowledge, were there any
6 professional differences between the two of them?

7 A. No. They're both very professional.

8 Q. As far as you know, they didn't have any
9 professional disagreements about the design or the
10 implementation of any part of the systems?

11 A. No, not that I'm aware of.

12 Q. Okay. And in the course of this project,
13 the installation phase during the outage, who were you
14 reporting to?

15 A. Who was I reporting to?

16 Q. Yes.

17 A. Bob Ferguson.

18 Q. Mr. Ferguson. Was he ever onsite during
19 this period?

20 A. He would come for a site visit maybe once
21 or twice during the outage, as I recall.

22 Q. And how often did you report to him?

23 A. Usually through e-mails and telephone
24 calls. He would check in to see how things were going.

25 Q. But, I mean, did you contact him on a daily

1 basis?

2 A. Not on a daily basis.

3 Q. How about Mr. Cooper, how often did you
4 talk to Mr. Cooper during this period?

5 A. It's hard to say. I mean, we'd see him
6 every day because we're working in the same location. You
7 know, we had a weekly meeting to talk construction, to see
8 where we were at. If there were issues and they needed
9 attention, we would talk.

10 Q. If you know, did Mr. Cooper have any
11 significant input into the control system design created
12 by Mr. Zamberlan?

13 A. I do not know that.

14 Q. Okay.

15 A. I know they had meeting -- during the --
16 before the outage, they had design review meetings. A few
17 of those I did not make. Actually, I don't think I made
18 any of them. So I don't know what was discussed in those
19 meetings. That would have been the largest interface
20 where Rick would have been giving input on the design.

21 Q. How many design review meetings were there,
22 if you know?

23 A. I do not know.

24 Q. Where were they held, if you know?

25 A. I do believe at the plant.

1 Q. Okay. So would I be correct in
2 understanding that Mr. Zamberlan would travel to the plant
3 and meet with Mr. Cooper at the plant?

4 A. Correct.

5 Q. And they would go over the control system
6 design?

7 A. Correct.

8 Q. And at that time, it's possible Mr. Cooper
9 had input into the design?

10 A. Correct.

11 Q. But you did not attend any of these
12 meetings yourself?

13 A. I did not.

14 Q. In addition to Mr. Zamberlan and
15 Mr. Cooper, who attended these meetings?

16 A. Bob Ferguson, I think I seen once on
17 meeting minutes, and Jeff Scott.

18 Q. Do you think Jeff Scott attended most of
19 the meetings?

20 A. I couldn't say for sure.

21 Q. What was his job, if you know?

22 A. He was a plant engineer.

23 Q. Assigned to Taum Sauk?

24 A. Uh-huh.

25 Q. What kind of engineer was he?

1 A. Electrical. I should say plant engineer
2 and also he ran the union personnel.

3 Q. Do you mean he supervised the union
4 personnel?

5 A. He did.

6 Q. And these would be the persons that are
7 occasionally referred to as technicians?

8 A. Correct.

9 Q. Like, for example, Bob Scott?

10 A. Uh-huh.

11 Q. Okay. And what did these people do at the
12 plant? Do you know?

13 A. They are the technicians that if there were
14 problems, they solved the problems. They were
15 troubleshooters and general maintenance. That's their
16 duties.

17 Q. Were you ever present at Taum Sauk when it
18 was being operated from the controls at Taum Sauk?

19 A. Yeah. The very first startup when we were
20 coming out of the outage.

21 Q. And so who was manning the HMI at that
22 time?

23 A. I do not recall.

24 Q. Would it have been Mr. Cooper?

25 A. I -- I doubt it. See, the actual main

1 controls weren't in there at the time, so --

2 Q. Where were they?

3 A. Well, I'm saying it was still
4 electromechanical, but the governor controls were on the
5 HMI. So there were some controls from the HMI for the
6 governor, but the main -- again, for the main pump gen
7 were not -- were not installed yet.

8 Q. Okay. So they were not all installed at
9 the same time?

10 A. Correct.

11 Q. Part of the system perhaps was brought
12 online before the rest was ready?

13 A. Correct.

14 Q. Okay. So you don't know as part of normal
15 operating procedure who would be running the HMI at
16 Taum Sauk?

17 A. Well, normally -- normal operation would be
18 Osage, is my understanding.

19 Q. Would be Osage. But you don't know who at
20 Osage?

21 A. No, I do not.

22 Q. After the installation was completed, there
23 was a shakedown or startup period; is that correct?

24 A. Correct.

25 Q. Do you recall how long that period lasted?

1 A. I do not.

2 Q. Were you involved in that period?

3 A. No, because once -- once they started

4 filling the reservoir with water, I pretty well had

5 another project, actually our Lavity plant, that I left to

6 go support that project. So Tony was there and Dan

7 Berrien was there, and that was -- they did the controls.

8 So they were the key players in getting the plant up and

9 the plant running. So I wasn't there during that initial

10 startup period.

11 Q. But Mr. Zamberlan and Mr. Berrien were?

12 A. Yes, they were.

13 Q. And they were the key players in designing

14 and installing the control system?

15 A. For starting up, correct.

16 Q. Okay. Now, in the course of installing the

17 project, at any time were you aware that the parapet wall

18 at the upper reservoir was not level?

19 A. I was.

20 Q. How did you become aware of that?

21 A. From Steve Bluemner.

22 Q. How did Mr. Bluemner happen to tell you

23 that?

24 A. I do believe it was a conversation with a

25 document showing me the elevations on a sheet of paper.

1 Q. Do you happen to know about when that
2 conversation occurred?

3 A. I do not. I mean, I want to say after he
4 surveyed the wall, which would have been sometime in
5 November of '04.

6 Q. Now, the control system at Taum Sauk used
7 certain sensors, correct?

8 A. Correct.

9 Q. And these sensors were of two types; is
10 that correct?

11 A. Correct.

12 Q. There were sensors that were referred to as
13 Warrick probes?

14 A. Correct.

15 Q. And there were also sensors that were
16 continuously transmitting piezometers; is that correct?

17 A. Correct.

18 Q. And all of these sensors were installed in
19 the piping along the side of the reservoir; is that
20 correct?

21 A. Correct.

22 Q. And the sensors hung in the pipes on
23 cables; is that correct?

24 A. Correct.

25 Q. Now, if you know, was it important to

1 install these sensors at a particular level or depth?

2 A. It was.

3 Q. And who was in charge of that installation?

4 A. I installed the probes.

5 Q. All of them?

6 A. All of them.

7 Q. Warrick and piezometers?

8 A. I did.

9 Q. Do you recall what day you did that?

10 A. I do not.

11 Q. Now, the piping in which the sensors were

12 installed came up to an enclosure or metal box at the top

13 of the parapet; is that correct?

14 A. Correct.

15 Q. And inside the box, the end of each pipe

16 was visible?

17 A. Uh-huh.

18 Q. And then there was a rack at the top from

19 which the cables could be secured; is that correct?

20 A. Correct.

21 Q. And then the cables ran from that box into

22 the adjacent gage house; isn't that correct?

23 A. Correct.

24 Q. Where the programmable logic controller for

25 the upper reservoir was located?

1 A. Correct.

2 Q. And a certain type of fastener was used to
3 hold the cables; isn't that correct?

4 A. Correct.

5 Q. What was that fastener called?

6 A. A Kellum's grip.

7 Q. A Kellum's grip?

8 A. And they also used a wire tie.

9 Q. Kellum's grip and wire tie. Now, if you
10 know, what elevation was the ends of those pipes at?

11 A. The ends of the pipe elevation?

12 Q. Yes.

13 A. I couldn't tell you exact elevation, where
14 they're at.

15 Q. Okay. So when you hung the probes in the
16 piping, how did you determine or measure that the probes
17 were at the right height?

18 A. Steve had given us an elevation at the top
19 of the wall, and then we determined -- we knew that
20 elevation, and the pipes were a certain distance above the
21 top of the wall.

22 Q. By that you mean the ends of the pipes?

23 A. The ends of the pipes.

24 Q. Okay. So you don't remember today what
25 that elevation was?

1 A. No.

2 Q. But you knew it at the time?

3 A. Correct.

4 Q. So you would -- you would put the probes

5 in, and you would basically -- you would have a marker on

6 the cable; is that correct?

7 A. Right.

8 Q. In fact, a piece of tape?

9 A. We used colored phase tape.

10 Q. And the tape was set a predetermined

11 distance from the probe?

12 A. Correct.

13 Q. So that if the tape was at the right spot,

14 the probe would hang in the pipe at the right depth?

15 A. Very good.

16 Q. Okay. Now, and that was measured against

17 the top of the pipe?

18 A. Correct.

19 Q. And you knew that elevation?

20 A. Correct.

21 Q. Okay. Now, was that elevation -- if you

22 know, was that elevation taken with reference to the

23 lowest point on the parapet wall?

24 A. The elevation on the top of the pipe?

25 Q. Yes.

1 A. No. No.

2 Q. Okay. You told us that Mr. Bluemner, after
3 his survey in November, told you that the parapet wall was
4 not level?

5 A. Correct.

6 Q. If you remember, was that the first time
7 you learned that?

8 A. Yes.

9 Q. Were you surprised to learn that?

10 A. Yes.

11 Q. Had you already hung the probes by that
12 time?

13 A. No.

14 Q. Did you take that information into account
15 when you hung the probes?

16 A. No. Somehow I'd gotten, again, this
17 elevation of 1596 and 1596.2. I don't know how I got that
18 elevation, but that's -- that's the depth that I set the
19 probes at. Again, 1596 and 1596.2, wasn't thinking in
20 relative to the low point of the wall. It's just this is
21 how far down they need to be from the gage house.

22 Q. Okay. As a practical matter, it was
23 important that these upper Warrick probes be at the proper
24 elevation with respect to the low point on the parapet
25 wall; isn't that correct?

1 A. Correct.

2 Q. If they were higher than that low point,
3 they wouldn't work right, would they?

4 A. Very good.

5 Q. Do you happen to know whether these
6 figures, 1596.0 and 1596.2, do you happen to recall
7 whether those figures are appropriate given the elevation
8 of the low point on the parapet wall?

9 A. They are below the low point on the wall.

10 Q. They're below the low point?

11 A. Correct.

12 Q. Would I be correct in saying that the low
13 point, in fact, was 1597?

14 A. It's a foot lower than what it is at the
15 gage house, so --

16 Q. Do you remember what it is at the gage
17 house?

18 A. That sounds right. Or no. 1598 at the
19 gage house, I do believe.

20 Q. So it would be 1597 at the low point?

21 A. Very good.

22 Q. Do you happen to recall, is that panel 72?

23 A. That I couldn't say.

24 Q. Don't remember that. Okay. Do you know
25 whether the -- and we're talking here about the upper

1 Warrick probes, correct?

2 A. Correct.

3 Q. Referred to as the high and high-high

4 probes?

5 A. Correct.

6 Q. And I think -- would I be correct in

7 understanding that that means that the high-high probe is

8 above the high probe?

9 A. Very good.

10 Q. So the high-high probe was supposed to be

11 at 1596.2?

12 A. Correct.

13 Q. And the high probe at 1596.0?

14 A. Correct.

15 Q. Do you happen to know, were they ever moved

16 after you installed them?

17 A. They were -- they were moved after I

18 installed them.

19 Q. Do you know when that was?

20 A. Well, somewhere after coming out of the

21 outage in December.

22 Q. So after the outage, they were moved?

23 A. Correct.

24 Q. Do you know who moved them?

25 A. I do not, other than a reference from an

1 e-mail from Tony saying he's moving the probes.

2 Q. Based on that e-mail, is it your belief
3 that Mr. Zamberlan moved the probes?

4 A. Based on that e-mail, I would think you'd
5 have to assume that.

6 Q. Did you authorize anyone to move the
7 probes --

8 A. I did not.

9 Q. -- after you first installed them?

10 A. I did not.

11 Q. Okay. Do you know anyone who did authorize
12 them to be moved?

13 A. I do not.

14 Q. Could just anyone go up there and move
15 them?

16 A. I don't believe so.

17 Q. It's my understanding that when examined by
18 the FERC, the high-high probe was found to have an alarm
19 fixed to it, so that when water touched the high-high
20 probe, an alarm would be triggered?

21 A. Correct.

22 Q. There seemed to be discussion in one of the
23 two FERC reports that that was unusual, that the more
24 common arrangement would be for the high probe to trigger
25 an alarm and the high-high probe to trigger shutdown. Do

1 you have any comment on that?

2 A. I would think the high or the high-high
3 both should have had an alarm on them, and they both
4 should shut down, would be my comment on that.

5 Q. Now, other than Taum Sauk, have you worked
6 at any other dam?

7 A. I have not.

8 Q. And as an electrical engineer, you don't
9 have any special expertise with dams, do you?

10 A. I do not.

11 Q. And you worked at Taum Sauk because you are
12 an expert in automatic control systems?

13 A. I wouldn't call myself an expert.

14 Q. But you were originally planning to do the
15 job yourself?

16 A. I was.

17 Q. So even though you wouldn't call yourself
18 an expert, you do believe that you have the knowledge and
19 the experience necessary to do that job?

20 A. I do.

21 Q. And you hired Mr. Zamberlan only because
22 you had too much other work to do?

23 A. Correct.

24 Q. But you would agree that Mr. Zamberlan has
25 more expertise in automatic controls than you do?

1 A. He does.

2 Q. That's his special focus?

3 A. His special focus.

4 Q. Okay. So what level, if you remember, were

5 the piezometers installed at?

6 A. 1500.

7 Q. Okay. And it's correct, is it not, that

8 these are probes that measure pressure?

9 A. Correct.

10 Q. And they measure from zero to 100?

11 A. Correct.

12 Q. So 1596 would be well within their capacity

13 if they're set at 1500?

14 A. They would be.

15 Q. Do you happen to know, what was the normal

16 operating level at the upper reservoir?

17 A. They set it at 1596.

18 Q. Okay. Now, you told us that you installed

19 the high probe at 1596.0?

20 A. Uh-huh.

21 Q. And so am I correct in understanding that,

22 in normal operation, when they reached the normal

23 operating level of 1596.0, that would, in fact, trigger

24 the high probe?

25 A. It would have.

1 Q. So that the triggering of the high probe
2 would occur every time they used the dam?

3 A. Correct.

4 Q. Okay. And that's -- and you understood
5 that's how it was designed to be?

6 A. I don't think it was designed to be that
7 way, no.

8 Q. You don't. How do you think it was
9 designed to be?

10 A. I think it was designed that -- well, I
11 mean, after this whole investigation and looking back at
12 it, I mean, I do believe that 1596 was where the high and
13 the high-high level probe should have been set, and that
14 the normal shutdown should have been 1595.

15 Q. Okay. That the operating level should have
16 been 1595?

17 A. This again was after the investigation of
18 looking over everything, I mean.

19 Q. Okay. Did you have any part in approving
20 the design that Mr. Zamberlan came up with?

21 A. Approving the -- his design as far as?

22 Q. The control system design.

23 A. The -- all of his logic that he --

24 Q. Did you approve it?

25 A. I did not approve it. I mean, all the

1 logic that he did? No, I did not.

2 Q. That was not part of your function?

3 A. No. I did review the high-level
4 programming, the original high-level programming. I did
5 review that and approve it.

6 Q. When you say high-level programming, you
7 mean the logic that was programmed into the PLC?

8 A. Correct, for the high-level control.

9 Q. So that means you understood that the
10 output would be given certain specified inputs?

11 A. Correct.

12 Q. So you knew, for example, that if the high
13 probe was triggered, what would happen?

14 A. Correct.

15 Q. And what would happen if the high-high
16 probe were triggered?

17 A. Correct.

18 Q. Now, you told us that it's your opinion
19 that there should have been an alarm and a shutdown for
20 each of those?

21 A. Uh-huh.

22 Q. If you know, in fact, was that how it was
23 designed?

24 A. Originally it was designed as either high
25 or high-high got wet, it tripped the unit. I don't recall

1 if there was an alarm on the high probe, but it definitely
2 tripped on high or high-high.

3 Q. Okay. And at that time, originally as
4 designed and as originally installed, the two probes
5 worked in parallel, correct?

6 A. Correct.

7 Q. Meaning that either one of them could trip
8 independently?

9 A. Correct.

10 Q. Are you aware that they were later
11 reprogrammed so that they were in series?

12 A. I was not.

13 Q. Would you have approved that change?

14 A. I would not have.

15 Q. Am I correct in understanding that that
16 reprogramming meant that both probes had to trigger in
17 order to get an output?

18 A. Correct.

19 Q. Are you aware that a one-minute delay was
20 put on each of those probes?

21 A. I was not.

22 Q. Would you have approved that?

23 A. Not a one-minute delay. I could see five
24 seconds or two seconds, but not a minute.

25 Q. You think a minute was too long?

1 A. Yes.

2 Q. For example, if overtopping occurred, you
3 wouldn't want it to go on for a minute?

4 A. Correct.

5 Q. Now, Mr. Zamberlan told us that every
6 change he made was approved by either Mr. Cooper or
7 Mr. Jeff Scott. Do you have any reason to doubt that?

8 A. I can't comment on that. I don't know.

9 Q. Okay. You were not always privy to the
10 conversations between Zamberlan and the dam engineers; is
11 that correct?

12 A. Correct.

13 Q. Is it possible that they approved these two
14 changes?

15 A. They could have.

16 Q. But you still believe it would -- it was
17 ill advised?

18 A. It was ill advised.

19 Q. Okay. Somewhere in those FERC reports it
20 says that the dam was originally designed to operate with
21 two feet of freeboard. Is that correct as far as you
22 know?

23 A. I do not know that.

24 Q. And that's not the sort of thing you would
25 know, is it?

1 A. No. I'm not a -- I'm not an operator.

2 Q. There's also, I believe, an indication that
3 the -- prior to this outage in 2004, that the normal
4 operating depth of the upper reservoir was 1595. Do you
5 know whether or not that's the case?

6 A. I do not know if that's the case.

7 Q. So you don't know whether that normal
8 operating level, in fact, was raised by a foot?

9 A. I do not.

10 Q. Okay. Now, you were interviewed by the
11 Missouri Highway Patrol; isn't that correct?

12 A. I was.

13 Q. And you were interviewed by the Missouri
14 Highway Patrol on January 9 of 2006. Do you recall?

15 A. I do.

16 Q. And have you had an opportunity to review
17 the Highway Patrol's notes of that interview recently?

18 A. I have.

19 Q. And I'm going to hand you a copy of that.

20 MR. THOMPSON: Why don't we go ahead and
21 mark this as an exhibit, Judge. I think we're up to 13.

22 JUDGE DALE: Yes.

23 BY MR. THOMPSON:

24 Q. And I'm going to take a moment to redact
25 personal information of yours from the report, such as

1 your birth date and your telephone number and your
2 residence address. Okay. Because that doesn't need to be
3 in the public record. I'll take a moment here. And this
4 redacted one is the one I'll give to the court reporter to
5 make a part of the record.

6 (EXHIBIT NO. 13 WAS MARKED FOR
7 IDENTIFICATION.)

8 BY MR. THOMPSON:

9 Q. Take a look, if you would, at paragraph
10 No. 1. Do you have any changes to paragraph No. 1?

11 A. I do not.

12 Q. Okay. So you're comfortable with that as
13 it stands.

14 Take a look at paragraph No. 2, and
15 understanding that I have redacted from that your birth
16 date, your residential address, your residential telephone
17 number, do you have any changes to that paragraph?

18 A. I do not.

19 Q. Now, let's look at paragraph No. 3. Do you
20 have any changes to paragraph No. 3?

21 A. I do.

22 Q. What are your changes?

23 A. Well, starting with they should have been
24 24 and 22 inches from the top of the wall. Mr. Pierie
25 stated Bob Scott was with him when inspecting the probes.

1 Mr. Pierie stated there had been reports of wave action on
2 top of the reservoir. I guess I'm just kind of confused
3 on what he's saying here.

4 Q. Okay.

5 A. The waves would hit the probes when they
6 were set at 24 and 22 inches. The probes were too low
7 because of the wave action. He stated they must have been
8 raised, but I don't know by who, Mr. Pierie stated.
9 It's -- I don't think it's very well stated.

10 Q. Okay. What changes would you make?

11 A. I guess what I'm trying to say here is that
12 originally where they were set was at 1596 and 1596.2, and
13 then we had this high-level trip, and they said I had the
14 probes set too short or too low, and because they were set
15 too low and waves would hit the probes and would trip the
16 unit off. And so that's why they had been raised.

17 Q. And that accords with what you've told us
18 today, doesn't it?

19 A. Yes, it does. But I guess that's what this
20 is trying to say, but I -- I guess the wording to me is a
21 little confusing.

22 Q. You think it's, as we say in the law,
23 inartfully drafted?

24 A. Okay.

25 Q. Not as clear as it could be?

1 A. Very good.

2 Q. Okay. But do you have any specific changes
3 you would make to that wording?

4 MS. HOUSE: Your Honor, I think I'll object
5 to this. I think he's trying to explain what he thinks it
6 should say, and I'm not sure what we're trying to get at,
7 whether it's him trying to recreate what he thinks he told
8 the State Highway Patrol over a year ago or trying to
9 convey what he had.

10 MR. THOMPSON: I just --

11 MS. HOUSE: I don't know if the witness can
12 do any more than he's already done in explaining what he
13 believes had happened and trying to be clear about that.

14 MR. THOMPSON: Well, I'm not asking him
15 what happened. I'm asking him what changes, if any, he
16 would make to the language of Exhibit 13, paragraph 3, and
17 if he has none, he can tell us that.

18 MS. HOUSE: And I guess my point is, I
19 thought he had already laid out his explanation of what he
20 thought the wording should be as opposed to inartful
21 drafting.

22 MR. THOMPSON: Well, I think that he said
23 he was not comfortable with the wording. What I want to
24 know is what changes he would make, and I'm doing this to
25 be as courteous as possible to Mr. Pierie because I do not

1 want this to go into the record until he is he comfortable
2 with it.

3 MS. HOUSE: Agreed. I think to that point
4 this might be an appropriate time to, in general, state
5 Ameren's objection to that usage of the Highway Patrol
6 reports for a couple of reasons. One, these are obviously
7 hearsay statements. They were prepared by the State
8 Highway Patrol members, not Mr. Pierie or any of these
9 other witnesses who provided the statements or were
10 interviewed.

11 Second, they are -- they are not, I don't
12 think, even on their face, intended to be a complete
13 transcript of all of the conversation that happened, and,
14 in fact, as Mr. Pierie has already pointed out, not using
15 the exact language. They don't appear to be a transcript.

16 And especially in light of the pending
17 civil litigation that is out there between Ameren and the
18 State right now, we think the record needs to be clear
19 that we do have objections to these documents for those
20 reasons and want to make sure that the record is clear as
21 to what they are and what they aren't and that -- and to
22 what purpose they're put.

23 So I understand Mr. Thompson's objective of
24 allowing Mr. Pierie to make corrections as he sees fit,
25 but for purposes of preserving Ameren's ability to object

1 to the documents in light of the factors I just stated, I
2 think we want that to be clear on the record.

3 JUDGE DALE: Thank you. I think that is
4 clear on the record, and I will hark back to my opening
5 remarks about what information received in this proceeding
6 can be used for. And with that, I will overrule the
7 specific objection and let you ask the question.

8 MR. THOMPSON: Thank you, your Honor.

9 BY MR. THOMPSON:

10 Q. Mr. Pierie, I don't mean to harass you --

11 A. No. That's fine.

12 Q. -- or press you. I just want to know, do
13 you have any specific changes you would make to that
14 paragraph? And would you like an opportunity to consult
15 with counsel? I don't mean to put you -- I was going to
16 say put you on the spot, but that's actually what today is
17 all about.

18 A. That's fine.

19 MR. BYRNE: Perhaps it might be beneficial
20 to take a break, I don't know, so that he could review
21 the -- if Mr. Thompson's going to ask for specific
22 changes.

23 THE WITNESS: Well, this was the worst one.

24 MR. BYRNE: Of course, the answer may be I
25 don't know.

1 JUDGE DALE: We are right at a break time,
2 so let's break for ten minutes, and then see if he has
3 specific recommendations or not.

4 MR. THOMPSON: Okay. And just so you'll
5 know, as with the previous witnesses, what I propose to
6 do, and this is with Exhibits 13 and the next interview,
7 which will be Exhibit 14, after he's made whatever changes
8 he wants to make, ask him if they are, in fact, true and
9 correct to the best of his knowledge and belief. And I
10 will then offer them into the record, and whatever happens
11 will be whatever happens. But that's just so you have a
12 road map of what it is I intend to do.

13 MR. BYRNE: Thanks.

14 MR. THOMPSON: Thank you.

15 JUDGE DALE: With that, we'll go off the
16 record.

17 (A BREAK WAS TAKEN.)

18 JUDGE DALE: We are back on the record, and
19 Mr. Thompson is inquiring of Mr. Pierie.

20 MR. THOMPSON: Thank you.

21 BY MR. THOMPSON:

22 Q. Mr. Pierie, take a look at Exhibit 13, if
23 you would, which is the Highway Patrol interview from
24 January 9, 2006. And we were talking about paragraph 3,
25 and over the break it occurred to me that perhaps the best

1 way to go through this is just to go through each sentence
2 in paragraph 3 and allow you every opportunity to comment
3 on those sentences as we go through them. Is that
4 acceptable to you?

5 A. That's fine.

6 Q. Okay. The first sentence, could you read
7 the first sentence?

8 A. Mr. Pierie stated he works Monday through
9 Friday between 6:30 to 1500 hours.

10 Q. And for those of us who aren't in the
11 military, would that be about 3 p.m.?

12 A. Correct.

13 Q. Do you have comments or changes to that
14 sentence?

15 A. That is correct. This sentence is fine.

16 Q. How about the next sentence?

17 A. Mr. Pierie stated he went to Taum Sauk and
18 inspected the high and the high-high probes at the upper
19 reservoir. Do you just want me to keep going?

20 Q. Go ahead and read the next one, too.

21 A. He stated that he did not know the date but
22 knew it was before October 7, 2005 because he was looking
23 at an e-mail and there was a note dated October 7th
24 referring to his visit to Taum Sauk when inspecting the
25 probes.

1 Q. Now, taking those two sentences,
2 Mr. Pierie, do you have any changes or comments?
3 A. No. That's fine.
4 Q. Okay. How about the next sentence?
5 A. Mr. Pierie stated, reported the high and
6 the high-high probes were located seven and four inches
7 from the top of the reservoir wall.
8 Q. Any changes or comments?
9 A. No. That's good.
10 Q. That is what you found?
11 A. I did.
12 Q. Next sentence?
13 A. Mr. Pierie stated they should have been 24
14 and 22 inches from the top of the wall.
15 Q. Any changes?
16 A. Well, I mean, when I -- I should say I
17 originally set them at 24 and 22 inches from the top of
18 the wall.
19 Q. Okay. And that's -- okay. Please
20 continue.
21 A. Mr. Pierie stated Bob Scott was with him
22 when inspecting the probes. That's correct.
23 Q. Okay. Next?
24 A. Mr. Pierie stated there had been reports of
25 wave action on top of the reservoir. That would be

1 actually in the reservoir.

2 Q. Okay.

3 A. And again, that was a conversation with

4 Rick Cooper of saying wave action would cause these probes

5 to operate at the 24 and 22-inch levels.

6 Q. So let's take that sentence. Shall we

7 change wave action on top of the reservoir to wave action

8 in the reservoir?

9 A. Okay.

10 Q. Okay.

11 A. The waves would hit the probes when they

12 were set at 24 and 22 inches.

13 Q. Is that correct?

14 A. Correct.

15 Q. Okay.

16 A. The probes were too low because of the wave

17 action. Correct.

18 Q. Okay.

19 A. He stated they must have been raised, but I

20 don't know by who. Mr. Pierie stated that there was blue

21 tape that was still intact to the probe casing, but there

22 was black tape present that was not previously on the

23 sheath of the probes, indicating the probes had been

24 moved.

25 Q. Is that correct?

1 A. That is correct.

2 Q. Okay.

3 A. Mr. Pierie was asked what the protocol was
4 for moving the probes. Mr. Pierie stated there was none.
5 That is correct.

6 He stated he did not test the probes on a
7 particular date. That is correct.

8 He stated there was no alarm for the high
9 probe but there was one for the high-high probe. That is
10 also correct.

11 Q. Okay. So taking that paragraph 3 that
12 we've just gone through with the correction that we made,
13 as far as you know, is that paragraph true and correct?

14 MS. HOUSE: Again, the same objection that
15 I stated before.

16 THE WITNESS: It is.

17 BY MR. THOMPSON:

18 Q. Thank you. Let's go on to the next
19 paragraph, No. 4. Do you have any changes to paragraph
20 No. 4?

21 A. No. That's fine.

22 Q. Okay. And then the last one just says the
23 investigation is continuing?

24 A. Very good.

25 Q. Okay. So Exhibit 13, then, the whole

1 exhibit -- I understand your objection. You would agree
2 it's true and correct to the best of your knowledge and
3 belief?

4 A. Best of my knowledge and belief.

5 MR. THOMPSON: Okay. At this time, I will
6 move the admission of Exhibit No. 13.

7 MS. HOUSE: Subject to my earlier
8 objection, your Honor.

9 JUDGE DALE: Subject to your earlier
10 objection, and also will you please give the court
11 reporter your marked version?

12 MR. THOMPSON: I have a copy for the court
13 reporter, and this is the redacted one. Your personal
14 information has been removed. I have copies for the
15 Commissioners. These are not redacted, so be careful with
16 them.

17 JUDGE DALE: And they're also not
18 corrected?

19 MR. THOMPSON: That's true. Do you want me
20 to correct them?

21 JUDGE DALE: I would prefer that you wait
22 to give us the Bench copies until you can --

23 MR. THOMPSON: Give you corrected redacted
24 ones?

25 JUDGE DALE: Yes, please.

1 MR. THOMPSON: I'll be happy to do that,
2 Judge. As you know, I live to serve.

3 JUDGE DALE: I would not want something
4 that's not true and correct to the best of the witness'
5 knowledge and belief to be floating around.

6 MR. THOMPSON: Absolutely. I'm going to
7 mark this next investigation report or notes or whatever
8 these things actually are. We'll mark this next one as
9 Exhibit No. 14, and I'll hand you a copy.

10 THE WITNESS: Thank you.

11 MR. THOMPSON: That is not redacted. I'll
12 take a minute to redact one here that we can give to the
13 court reporter.

14 (EXHIBIT NO. 14 WAS MARKED FOR
15 IDENTIFICATION BY THE REPORTER.)

16 BY MR. THOMPSON:

17 Q. Now, you recall, do you not, Mr. Pierie,
18 you were interviewed on March 1st, 2007 by the Missouri
19 State Highway Patrol?

20 A. That is correct.

21 Q. And take a look at paragraph No. 1. Do you
22 have any difficulties, comments, changes for that
23 paragraph?

24 A. No. I'm fine with that.

25 Q. Now, paragraph No. 2, I have redacted, not

1 from your copy, but from the one I will give the court
2 reporter, your address and telephone number. And with
3 that change in mind, do you have any changes or comments
4 to paragraph No. 2?

5 A. I do not.

6 Q. How about paragraph No. 3?

7 A. Actually, I -- instead of four years at
8 Ameren, it's five.

9 Q. Okay. Was it four or five at the time of
10 the interview?

11 A. Well, I will assume it was -- I told him
12 five, but I might have told him four.

13 Q. Okay. But it is five?

14 A. It is five.

15 Q. Very well. I'll make that change. And
16 you're not an electrical engineering, but an electrical
17 engineer. Okay. I'll make that change also.

18 Other than those two changes, do you have
19 any other comments or changes to that paragraph No. 3?

20 A. I do not.

21 Q. How about paragraph No. 4?

22 A. That's fine.

23 Q. Now, let's go through paragraph No. 5
24 sentence by sentence. Okay?

25 A. Okay.

1 Q. Read that first sentence, if you would.

2 A. The first e-mail was SHP4125 dated
3 October 7, 2005 and October 10, 2005 from Pierie to Rick
4 Cooper, and it was related to the wind speed transmitter
5 and the overtopping on September 27, 2005. Pierie stated
6 it was his idea to install a wind speed transmitter for
7 the purpose of lowering the water levels in the event of
8 overtopping from high winds again.

9 Actually, I don't know if he's referring to
10 me or Rick, but it was actually Rick's idea to put the
11 speed -- or he mentioned putting a speed transmitter. So
12 he originated it.

13 Q. So it should say, then, Pierie stated it
14 was Cooper's idea?

15 A. Yeah.

16 Q. How's that? Okay. Is that the only change
17 you would make to those two sentences?

18 A. That's correct.

19 Q. All right. How about the next sentence?

20 A. The transmitter was ordered and was waiting
21 for installation at Taum Sauk. It was a third probe for
22 placement in the gage piping. Actually, that would have
23 been the fifth probe in the gage piping.

24 Q. Okay. And when you say the fifth probe,
25 you're not counting the reference probe?

1 A. Right. Exactly.

2 Q. So I'll make that change from third to
3 fifth. Any other changes for that sentence?

4 A. No. That's fine.

5 Q. Okay. Next sentence?

6 A. He further described the pump vac shutoff
7 operation related to the high and the high-high gages and
8 the measuring comparison of the wall height being the same
9 at the gage house and the visitor's platform. That's
10 fine.

11 He noted the high and the high-high probes
12 were tested in February of 2005, and at that time a relay
13 was bad and was replaced. And that's fine.

14 Q. Okay.

15 A. And he was aware of the gage pipe being low
16 and had the materials to repair the problem ordered and on
17 hand in October of 2005 and hoped to have it repaired by
18 the end of the month. Actually, Steve ordered the gage
19 piping material to have it fixed.

20 Q. Okay.

21 A. Bluemner.

22 Q. Okay.

23 A. He stated since the reservoir level had
24 been lowered by two feet after the September 27, 2005
25 overtopping, he was not that concerned about future

1 problems.

2 Q. Okay.

3 A. Actually, that conversation I had with
4 Rick, and Rick had said, hey, we've taken these safety
5 measures to lower the reservoir by two feet, and he was
6 comfortable where they're at.

7 Q. So how about we change that to say, instead
8 of saying he was not that concerned, how about to Cooper
9 was not that concerned?

10 A. That's fine.

11 Q. That would be accurate as far as you
12 remember?

13 A. Correct.

14 Q. Okay. So going on to paragraph No. 6, why
15 don't you read that one sentence by sentence?

16 A. Pierie stated that -- excuse me. Pierie
17 stated during the 2004 liner replacement, Steve Bluemner,
18 another Ameren engineer, gave him the measurement numbers
19 of the wall heights and assumed the low points of the wall
20 were 1596 and 1596.2 before going back online for the
21 liner replacement. I don't remember -- I mean, they
22 weren't the low point of the wall. That's where I had the
23 low and the low-low probe set.

24 Q. Right. Those were the heights that you
25 originally set the upper Warrick probes at, correct?

1 A. Correct.

2 Q. And those are not the low points on the
3 parapet wall?

4 A. Correct.

5 Q. So how can we redact this sentence, then?
6 Do you remember what the height was of the low point that
7 Mr. Bluemner gave to you?

8 A. Not at -- no.

9 Q. Not at this time?

10 A. No.

11 Q. How about if we just take out everything
12 after the first word height, so that it would just read,
13 Pierie stated during the 2004 liner replacement, Steve
14 Bluemner, another Ameren engineer, gave him the
15 measurement numbers of the wall heights, period?

16 A. Very good.

17 Q. That's correct, right?

18 A. Yeah.

19 Q. Okay. How about the next sentence?

20 A. Okay. He stated there was a high probe
21 trip in the summer of 2004 and the project consultant,
22 Tony Zamberlan's firm, was called and corrective action
23 was taken, and the level was moved from the high at 1596
24 or was moved -- well, moved for the high at 1596.7 and
25 high-high of 1596.9.

1 Q. Okay.

2 A. That's fine.

3 Q. That's okay. Next?

4 A. He assumes Zamberlan and Rick Cooper did
5 the move and took their elevations at the top of the wall
6 at the gage house. Zamberlan advised him the trip of the
7 probes was caused by finally getting another water in the
8 lower reservoir to pump back the levels higher in the
9 upper reservoir. Hence the reason for moving the probe
10 levels. Yeah. That's fine.

11 Q. Okay.

12 A. He noted he did not know if the probes were
13 ever moved after that time. He stated he was only
14 involved with being consulted on the change of the Warrick
15 related to the low and low-low probes and that changed
16 to -- and that change to series made sense. That's fine.

17 Q. Okay.

18 A. He noted he was never consulted on the
19 change of the high and the high-high probes to series,
20 which did not make sense and he would not have advised it.
21 I agree with that.

22 Q. Okay.

23 A. He believed that change would have been
24 done at the plant and should have involved Zamberlan and
25 Cooper. He stated it was not unusual not to be in the

1 loop on a change of that nature. That's correct.

2 He was involved in testing the probes on
3 December 14th, 2005, by simply getting them wet to see if
4 they would trip, which they did. Then December 15th,
5 2005, he was involved in further testing of the probes
6 where they simulated a unit trip. Correct.

7 He found at the time they were wired in
8 series with a time delay. He again noted there would be
9 no benefit to wire the high and the high-high probes in
10 series as opposed to the benefit of wiring the low and the
11 low-low probes in series. That is correct.

12 Q. Okay. How about paragraph 7, could you
13 read that?

14 A. He viewed e-mail No. SHP4183 to Chris
15 Hawkins to him dated December 9th, 2005 related to the
16 software switch changes. He noted these changes would
17 have no effect on the breach.

18 Q. Okay. Any changes to that?

19 A. No.

20 Q. Next one, please?

21 A. He viewed e-mail No. SHP53559-5362 from
22 Steve Bluemner dated October 7, 2005 related to gage
23 piping photos. He stated this was related to design of
24 the new gage pipe housing, and he was copied for this
25 information.

1 Q. Any changes?

2 A. No. That's good.

3 Q. Okay. No. 9?

4 A. He viewed e-mail No. SHP6749 dated
5 December 12th, 2005 regarding teleconference on the
6 Taum Sauk upgrade in the spring of 2006. He noted it was
7 not pertinent to the breach.

8 Q. Okay. Next one?

9 A. He viewed e-mail No. SHP6755 dated
10 December 14th, 2005, relate to the breach. He did not
11 recall receiving but thought he was one of the recipients
12 because he was at Taum Sauk immediately after the breach.

13 Q. Any changes?

14 A. No.

15 Q. No. 11?

16 A. He viewed e-mail SHP7263 and 7264 dated
17 September 27, 2005, related to overtopping from the winds.
18 He was concerned about the wind and water level being up
19 and thought sonic or sonar transmitter might be the
20 answer. He noted he only saw a trench in the road near
21 the breach site after the overtopping. He also noted the
22 .4 fudge factor that was attributed to Jeff Scott would
23 not have been advisable, and he did not know how the
24 figure was calculated.

25 Q. Any changes?

1 A. Yeah. I don't remember saying would not
2 have been advisable. Greg was -- or Jeff was just trying
3 to get the transmitter to read correctly.

4 Q. So should we take out that phrase, would
5 not have been advisable?

6 A. Yeah. I would say that would be
7 sufficient.

8 Q. All right.

9 A. He viewed e-mail SHP8821 dated
10 September 28, 2005, from asking if the high and the
11 high-high probes picking up the overtopping. He called
12 Jeff Scott and was told Jeff did not think the water got
13 high enough. He noted the change in wire would not have
14 necessarily made a difference.

15 Q. Any change to that one?

16 A. No. That's fine.

17 Q. Okay. Well, with the changes in mind that
18 we've made and the redaction of your personal information,
19 do you believe that this interview is substantially true
20 and correct to the best of your knowledge and belief?

21 MS. HOUSE: Same objection.

22 THE WITNESS: Yeah. I mean, there was a
23 lot of conversation, and this kind of covers some of it.
24 To try to recollect everything that was said would be very
25 difficult for me, but I would say it's, of what we

1 discussed, fairly accurate.

2 BY MR. THOMPSON:

3 Q. So this reflects part of what was
4 discussed, but what is here is true and accurate?

5 A. Correct.

6 Q. Okay. Thank you.

7 MR. THOMPSON: I'll move the admission of
8 Exhibit No. 14 now, Judge.

9 MS. HOUSE: Same objection, your Honor.

10 JUDGE DALE: Noting the objections of a
11 continuing nature for this and other like documents --

12 MS. HOUSE: Thank you, your Honor.

13 JUDGE DALE: -- Exhibits 13 and 14 will be
14 admitted into evidence.

15 (EXHIBIT NOS. 13 AND 14 WERE RECEIVED INTO
16 EVIDENCE.)

17 MR. THOMPSON: And I'll provide redacted
18 and corrected copies to the Commission and also to the
19 court reporter at a later time if that's acceptable.

20 JUDGE DALE: Excellent. Thank you.

21 MR. THOMPSON: And I can provide them to
22 everyone else, too.

23 BY MR. THOMPSON:

24 Q. I want to go back, if I could, to
25 Exhibit 13, and I'm looking at that paragraph No. 3.

1 MR. THOMPSON: I wonder if I might approach
2 and get the corrected copy?

3 JUDGE DALE: Certainly.

4 MR. THOMPSON: Thank you.

5 BY MR. THOMPSON:

6 Q. Now, at the beginning of paragraph No. 3,
7 it says you went to Taum Sauk and inspected the upper
8 Warrick probes, and you know it was before October 7
9 because you found a note of that date discussing that
10 trip; is that correct?

11 A. Correct.

12 Q. And is that the occasion when you found
13 them to be located seven and four inches from the top?

14 A. Correct.

15 Q. So sometime in early October, sometime
16 before October 7th, they had already been moved from where
17 you located them?

18 A. Correct.

19 Q. And you located them, I think we know from
20 the other e-mail or the other interview, excuse me,
21 originally at 24 and 22 inches from the top of the wall?

22 A. Roughly, correct.

23 Q. And that would have been 1596.0 and 1596.2;
24 is that correct?

25 A. Correct.

1 Q. So if I'm correct -- and math is not a
2 strength for me, but you're an engineer, so you're good
3 with numbers, right? The probes were moved 17 or 18
4 inches --

5 A. Very good.

6 Q. -- is that correct?

7 A. Correct.

8 Q. 24 inches is 17 inches more than 7 inches,
9 and 22 inches is 18 inches more than 4 inches, correct?

10 A. Correct.

11 Q. Okay. Is that, to your mind, a fairly
12 significant move?

13 A. It is.

14 Q. It's about a foot and a half?

15 A. (Witness nodded.)

16 Q. Okay. And I think you indicated this was
17 not a move that you were aware of until you found it
18 onsite?

19 A. No. I knew -- I knew the probes had gotten
20 moved from where I originally set them, but I didn't know,
21 other than the document saying they were, when they'd
22 gotten moved, they'd gotten moved to 1596.7 and 1596.9.
23 So I knew they had been moved. Had I physically seen them
24 up until this point? No, I had not.

25 Q. Okay. So you knew they had been moved?

1 A. Correct.

2 Q. And the documentation you had told you that

3 they had each been raised by .7, 7/10 of a foot? Isn't

4 that what that means?

5 A. Right.

6 Q. If I subtract 1596.2 from 1596.9, I get .7?

7 A. Very good.

8 Q. And I get the same thing if I subtract

9 1596.0 from 1596.7?

10 A. Right.

11 Q. How many inches is 7/10 of a foot?

12 A. 7/10 of a foot is, what, eight inches.

13 Q. About eight inches. In fact, based on what

14 you're saying in Exhibit No. 13, they were actually moved

15 18 inches; is that correct?

16 A. Correct.

17 Q. So would you infer from that that the

18 documentation you saw was, in fact, erroneous?

19 A. Correct.

20 Q. In fact, the low probe was moved from

21 1596.0 to about 1597.5; isn't that correct?

22 A. Correct.

23 Q. And the high probe from 1596.2 to about

24 1597.7?

25 A. Correct.

1 Q. Okay. Now, if you remember, are those
2 figures higher than the top of the parapet wall?

3 A. At the time I was doing this looking, I
4 mean, obviously after the elevation I realized that, you
5 know, these --

6 Q. After the incident?

7 A. After the incident. But at the time that I
8 was measuring these, no, I did not understand that.

9 Q. Okay.

10 A. My focus when I went out to the -- to
11 measure these probes for -- I thought Rick was at the
12 visitor's platform and that he was giving us a reference
13 line of where that water was at the visitor's platform at
14 the time of the high water incident, and he was giving a
15 number of four inches below the top of the wall.

16 That's why I measured the probes at the
17 gage house at 4 and 7 inches, and Bob Scott was
18 accompanying me, and I went to the visitor's platform and
19 verified the water level was basically the same distance
20 from the top of the wall at the gage house and at the
21 visitor's platform.

22 Okay. So if the visitor's platform -- if
23 it's four inches at the visitor's platform, it would have
24 been four inches at the gage house. If that was truly the
25 fact, then that high level probe and the low level probe

1 -- excuse me -- the high and the high level probes should
2 have been covered with water. That's where my focus was.

3 Q. And were they? Were they covered with
4 water?

5 A. I was at the -- he wasn't at that location.
6 He was at the low point of the wall when he was actually
7 out there measuring it.

8 Q. Now, the day that Mr. Cooper observed the
9 water four inches from the top of the wall, and we're not
10 sure what point on the wall he was talking about --

11 A. Right.

12 Q. -- but on the day he observed that, wasn't
13 that, in fact, on September 27th, the date of the wind
14 action?

15 A. I think it was a couple days after.

16 Q. Couple days after?

17 A. Uh-huh.

18 Q. Okay. And were you -- and you were there,
19 were you not?

20 A. Not at the -- not at that time, I was not.

21 Q. How soon after that were you there?

22 A. Again, I don't remember. It was like a
23 week or so after, because my e-mail is dated on the 7th of
24 reporting what I found October 7. So sometime from -- or
25 from September 27 to October 7th is when I was out there.

1 I would lean more toward it being closer to October 7th.

2 Q. Okay. So sometime in early October?

3 A. Correct.

4 Q. And you were out there because of what

5 Mr. Cooper had observed?

6 A. That is correct.

7 Q. Okay. Now, on that day that Mr. Cooper

8 observed the water four inches from the top of the parapet

9 somewhere --

10 A. Correct.

11 Q. -- do you know, did the high or the

12 high-high probe trigger?

13 A. I didn't -- I'm not at the plant, so I

14 wouldn't know.

15 Q. You don't know?

16 A. I don't know. I sent out an e-mail asking

17 the question.

18 Q. Okay.

19 A. And didn't get a response back. So I

20 called up Jeff and I said, Jeff, was the water at four

21 inches and did the Warricks operate? He said, no, the

22 water -- he didn't think the level got that high, because

23 he was with Rick when he went out there to look at the

24 level.

25 Q. Okay. So their belief was that the high

1 probe, which is the lower of the two upper Warrick probes,
2 right, that the high probe was a little bit higher than
3 that four inches from the top of the parapet that the
4 water reached?

5 A. No. It would have had to have been less
6 than seven. If it was anything more than seven inches,
7 right, higher than seven inches from the top of the wall,
8 the Warrick probe should have operated.

9 Q. But, in fact, your understanding is it did
10 not?

11 A. Again, he said that the water didn't get
12 that high, Jeff. So I don't know if it operated or not.

13 Q. So what he told you, in fact, contradicted
14 what Mr. Cooper observed; isn't that correct?

15 A. Correct.

16 Q. If the water had been as high as Mr. Cooper
17 observed, the Warrick probe, at least the lower Warrick
18 probe, the high probe would have triggered?

19 A. If it was -- actually, no, because he was
20 at the low point of the wall, right? So the low point of
21 the wall, it was at four inches and we're at seven and
22 four, then they wouldn't have gotten wet.

23 Q. Okay. But you didn't understand where he
24 was?

25 A. No. Well, I thought he was at the

1 visitor's platform, and that's why I went over to the
2 visitor's platform and measured the elevation of the
3 water.

4 Q. Okay. So that was really a
5 miscommunication between you and Mr. Cooper, correct?

6 A. Correct.

7 Q. Okay. Now, and you heard the reports of
8 the wave action?

9 A. I -- when we were coming back out of the
10 outage, I had, again, the probes set at 1596 and 1596.2,
11 and they had a high-level trip. I was at my desk. I got
12 a phone call from Tony Zamberlan saying we had a
13 high-level trip. We had the probes set too low. And
14 then --

15 Q. If I could stop you a minute, do you
16 remember what day this was?

17 A. I do not. Sometime coming out of the
18 outage. But, I mean, reading the e-mails, it had to be
19 around December 1, December 2.

20 Q. Now, we're agreed, are we not, there was
21 some sort of overtopping on September 27?

22 A. Well, wind blown.

23 Q. Right.

24 A. Right.

25 Q. But there was unusually high winds; is that

1 correct?

2 A. Correct.

3 Q. And your understanding is it caused wave
4 action?

5 A. It caused wave action.

6 Q. And some water did come over the parapet
7 wall?

8 A. Correct.

9 Q. Were you present or not?

10 A. I was not.

11 Q. You were not. Were you informed of that?

12 A. I was, in the e-mail.

13 Q. Okay. Do you know what date that was?

14 A. The e-mail is dated, I believe, the 27th.

15 Q. So --

16 A. 29th.

17 Q. So that very day or close to that day?

18 A. I don't know exactly. It's in an e-mail.

19 Q. Okay. Well, we'll go through those
20 e-mails.

21 A. Okay.

22 Q. I'm wondering about your comment that you
23 were asked what the protocol was for moving the probes and
24 you stated there was not one. What does that mean?

25 A. I mean there's no formal document that

1 says, okay, here are the probes, and if you move these
2 probes, you know, you need to sign off on them. There was
3 no sort of formal document that would have documented the
4 location of the probes.

5 Q. Okay. So would I be correct in
6 understanding that setting the probes was part of the
7 control system replacement project?

8 A. Yes. Correct.

9 Q. And, in fact, you've told us you set the
10 probes yourself?

11 A. I did.

12 Q. Okay. And when the project was completed,
13 would I be correct in understanding that after that, the
14 probes would not be moved?

15 A. They shouldn't have been moved in my --
16 well, I mean, best of my ability, I set them where I
17 thought they were right.

18 Q. Right.

19 A. Where they should have been. But coming
20 out of the outage, then I find out that I had them set too
21 low.

22 Q. Okay. Because of the waves?

23 A. Because of the waves.

24 Q. Okay.

25 A. And that was going to be their normal

1 stopping point is what they were selecting. That would be
2 their normal shutdown, so you wouldn't have your high-high
3 level protection at your normal shutdown.

4 Q. Okay. Let me make sure I understand you.

5 A. Okay.

6 Q. You originally set the high probe at
7 1596.0?

8 A. Correct.

9 Q. You set the high-high probe at 1596.2?

10 A. Correct.

11 Q. You later learned that 1596.0 was going to
12 be the normal operating level?

13 A. Very good.

14 Q. Right?

15 A. Correct.

16 Q. And so the high probe needed to be higher
17 than that?

18 A. Correct.

19 Q. How much higher than that?

20 A. I don't operate the plant. I don't set --
21 I don't set levels. That would have been a plant decision
22 or an operation decision on where that should have been
23 set.

24 Q. So in other words, it would be plant
25 decision as to where to move them to?

1 A. Correct.

2 Q. Okay. So that was really outside of your
3 project, then?

4 A. Correct.

5 Q. Okay. Your project, to the best of your
6 knowledge, was correct and accurate if the operating level
7 was going to be 1595?

8 A. Correct.

9 Q. Okay. And you have already told us you
10 don't know who would have authorized raising the operating
11 level?

12 A. That is correct.

13 Q. And you didn't move those probes?

14 A. I did not move those probes.

15 Q. Okay. Very good. But you came back at one
16 time and found them to have been moved?

17 A. Correct.

18 Q. Okay. And we've already established that
19 they were moved 18 inches, although the documentation
20 indicated 8 inches?

21 A. Correct.

22 Q. But you don't know who moved them?

23 A. I do not.

24 Q. And you don't know who produced the
25 documentation, do you?

1 A. The original documentation or --

2 Q. The documentation that indicated they had
3 been moved only eight inches?

4 A. I do believe Tony Zamberlan. I -- when I
5 was finished with my construction drawings, basically red
6 line drawings, we were very anxious to get them back to
7 the plant, and Tony Zamberlan, we were going to use their
8 drafters to get these drawings red lined, corrected and
9 then back to the plant.

10 And the level control drawing was important
11 to get back to FERC so they had it for documentation. So
12 that was a drawing that was very critical to get back to
13 FERC. So I remember having that document with my red
14 lines on it in Tony's office, and Tony taking that drawing
15 from me and changing numbers on that drawing.

16 I don't know what the numbers were. I do
17 not know what he changed them to. I did not review the
18 drawing after he was done with it. But I'm assuming, you
19 know, that that's when those numbers got changed from my
20 red lines. My original red lines said 1596 and 1596.2.

21 Q. Okay. Now, when you say a red line, what
22 does that mean?

23 A. It's basically hand-drawn markups of the
24 drafted drawing.

25 Q. So in other words, you go out there with a

1 drawing that's been produced by a draftsman?

2 A. Correct.

3 Q. And as you make changes, you record them

4 with notations on that drawing?

5 A. And usually in red. So that's why they

6 call it red lined.

7 Q. And you would give that back to the

8 draftsman to produce a new drawing --

9 A. Correct.

10 Q. -- that would show the corrections?

11 A. Very good.

12 Q. Is it common engineering practice to have a

13 set of drawings onsite at the dam that reflect its

14 condition?

15 A. Yes.

16 Q. Every aspect of it should be documented by

17 an engineering drawing?

18 A. Correct.

19 Q. And, in fact, in doing your project, did

20 you consult older drawings?

21 A. We did.

22 Q. Drawings that showed its condition based on

23 the last changes?

24 A. Correct.

25 Q. Okay. And so at some point I think you

1 indicated the drawing showing the levels of the Warrick
2 probes was sent to FERC?

3 A. Correct.

4 Q. Now, are we correct in understanding that
5 it was that drawing that incorrectly showed those levels
6 as being 8 inches lower than, in fact, they were?

7 A. Correct.

8 Q. Okay. And you suppose, but do not know,
9 that those mistaken levels were added to the drawing by
10 Mr. Zamberlan?

11 A. Correct.

12 Q. You know that your red line notations
13 showed the heights that you originally set the probes at?

14 A. Correct.

15 Q. Okay. So would I be correct in
16 understanding that because of this, that FERC actually had
17 no idea of the actual level the probes were set at?

18 A. They had a document that was showing
19 1596 -- or 1596.7 and 1596.9. That's what they had.

20 Q. That's what they had. And we're agreed
21 that that was incorrect?

22 A. Correct.

23 Q. Okay. I'm now looking at Exhibit No. 14,
24 which is the other interview. Let's talk about paragraph
25 No. 5 and the wind speed transmitter.

1 A. Okay.

2 Q. Now, that is the overtopping caused by wave
3 action?

4 A. Correct.

5 Q. And it's been associated with Hurricane
6 Rita?

7 A. Correct.

8 Q. As far as you know, is that accurate?

9 A. Yes.

10 Q. And that was an unusual event; is that
11 true?

12 A. Yes.

13 Q. Did you happen to observe any kind of
14 trench or other damage at the foot of the parapet wall?

15 A. I did.

16 Q. And that had been caused --

17 A. It wasn't at the foot. It was actually at
18 the roadway going up to the top of the reservoir.

19 Q. Okay. It was on the roadway?

20 A. That's what I noticed.

21 Q. And that had been caused by water that was
22 blown over the edge?

23 A. That's my understanding.

24 Q. About how -- if you remember, and you can
25 give me a ballpark figure, about how far was it from that

1 spot where you saw damage to the top of the parapet wall?

2 A. Damage on the top of the parapet wall?

3 Q. No. How far was it from the spot where you
4 saw the damage on the roadway to the top of the parapet
5 wall?

6 A. I couldn't -- I don't recall.

7 Q. Okay. Would it be in the neighborhood of
8 50 feet, ballpark?

9 A. I would say less than that.

10 Q. Less than that?

11 A. Yeah.

12 Q. Okay. But nonetheless, the water had
13 fallen with sufficient force to actually damage the
14 roadway?

15 A. Well, it was a rut, like, you know, a hard
16 rain would give you the same thing, I would think.

17 Q. Was this a dirt-made roadway?

18 A. No. It was gravel.

19 Q. Gravel. Okay. Now, you told us it was
20 Mr. Cooper's idea to install a wind speed transmitter?

21 A. It was his suggestion, correct.

22 Q. And this was to serve as an additional
23 emergency backup?

24 A. Well, it was -- so if there was high winds,
25 that we could take action or at least alarm, to allow the

1 operators to know that and figure out where the level was
2 so they could take action to lower the reservoir level.

3 Q. Okay. Was that, to your knowledge, ever
4 installed?

5 A. It was not.

6 Q. Now, it was Mr. Cooper's idea, but who
7 designed the wind speed system, if that's the right word?

8 A. I had ordered the transmitter, but it never
9 got installed.

10 Q. So it was just an off-the-shelf-type item?

11 A. Actually, it wasn't. Took a couple weeks
12 for delivery, and then what they shipped, it was wrong, so
13 we had to send it back. It had arrived onsite. I
14 couldn't give you the dates when, but I do believe it was
15 onsite.

16 Q. And when you -- it was your plan to wire it
17 into the PLCs?

18 A. Correct.

19 Q. And then it would be one of the -- one of
20 the metrics that the operators could view?

21 A. Correct.

22 Q. Okay. And perhaps you would put an alarm
23 on it?

24 A. An alarm or an automation to actually let
25 the control system pump down the reservoir level if -- I

1 mean, really hadn't talked about it in any depth.

2 Q. Were you going to design whatever kind of
3 logic change was required?

4 A. No. That would have been Chris Hawkins.

5 Q. That would have been Hawkins?

6 A. Yes.

7 Q. So Hawkins was also a control designer?

8 A. Correct.

9 Q. Okay. Now, what about this third or fifth
10 probe that was going to be placed in the gage piping?

11 A. Yeah. Basically, we were going to put a
12 probe right below the stop point, so right below 1596, so
13 every time before a stop, this Warrick would pick up to
14 give indication that, you know, that -- so if this event
15 ever happened again where these gage pipes or the --
16 excuse me -- more for the transmitters, if they started
17 drifting, that it would be a good indication.

18 Q. Let's talk about transmitter drift. When
19 did you first become aware that there was a problem with
20 transmitter drift?

21 A. On Rick's e-mail.

22 Q. Do you recall the date?

23 A. Well, it was the 27th. I think he
24 documented that. 27th or 29th when he's talking about the
25 high wind incident.

1 Q. So in other words, on the -- in conjunction
2 with the high wind incident, it was observed that the
3 instrumentation piping was bowing?

4 A. Well, I think this is actually he de-- or I
5 don't think he did observe it that time. But as far as
6 the instrument was concerned, I do believe that was the
7 instrument itself was drifting. It didn't have anything
8 to do with the bow in the pipe.

9 Q. Okay. So you mean it was moving inside the
10 pipe?

11 A. No. I think the instrument itself was
12 getting out of calibration.

13 Q. Okay.

14 A. That's my understanding.

15 Q. So it wasn't necessarily moving, but
16 nonetheless, it was not providing an accurate reading?

17 A. Correct.

18 Q. Now, it's correct, isn't it, that the
19 system was set up to take the average of the readings of
20 the three piezometers?

21 A. That is correct.

22 Q. So were all three of them uncalibrated?

23 A. No. I think they just found the one that
24 was drifting from the other two.

25 Q. So when you say drifting, you're not

1 talking about physical movement?

2 A. I'm sorry. Yes. The measurement was
3 changing. All three of them weren't measuring the same
4 level.

5 Q. In fact, it was found to be about a foot
6 off, wasn't it?

7 A. I do believe that's correct.

8 Q. And so eventually it was taken out of the
9 loop; is that right?

10 A. That I don't remember.

11 Q. You don't remember?

12 A. I thought he put a -- again, put a number
13 in to recalibrate it to read the same as the other three,
14 but I'm not sure.

15 Q. You're not sure?

16 A. I can't say 100 percent.

17 Q. When you say he, who do you mean?

18 A. Jeff Scott.

19 Q. So whatever change was made with respect to
20 that reading drift was made by Mr. Scott?

21 A. Correct.

22 Q. As far as you know?

23 A. As far as I know.

24 Q. And you were no longer onsite at that time?

25 A. I was not.

1 Q. Okay. But there was a plan to put in a
2 third -- or excuse me -- a fifth Warrick probe to provide
3 an additional measure of when the water reached the
4 operating level?

5 A. Correct.

6 Q. Okay. Was that ever installed?

7 A. It was not.

8 Q. Was it, so far as you know, ordered?

9 A. It was ordered. It was onsite.

10 Q. And whose idea was that?

11 A. That was mine and Chris Hawkins'.

12 Q. So even though you were no longer onsite,
13 you were still being consulted --

14 A. Correct.

15 Q. -- in this continuing effort to get the
16 instrumentation correct?

17 A. Correct.

18 Q. Okay.

19 A. I'd like to add to that. As I had said
20 earlier, in October of '05, I was being transferred to
21 another department, so I was still kind of supporting, but
22 handing off my duties to a consultant to, at Taum Sauk, to
23 finish the Phase 2 part of the controls because, I had
24 said earlier also, we didn't finish all the whole project.

25 Q. Who was that consultant?

1 A. That was Mike Whery of Sega.

2 Q. What was the last name?

3 A. Whery.

4 Q. Do you know how to spell that?

5 A. W-h-e-r-y, I do believe.

6 Q. Do you know if he ever actually got any of

7 that work done?

8 A. No, he did not.

9 Q. And in your new position that you were

10 being transferred to, what sort of work do you do?

11 A. Basically it's come down more -- it's on

12 the environmental projects that Ameren is implementing,

13 because there's such large scale projects that we've kind

14 of taken on an oversight role, oversight for our

15 consultants.

16 Q. Is that a different line of work for you?

17 A. Yeah. There's a lot more meetings

18 involved, reviewing of drawings. You know, I don't do any

19 engineering.

20 Q. Do you consider that a promotion?

21 A. No, it's not a promotion.

22 Q. Was it a lateral transfer?

23 A. It's a lateral transfer.

24 Q. Do you like this work better?

25 A. It's challenging. It's different.

1 Q. Is it within or is it outside of the
2 purview of electrical engineering?

3 A. It's inside.

4 Q. Okay. Does it involve control systems?

5 A. Yes. It involves all aspects of
6 engineering, electrical engineering, controls, power.

7 Q. Was this transfer one that you sought or
8 were you told that you were going to be transferred?

9 A. I was told.

10 Q. Did you consider it a good thing or a bad
11 thing?

12 A. It's turned out to be a good thing.

13 Q. Were you happy about it at the time?

14 A. No.

15 Q. Okay. Was your feeling, why are they
16 picking on me?

17 A. No. They just needed a senior guy to go
18 over there and help them out, and I wanted to stay in
19 generation engineering, and they said, well, we really
20 need you to come over and help us out in the environmental
21 side, and I agreed to it. Again, it's been a nice
22 experience.

23 Q. Okay. It wasn't any kind of disciplinary
24 action?

25 A. No. No.

1 Q. Okay.

2 A. No. It already -- this was before the
3 breach, if that's what you --

4 Q. Was there any disciplinary action taken
5 because of the breach?

6 A. I lost my performance bonus, and I'd say my
7 raise was not all that great.

8 Q. Okay. Did you consider that unfair?

9 A. Not at all.

10 Q. Now, I'm looking here at Exhibit 14,
11 paragraph 5. It talks about testing of the Warrick probes
12 in February of 2005.

13 A. Uh-huh.

14 Q. Were you involved in that?

15 A. I'm sorry. February of 2005?

16 Q. Well, that's what it says, and certainly
17 there was no need to test them in February of 2006, right?

18 A. Very good. I'm sorry. Yes. We replaced a
19 low-level relay, and so by doing -- replacing the relay,
20 you had to break the -- basically, all the Warricks
21 themselves are common by a single reference probe. So by
22 breaking that string, we had to retest the high and the
23 high probes. So that's why we tested them.

24 Q. So this relay was part of the wiring of
25 those Warrick probes?

1 A. Correct.

2 Q. Okay. Now, there's an e-mail from

3 Mr. Zamberlan, I wonder if you're familiar with it, where

4 he states that they went up to the upper reservoir in

5 order to pull up the probes, and they heard a loud noise

6 coming from the box. Are you familiar with that?

7 A. Yes.

8 Q. Would that have been that relay?

9 A. That I could not say.

10 Q. But it could have been?

11 A. Could have been.

12 Q. It could have been a relay of some sort?

13 A. Correct.

14 Q. They make noise like that?

15 A. They do.

16 Q. And when they do, is that a bad thing?

17 A. Not necessarily.

18 Q. Okay.

19 A. Mechanical relays will buzz.

20 Q. Even when they're normally operating, they

21 can make noise?

22 A. Correct.

23 Q. Now, that e-mail I'm referring to, is that

24 the one that led you to believe that Mr. Zamberlan was

25 involved in lifting the probes up?

1 A. Correct.

2 Q. And you understood that to be referring to
3 the upper Warrick probes?

4 A. Correct.

5 Q. Now, it also says here he was aware of the
6 gage piping bow. Tell me about the gage piping bow. When
7 did you become aware of that?

8 A. When I went to measure the probes sometime
9 that first week in October.

10 Q. Okay. And did that bow cause you any
11 alarm?

12 A. It needed to be fixed, I mean, because it
13 was affecting our reference probe for the transducers, of
14 course.

15 Q. Now, when you say the reference probe --

16 A. I'm sorry. The transducers.

17 Q. By that you mean the three piezometers?

18 A. Yes.

19 Q. Or level measurers?

20 A. Correct.

21 Q. Whatever they're called. So would that
22 have caused them to be providing an erroneous reading?

23 A. Yes, it would.

24 Q. In fact, am I correct in understanding that
25 the way those sensors work was they had to be at a preset

1 level because they would measure the amount of water above
2 them?

3 A. Correct.

4 Q. So if they were not at the correct level,
5 you would have no idea where the water -- top of the water
6 was?

7 A. Correct.

8 Q. Okay. So what action, if any, was taken
9 with respect to that bow when it was discovered?

10 A. Well, once the bow was discovered, they
11 lowered the reservoir two feet. There was a plan to fix
12 the -- or fix the pipe.

13 Q. When they lowered the reservoir two feet,
14 first of all, who did that?

15 A. I'm assuming -- I wasn't in the
16 conversation, but I'm assuming it was Rick Cooper.

17 Q. So how do you know that was done?

18 A. Because in an e-mail, and then a
19 conversation I had with Rick discussing my e-mail to him
20 and said, hey, what are we going to do here? And he said,
21 we've lowered the reservoir two feet to take action, and
22 we're going to get some divers in and going to fix the
23 pipe.

24 Q. Now, did you understand that to mean that
25 they had physically lowered the level of the water by two

1 feet?

2 A. They had lowered the operating level by two
3 feet.

4 Q. And, in fact, did they do that?

5 A. I don't know. I was not there to witness
6 that, whether they did it, but --

7 Q. Is it possible that they programmed a
8 two-foot change into the logic of the PLC?

9 A. Yeah. That would make sense. I'm sure
10 that's what they did.

11 Q. And would that have the effect of lowering
12 the physical top of the water by two feet?

13 A. Yes.

14 Q. But if the effect of the bowing was to move
15 the transducers from the preset point, was there any way
16 to know whether two feet was an adequate change?

17 A. I can't answer that.

18 Q. Okay. Let's say that when you learned of
19 the bowing -- and this is a hypothetical. I'm going to
20 ask you to speculate. I'm telling you that up front so
21 that anybody who wants to object can jump in.

22 Speculate with me, if you would. Suppose
23 that when you learned of the bowing, you could take any
24 action that you thought was appropriate. What action
25 would you have taken?

1 A. The action that they took, taking the --
2 lowering the level of the reservoir.

3 Q. Okay. Why wouldn't you have said, we
4 cannot operate this device until this is fixed?

5 A. It's not my responsibility, so I -- I'm not
6 an operator. I don't operate the plant.

7 Q. Okay. So as far as you know, and as far as
8 you understand today, the action that was taken at the dam
9 with respect to the bowing was appropriate and adequate?

10 A. I agree.

11 Q. Okay. Now, is it possible that the bowing
12 became more pronounced over time?

13 A. I can't answer that.

14 Q. Is it possible? I'm not asking you if you
15 know if it did. I'm just asking if it's possible.

16 A. Is it possible that it had gotten worse --

17 Q. Yes.

18 A. -- over time?

19 Q. Yes.

20 A. Yeah, I guess it's possible.

21 Q. Let's talk about how that piping was
22 secured. I think you've told us that Mr. Bluemner was in
23 charge of installing the piping?

24 A. He was.

25 Q. Does that include responsibility for

1 anchoring the piping?

2 A. Yes.

3 Q. Okay. So his job was to put the piping in,
4 and your job then was to put the controls into the piping?

5 A. Correct.

6 Q. Okay. Now, the bowing of the piping, so
7 far as you know, was that something that was supposed to
8 happen?

9 A. I don't believe so.

10 Q. Okay. So that indicated, would you agree,
11 a failure of the design of the piping and the secured --
12 whatever secured the piping?

13 A. A failure in design because it came loose?

14 Q. Right.

15 A. Could have been in the installation.

16 Q. Could have been a failure in the
17 installation rather than the design?

18 A. Correct.

19 Q. Maybe it was a good design, but they
20 executed it badly?

21 A. Correct.

22 Q. But it was certainly a failure of some
23 kind?

24 A. Correct.

25 Q. Okay. And it needed to be fixed, I think

1 you told us?

2 A. Correct.

3 Q. Now, this failure, you will agree with me,

4 won't you, it could have been a progressive failure,

5 right? You don't know, do you?

6 A. I'm not a mechanical engineer.

7 Q. Right. You don't know?

8 A. I don't know.

9 Q. But it could have been. Or as an

10 electrical engineering, maybe you can't even go that far,

11 right? That may be so far outside of your province you

12 can't even respond; is that correct?

13 A. I don't know what went into the design and

14 what the failure points were. So for me to tell you that

15 I -- did I think it was going to get worse? No, I can't

16 tell you that.

17 Q. You don't know?

18 A. I don't know.

19 Q. Okay. Are you aware that one of the FERC

20 reports calculates that the displacement of the

21 transducers was over four feet?

22 A. I did not know that.

23 Q. Are you surprised to hear that figure?

24 A. I am surprised to hear that figure.

25 Q. If true, is that kind of displacement of

1 the level controls the sort of thing that is likely to
2 lead to a catastrophic failure of the dam?

3 A. Because the gage piping was coming loose?

4 Q. Yes. In other words, if the level
5 indicators are off by four feet or more, is that a
6 dangerous thing for that dam?

7 A. Well, you had the Warrick probes that
8 should have taken you out.

9 Q. Right.

10 A. So there was a backup to that.

11 Q. Okay. And what was the day that you
12 discovered they had been moved 18 inches, the Warrick
13 probes?

14 A. Again, that first week in October of '05.

15 Q. Okay. So before the breach?

16 A. Before the breach.

17 Q. And at the time, I think you said you did
18 not understand that they'd been moved too high?

19 A. I did not.

20 Q. Okay. Were you aware that on at least one
21 occasion the dam was operated without the Warrick probes
22 at all?

23 A. I remember that in an e-mail, but they had
24 plant personnel up around -- up there around the clock
25 24/7 watching it.

1 Q. So with that, as far as you know, was that
2 okay, as far as you know?

3 A. To have people up at the upper reservoir
4 watching the dam? I would think that would be a prudent
5 action.

6 Q. You think that would be okay. And you're
7 not a dam guy?

8 A. I'm not a dam guy, but if you have somebody
9 watching it, watching the water level and they're in
10 contact with the operators --

11 Q. So you have no reason to think that that
12 was a bad idea?

13 A. No.

14 Q. Okay.

15 A. I do not.

16 Q. We're getting close to being done with you,
17 or at least I am. Let me hand you an exhibit that we used
18 last week. It's named Exhibit 7. Okay?

19 A. Thank you.

20 Q. And you'll see that that is a printout of
21 some e-mails, correct?

22 A. Uh-huh.

23 Q. And the way these work, the most recent
24 e-mail is at top -- at the top.

25 A. Okay.

1 Q. And the oldest e-mail is back in the back.
2 So let's turn to the back, and I'm looking here at page 3
3 of 3, and it actually starts on page 2 of 3, and this
4 appears to be an e-mail from Richard D. Cooper to a number
5 of people, and it's copied to Jeff Scott and Tom Pierie
6 and Tony Zamberlan. Do you see that?

7 A. What's the date on it?

8 Q. The date I see is December 1, 2004, and the
9 time is 4:18 p.m.

10 A. Okay.

11 Q. Do you see that?

12 A. Yes, I do.

13 Q. Okay. I wonder if you'd go ahead and read
14 this e-mail for me.

15 A. Okay. The guys investigated the problem we
16 had last night with the Warrick probe emergency level
17 trips at the upper reservoir. We may have a bad Warrick
18 relay that is dropping out intermittently. We will try
19 and change this out tomorrow. A software timer was added
20 to these trips to delay tripping the units on this kind of
21 intermittent relay operation. The Warrick probes are back
22 in service.

23 Q. Okay. Now, this e-mail was sent after the
24 evening when the plant was operated without the Warrick
25 probes; isn't that correct?

1 A. Correct.

2 Q. And this, in fact, discusses that, I think
3 the term is a spurious trip --

4 A. Uh-huh.

5 Q. -- that the upper probes were providing.

6 And I think you had mentioned that problem, didn't you?

7 Is that correct, what you understand this to be referring
8 to?

9 A. As far as -- I don't know if -- I don't
10 know what relays they're referring to here because he's
11 not telling us.

12 Q. But it does have to do with spurious trips
13 of the upper probes?

14 A. Yes.

15 Q. Okay. Notice the last sentence, a software
16 timer was added to these trips.

17 A. Uh-huh.

18 Q. Now, I think you indicated in your
19 testimony --

20 A. I did.

21 Q. -- that you would not have recommended a
22 timer of 60 seconds. You stated, I believe, that about
23 five seconds you would have recommended?

24 A. (Witness nodded.)

25 Q. And here he doesn't tell you how long the

1 timer was?

2 A. Correct.

3 Q. Okay. If he had said 60 seconds, would
4 that have caused you to take any action, do you think?

5 A. I can't respond to that.

6 Q. Can't say? Okay. Now, the next e-mail,
7 and I'm on page 2 of 3 towards the bottom, is one from
8 Richard D. Cooper to Tony Zamberlan, and he's asking some
9 questions about the timers. Do you see that?

10 A. Uh-huh.

11 Q. Okay. And you weren't copied on this, were
12 you?

13 A. I was not.

14 Q. Is this the first time you've seen this
15 one?

16 A. No. I think during the investigation, I'm
17 sure I've seen this e-mail.

18 Q. Okay. He's talking about something called
19 an 86DT?

20 A. Uh-huh.

21 Q. What's an 86DT?

22 A. Basically, it's a lockout relay that shuts
23 down the generator or pump, depending on what direction
24 you're going.

25 Q. Is this the thing that was supposed to be

1 triggered by the high-high probe?

2 A. Correct.

3 Q. But it wasn't connected directly to the
4 high-high probe, was it?

5 A. No. It's through the PLC.

6 Q. Through the PLC. Okay.

7 A. Uh-huh.

8 Q. So you could program the PLC what exactly
9 you wanted it to do?

10 A. Correct.

11 Q. Okay. Now, I'm going up to the next
12 e-mail. It's on the same page. It's from Tony Zamberlan
13 to Richard Cooper, copied to you, dated Thursday,
14 December 2, 2004. I wonder if you could go ahead and read
15 that into the record.

16 A. I have to yield to Tom Pierie on the wiring
17 design since I did not do that, but I can tell you that a
18 high and low Warrick probe go into the upper reservoir PLC
19 and a high and a low Warrick probe go into the common PLC.
20 It was the low probe in the common PLC that is
21 intermittently coming into alarm and the probe that caused
22 the trip the other day during gen. All four of these
23 points have timers on them to verify that the signal is
24 accurate and not intermittent.

25 Q. Okay. Is it true that you did the wiring

1 design?

2 A. Yes.

3 Q. Okay. And is it accurate what he says
4 about where the probe outputs go as far as which PLCs they
5 go into?

6 A. That is correct. The common PLC, which was
7 down in the plant, so that was a communications link, and
8 we did the high low-low, I do believe, went to the common
9 PLC, and then the PLC that was up at the upper reservoir,
10 the high and the low contacts went into it.

11 Q. Okay. And it was the one, the low one
12 going to the common PLC --

13 A. That would have been the low-low.

14 Q. And that was giving a spurious trip?

15 A. Very good.

16 Q. Okay. Now, I think you testified that you
17 thought it was reasonable to reprogram the low and low-low
18 programs from parallel to series?

19 A. I did.

20 Q. And you would agree with me that that would
21 help to take care of the problem of this spurious trip?

22 A. Correct.

23 Q. But I think you also testified that you do
24 not believe it was reasonable to reprogram the high and
25 high-high probes from parallel to series?

1 A. Correct.

2 Q. This e-mail -- okay. This e-mail talked
3 about timers, though. It didn't talk about series and
4 parallel, did it?

5 A. Correct.

6 Q. It told you there was a timer on each of
7 those four probes, correct?

8 A. Correct.

9 Q. But again, it doesn't say how long?

10 A. Correct.

11 Q. Okay. And so if you remember, when you
12 received this, it didn't cause you any alarm, did it?

13 A. It did not.

14 Q. Okay. Let's go to the next e-mail, which
15 starts on the first page of this series and then continues
16 on to page 2.

17 MR. BYRNE: Mr. Thompson, do you have an
18 extra copy of that by chance?

19 MR. THOMPSON: I apologize. I do. Here.

20 MR. BYRNE: Thank you.

21 MR. THOMPSON: That doesn't have all the
22 pages. That does have that first page. You can see that
23 in getting copies made, we also make mistakes.

24 MR. BYRNE: My version is the same as that.
25 That's why I was having trouble.

1 MR. THOMPSON: Okay. I do apologize.

2 BY MR. THOMPSON:

3 Q. Let's see. This e-mail, it states it's
4 from Richard D. Cooper, and that it was sent December 2,
5 2004 at 8:23 a.m. to Tony Zamberlan, copied to a number of
6 people, one of whom was you; is that correct?

7 A. Correct.

8 Q. And I wonder if you could go ahead and read
9 this e-mail for us.

10 A. Okay. I'm beginning to understand. Last
11 evening both units were on and we got one of those low-low
12 level alarms on the alarm summary. Unit stayed on, so I
13 guess the time delays are working. We pumped back up in
14 the morning to 1596.1 or so, and I went up to the upper
15 reservoir to look at the level, and it was approximately
16 six inches below the top batten bar at the visitor's
17 platform. I drove to the gage house, and it was about a
18 foot below the batten bar. I went to the low point of the
19 parapet wall, and it was at about six inches below the
20 batten bar. The PD in either -- the PD had either just
21 started Unit 2 in gen or had been running for maybe ten
22 minutes at the most. Looks like we have the levels just
23 right.

24 For the trend, it looks like Unit 1 shut
25 down at 1592 and Unit 2 shut down at 1596. Everything

1 looked good. We didn't have any lockouts on the units, so
2 no extreme levels came in. Our total volume is about
3 4,888 ACFT, and it looks like the lowest reading got in
4 the lower reservoir were 736.5 at the dam and 734 at the
5 tailrace. So far so good. Thanks, Rick.

6 Q. Okay. Now, if I -- I want to make sure I
7 understand what this means correctly. I think it's
8 telling us that on the night of December 1, December 2,
9 they operated -- they did a pump operation to fill the
10 upper reservoir. Am I correct in understanding that?

11 A. Correct.

12 Q. And that both of the turbines were
13 operated?

14 A. Very good. Yes.

15 Q. Okay. And there was a low-low alarm on the
16 alarm summary. Does that mean that on the historian, it
17 indicated that the low-low probe had triggered?

18 A. Correct.

19 Q. And am I correct in inferring that that was
20 a spurious trip?

21 A. Well, they had put the timer in. So I'm
22 assuming he had an instantaneous alarm on it.

23 Q. Okay.

24 A. It alarmed, but it wouldn't trip.

25 Q. It alarmed, but not tripped?

1 A. Correct.

2 Q. It didn't interrupt or stop the operation?

3 A. Very good.

4 Q. But it did alarm?

5 A. Correct.

6 Q. Okay. And that's what he means when he

7 says the unit stayed on, so I guess the time delays are

8 working. Okay. Then he says, we pumped back up to 1596.1

9 or so. So a little bit above the normal operating level,

10 correct?

11 A. Correct.

12 Q. And he went and viewed the water level, the

13 physical water level at three different places. Is that

14 what he's telling us?

15 A. Yes.

16 Q. Six inches below the top batten bar at the

17 visitor's platform, a foot below the batten bar at the

18 gage house, six inches below the batten bar at the low

19 point in the parapet wall. So at three different places

20 he observed it.

21 Now, the batten bar, am I correct in

22 understanding -- I think Mr. Bluemner told us this -- that

23 was what held the lining on at the top; is that correct?

24 A. Correct.

25 Q. Do you know how far the batten bar was

1 below the top of the parapet wall?

2 A. I do not.

3 Q. You don't.

4 A. I think it changed in heights, though.

5 Q. It may not have been at the --

6 A. I measured it once when I went out for, you

7 know, after the Katrina winds, and I remember measuring

8 14 feet -- or excuse me -- 14 inches down from, I do

9 believe it was the visitor's center, the gage house. I

10 don't recall.

11 Q. So at least at one of those two points --

12 A. Right.

13 Q. -- it was about 14 inches below the top of

14 the parapet wall?

15 A. Correct.

16 Q. You don't know how far below the top it

17 would have been at the low point?

18 A. I do not.

19 Q. Okay. It may have been different?

20 A. (Witness nodded.)

21 Q. Okay. And we're correct in understanding

22 that the visitor's platform and the gage house were both

23 about the same height?

24 A. Yes.

25 Q. And they were high points?

1 A. Yes.

2 Q. Okay. It says the PD had either just
3 started. What's a PD?

4 A. Power dispatch.

5 Q. Okay. So that would be the dispatcher in
6 St. Louis?

7 A. Probably Osage.

8 Q. At Osage. Okay. Now, when they talk about
9 in gen, that means the operation of lowering the reservoir
10 and making electricity, correct?

11 A. Correct.

12 Q. So he's saying that had either just started
13 or had been running for no more than ten minutes. He
14 seems happy with these levels; would you agree?

15 A. He does.

16 Q. Looks like we have the levels set just
17 right. Okay. And this next sentence, this is where, in
18 fact, the level controls were set to turn off the units,
19 isn't that correct, 1592 and 1596?

20 A. Correct.

21 Q. And those would have been the transducers,
22 the piezometers?

23 A. Very good.

24 Q. Okay. So the average of the three that
25 would be read by the programmable logic control was set to

1 turn off those units at those two levels; is that what you
2 understand?

3 A. Yes.

4 Q. And that programing would have been done by
5 Mr. Zamberlan; is that right?

6 A. Yes.

7 Q. Correct?

8 A. Yes.

9 Q. But the levels would have been selected and
10 given to Mr. Zamberlan by someone else; is that right?

11 A. Yes.

12 Q. Probably Mr. Cooper?

13 A. Yes.

14 Q. Okay. So when he says, we didn't get any
15 lockouts on the units, so no extreme levels came in, does
16 that mean -- is he talking about extreme levels from the
17 transducers or is he talking about Warrick probes?

18 A. I would think he'd be talking about Warrick
19 probes.

20 Q. Okay. So in other words, it didn't hit the
21 high or high-high probe?

22 A. I would agree.

23 Q. Is that how you understand that?

24 A. That's how I understand that.

25 Q. Okay. Very good. Thank you. Now, the

1 last e-mail -- I guess actually there's two more. There's
2 one from Mr. Zamberlan to Mr. Pierie, that's you, that
3 says woo-hoo. Do you see that?

4 A. That's Zamberlan, yes.

5 Q. And I think what he's saying is he's
6 reacting with pleasure at Mr. Cooper saying we've got the
7 levels just right; would you agree?

8 A. I would agree.

9 Q. Okay. That means a job well done, right?

10 A. Very good.

11 Q. Okay. Then you responded, I believe, and
12 this is on December 2 at 1:38 p.m., to Mr. Zamberlan you
13 asked, did we replace the bad Warrick coil, correct?

14 A. Correct.

15 Q. Did you ever get an answer to that?

16 A. I think I did get a verbal on the phone.

17 Q. A yes or no?

18 A. Yes.

19 Q. A yes. Okay. Then here is an e-mail
20 response. This is the very last e-mail at the top of
21 page 1 of Exhibit 7 from Mr. Zamberlan to Mr. Pierie. I
22 wonder if you could read that.

23 A. Tom: They were supposed to do that today.
24 So I'm assuming he's referring to my replacing the bad
25 Warrick coil.

1 Q. Okay.

2 A. I thought it was 125 LDC, but we were up at
3 the upper reservoir to pull up the high level Warrick
4 probe, the 1596.5. We heard a terrible noise coming from
5 the Warrick relay. Lasted a couple of seconds. We were
6 either going to replace it or swap it high-level probe to
7 see if it is a relay problem or something else. That is
8 the current status.

9 Q. Okay. So is this the e-mail that led you
10 to believe that Mr. Zamberlan had moved the level of the
11 upper Warrick probes?

12 A. Correct.

13 Q. Now, what about this level 1596.5, as far
14 as you know, was either the high or high-high probe ever
15 supposed to be moved to 1596.5?

16 A. Not that I know of.

17 Q. In fact, neither one of them was at that
18 level when found, were they?

19 A. No, they were not.

20 MR. THOMPSON: I think we're up to Exhibit
21 15; is that correct, your Honor?

22 JUDGE DALE: Yes.

23 MR. THOMPSON: I have a drawing here. May
24 I approach?

25 JUDGE DALE: Yes.

1 MR. THOMPSON: I only have one copy of
2 this. I'll get some more made.

3 THE WITNESS: Thank you.

4 BY MR. THOMPSON:

5 Q. Is that a schematic drawing of the piping
6 going into the metal box by the gage house?

7 A. Yes, it is.

8 MS. HOUSE: Your Honor, may I approach just
9 to see what the witness is looking at?

10 MR. THOMPSON: Absolutely. I apologize.

11 JUDGE DALE: Actually, could you briefly
12 put it up on the --

13 MR. THOMPSON: I'll do anything you want,
14 Judge. Put it on the ELMO?

15 JUDGE DALE: Yes, please.

16 MR. BYRNE: Is that the same as Exhibit 4?

17 MR. THOMPSON: I don't know. Is it? If it
18 is, then we won't have to call this one 15. I've got it
19 on there, Judge, but I think you've got to turn the camera
20 on.

21 JUDGE DALE: It is on. Is it showing on
22 that one?

23 MS. PAKE: Yes.

24 MR. THOMPSON: And I apologize. I don't
25 know if this is the same as Exhibit 4 or not. It may be.

1 MS. HOUSE: I think it is.

2 MR. BYRNE: It sure looks like Exhibit 4.

3 MR. THOMPSON: Then let's just call it
4 Exhibit 4.

5 JUDGE DALE: Give it back to the witness
6 then. At least everyone has had an opportunity to look at
7 it.

8 BY MR. THOMPSON:

9 Q. And the reason I'm showing you this is
10 simply because this illustrates that all of the
11 instruments, in fact, were installed in piping; isn't that
12 correct?

13 A. That is correct.

14 Q. The Warrick probes were installed in one
15 pipe, correct?

16 A. Correct.

17 Q. And the transducers were installed in
18 another pipe; is that correct?

19 A. Correct.

20 Q. And two pipes were spare?

21 A. Correct.

22 Q. Okay. Thank you. I'll recapture that.

23 MR. THOMPSON: Do you guys want to have a
24 look at this one?

25 JUDGE DALE: 4 is the former slide that was

1 excluded from the Alexander presentation but not included
2 in the slide show that he presented.

3 COMMISSIONER GAW: That doesn't tell me a
4 source.

5 MR. THOMPSON: Do you know the source of
6 this ultimately?

7 MR. BYRNE: That was one of the slides from
8 Mr. Alexander's previous presentation.

9 COMMISSIONER GAW: Who drew the drawing?
10 Where did the drawing come from? Is it a part of one of
11 the reports?

12 MS. HOUSE: I believe it was one of our
13 engineers, but we can inquire over the lunch hour and see
14 if we can confirm exactly who did it.

15 MR. THOMPSON: It's actually in the Highway
16 Patrol report.

17 COMMISSIONER GAW: It is?

18 MR. THOMPSON: I can't tell you who drew it
19 originally.

20 COMMISSIONER GAW: Perhaps someone will be
21 able to do that later.

22 MR. THOMPSON: He's got extra copies.

23 JUDGE DALE: Since it is visually different
24 from Exhibit 4, I'm going to go ahead and separately mark
25 it as Exhibit 15.

1 MR. THOMPSON: Okay. So we're back to
2 Exhibit 15. That works. I have several copies here now,
3 thanks to Mr. Byrne.

4 MR. BYRNE: I don't mean to overcomplicate
5 this, but there are some hard to read handwritten things
6 on that, and I noticed that when we put Exhibit 4 into the
7 record, I took it back to St. Louis and made a higher
8 resolution copy of Exhibit -- a high resolution copy of
9 Exhibit -- a bunch of high resolution copies.

10 MR. THOMPSON: Is that what these are?

11 MR. BYRNE: No. Those are the low
12 resolution, the ones I had. So eventually I'm going to
13 distribute high resolution copies of this where you ought
14 to be able to read every single one of the numbers on it.

15 JUDGE DALE: High resolution copies of
16 Exhibit 15?

17 MR. BYRNE: Well, Exhibit 4.

18 MR. THOMPSON: Which we think is the same
19 as Exhibit 15.

20 JUDGE DALE: So at some point you will be
21 substituting high resolution 4 for the existing 4?

22 MR. BYRNE: Yes. We had one high
23 resolution copy that we gave to the court reporter. So
24 the official record is high resolution, but I thought the
25 Commissioners and the other parties do not have the high

1 resolution copy.

2 JUDGE DALE: Okay. Thank you.

3 (EXHIBIT NO. 15 WAS MARKED FOR
4 IDENTIFICATION.)

5 MR. THOMPSON: Let me just say that I'm
6 using this exhibit only to illustrate that all of the
7 instruments were placed in the piping. I don't make any
8 references or representations with respect to the
9 difficult to read figures that someone's put on there, and
10 I urge you not to draw any conclusions from those at least
11 until they're explained. Okay. This is just solely to
12 illustrate the placement of the probes in the piping.

13 BY MR. THOMPSON:

14 Q. And Mr. Pierie, you didn't draw this, did
15 you?

16 A. I did not.

17 Q. Had you ever seen this before?

18 A. I have not.

19 MR. THOMPSON: We're at noon, your Honor.
20 I was wondering if you had any plans for the noon hour?

21 JUDGE DALE: How much longer do you think
22 you'll be, Mr. Thompson?

23 MR. THOMPSON: Finding this difficult?

24 JUDGE DALE: I was just wondering if we
25 could break --

1 MR. THOMPSON: I have so many more e-mails.
2 I think I'll probably be another half hour or so.

3 JUDGE DALE: Why don't you continue, and
4 then we'll break after you finish. I know it's a
5 hardship.

6 MR. THOMPSON: I have a medical problem,
7 your Honor.

8 JUDGE DALE: I know.

9 MR. THOMPSON: Well, with that instruction,
10 we will march through these e-mails forthwith.

11 JUDGE DALE: Thank you.

12 MR. THOMPSON: I will mark this one as
13 Exhibit 16. I wonder if I may approach?

14 JUDGE DALE: Yes.

15 (EXHIBIT NO. 16 WAS MARKED FOR
16 IDENTIFICATION BY THE REPORTER.)

17 BY MR. THOMPSON:

18 Q. Now, we're just going to go through a
19 series of e-mails lickedy split, Mr. Pierie.

20 A. Okay.

21 Q. Mr. Pierie, this is an e-mail that you
22 sent. Take a look at this e-mail, Mr. Pierie. This is
23 one that I believe you sent; is that correct?

24 A. That is correct.

25 Q. And you sent it to Jeff Scott, copied to

1 Richard Cooper?

2 A. That is correct.

3 Q. And you would agree with me the date was
4 September 28th, 2005?

5 A. Correct.

6 Q. And this would have been -- this would have
7 been after the Hurricane Rita overtopping; isn't that
8 correct?

9 A. Correct.

10 Q. And, in fact, this is the one you mentioned
11 to us where you inquired of Mr. Scott whether there was a
12 Warrick probe alarm or trip with that event, correct?

13 A. Correct.

14 Q. And did you tell us if you ever got an
15 answer?

16 A. I did not get an e-mail in response back,
17 so I actually called Jeff and I asked him. He said he
18 didn't think the water got that high where the Warricks
19 were.

20 Q. Didn't think it got that high. Okay. And
21 as a result of that, this didn't cause you any alarm, did
22 it?

23 A. No.

24 MR. THOMPSON: I would move the admission
25 of Exhibit 16.

1 MS. HOUSE: No objection.

2 JUDGE DALE: Are there any objections?

3 MR. THOMPSON: And Exhibit 15 while we're
4 at it.

5 JUDGE DALE: Thank you. Is there any
6 objection to Exhibit 15?

7 MS. HOUSE: No objection.

8 JUDGE DALE: Then Exhibits 15 and 16 are
9 admitted into the record.

10 (EXHIBIT NOS. 15 AND 16 WERE RECEIVED INTO
11 EVIDENCE.)

12 MR. THOMPSON: If I may approach, your
13 Honor?

14 (EXHIBIT NO. 17 WAS MARKED FOR
15 IDENTIFICATION.)

16 BY MR. THOMPSON:

17 Q. I have another e-mail that's been marked as
18 Exhibit 17. Now, this is an e-mail, I believe, from
19 Mr. Cooper to you; is that correct?

20 A. Yes.

21 Q. Dated October 10, 2005?

22 A. Correct.

23 Q. Or shall I say the very top e-mail is?

24 A. Correct.

25 Q. There's another e-mail at the bottom of the

1 page, isn't there?

2 A. Yes.

3 Q. And that one is from you, correct?

4 A. Correct.

5 Q. Dated October 7th. I wonder if you could
6 read the October 7th e-mail?

7 A. Guys, we're going to install a wind speed
8 transmitter at the upper reservoir. The value will show
9 on the HMI and will have an associated alarm. We can also
10 incorporate an automatic gen start to bring down the
11 reservoir level to some point if we feel the need.

12 An additional Warrick probe, set two inches
13 below the pump stop set point 1596 will be installed so
14 that the level transmitters can be checked from time to
15 time. When the Warrick probe is covered with water it
16 will display on the HMI. We'll also add each level
17 transmitter reading at the HMI for reference.

18 With the PVC pipes housing the upper
19 reservoir level transmitters moving off or bowing out of
20 the unit strut supports by at least five feet caused the
21 transmitters to rise in the pipe which moved up the
22 reference point. Steve B had be in -- will be lining up a
23 diver to refasten the pipes to the unit strut. Once this
24 is done, we can see if there's a drop in the level reading
25 and then we can readjust the reading.

1 The high and the high-high Warrick probes
2 are seven inches and four inches from the top of the wall
3 respectively. So if on 9/27 the level was four inches
4 below the high level Warrick should have picked up. The
5 elevation at the visitor's platform and the gauge house
6 are the same. Another note, the top of the batten strip
7 is 14 inches from the top of the wall if that helps get a
8 bearing on where the level was at on 9/27. If you want to
9 lower the high level probes, we can do that, but I think
10 we chose the levels so that the normal wave action
11 wouldn't cause nuisance trips.

12 I'm hoping to have all this done by the end
13 of the month. Do we want to reorder the level transmitter
14 that drifted from the two others or monitor it for now?

15 Q. Now, Mr. Pierie, this work you're talking
16 about, you've already told us it never got done, correct?

17 A. It did not.

18 Q. Did it require an outage to do it?

19 A. It did not.

20 Q. It did not. Okay. It did require an
21 outage to fix the supports for the PVC piping; isn't that
22 correct?

23 A. That's correct.

24 Q. And if I told you that Mr. Bluemner
25 testified that he repeatedly attempted to set such an

1 outage up and was unable to, would you have any reason to
2 disagree?

3 A. I can't answer that question.

4 Q. Okay. That was not something you were
5 concerned with or involved in, right?

6 A. No.

7 Q. Okay. Why didn't this work get done? You
8 were planning to have it all done by the end of October,
9 correct?

10 A. Well, again, I was being transferred to
11 another department, and so trying to -- still had some
12 duties with generation engineering, and I was taking over
13 my new assignment with new generation environmental
14 projects. I did order the material. The wind transmitter
15 came in wrong, so we had to reorder it, and then it was
16 shipped out to the site.

17 So we had -- again, we had the material
18 there, and it was a matter of lining up the consultant to
19 go over it. I know I had some verbal conversations with
20 him saying, hey, I need you to do this work, because he
21 was already down there preparing for the Phase 2 of the
22 controls upgrade, so --

23 Q. Okay. Now, in what looks like the fourth
24 paragraph here, it says the high and high-high Warrick
25 probes are seven inches and four inches from the top of

1 the wall. Now, we've already discussed that, and when you
2 originally set them, I think you told us they were 24
3 inches and
4 22 inches from the top of the wall?

5 A. Correct.

6 Q. And seven inches and four inches, we've
7 gone over the documentation. In fact, the documentation
8 suggested they were lower than this, didn't it?

9 A. Correct.

10 Q. And the documentation was wrong?

11 A. Correct.

12 Q. And I think you said this -- seeing these
13 levels did not cause you any concern?

14 A. It did not.

15 Q. And that's because you're not a dam guy?

16 A. Correct.

17 Q. You really were not all that aware of where
18 the top of the low point was?

19 A. Well, I mean, again, at the very beginning
20 of this project in '04, I mean, I knew there was a low
21 point in the wall. Again, I lost sight because I went to
22 the gauge -- excuse me -- went to the visitor's platform.

23 Q. Right.

24 A. And that's where my confusion lied. I
25 mean, that's where it was.

1 Q. I understand. But you sent this e-mail to
2 Rick Cooper and Jeff Scott?

3 A. I did.

4 Q. They were in charge of that plant, correct?

5 A. Correct.

6 Q. Do you know whether these level figures
7 that you have in this e-mail, do you know whether those
8 caused any alarm to either Mr. Cooper or Mr. Scott?

9 A. I can't answer that.

10 Q. You don't know?

11 A. I don't know.

12 Q. Okay. But Mr. Cooper did respond to you,
13 didn't he, and that's the e-mail at the top of the page?

14 A. Correct.

15 Q. And that is on Monday, October 10, correct?

16 A. Correct.

17 Q. I wonder if you could go ahead and read
18 that e-mail.

19 A. Jeff says to go ahead and order a new level
20 transmitter. Or do you want us to order it? Rick.

21 Q. And that's just talking about the absolute
22 last thing in your e-mail, isn't it?

23 A. Correct.

24 Q. And that's the one that had drifted?

25 A. Correct.

1 Q. Okay. It was no longer reading accurately?

2 A. Correct.

3 Q. So based on his response anyway, you would
4 agree with me that he didn't seem to see any problem in
5 the level the high level Warrick probes were set at?

6 A. I agree.

7 Q. Thank you.

8 MR. THOMPSON: I would move for the
9 admission of Exhibit 17.

10 MS. HOUSE: No objection.

11 JUDGE DALE: Thank you. Exhibit 17 is
12 admitted into evidence.

13 (EXHIBIT NO. 17 WAS RECEIVED INTO
14 EVIDENCE.)

15 (EXHIBIT NO. 18 WAS MARKED FOR
16 IDENTIFICATION.)

17 BY MR. THOMPSON:

18 Q. I'll handing you some more e-mails that
19 have been marked as Exhibit No. 18. As usual, the
20 earliest one is at the back, or starts at the bottom of
21 page 1, finishes on page 2, and that is an e-mail from
22 Mr. Cooper, correct?

23 A. Correct.

24 Q. Were you copied on that e-mail?

25 A. I was not.

1 Q. So whatever it says, it's not something
2 they shared with you?

3 A. No, they did not.

4 Q. Okay. Then they have -- there's a second
5 e-mail just above that, and that one wasn't copied to you
6 either, was it?

7 A. It was not.

8 Q. Same with the top one. Okay. Let's not
9 waste any more time on that one. We'll ask somebody else
10 about that.

11 A. Okay.

12 Q. I have one more, and this one you were
13 copied on. We'll finish up with this.

14 (EXHIBIT NO. 19 WAS MARKED FOR
15 IDENTIFICATION.)

16 BY MR. THOMPSON:

17 Q. Okay. Mr. Pierie, I've handed you another
18 set of e-mails that's been marked as Exhibit 19, and this
19 is three pages. The original e-mail starts at the middle
20 of page 2. Do you see that?

21 A. Okay.

22 Q. And that is from Mr. Cooper; would you
23 agree?

24 A. Yes, I do.

25 Q. And it was sent to Tony Zamberlan, Tom

1 Pierie, Chris Hawkins and Dan Berrien, correct? That is
2 the control project team?

3 A. Very good.

4 Q. Okay. I wonder if you'd go ahead and read
5 that e-mail.

6 A. Tonight the power dispatch (PD) put both
7 units in dispatch, not the first time since we came back,
8 and the units steadily ramped down from 225 megawatts to
9 10 to 15 megawatts and then started climbing back up. I
10 Looked at the setpoint on the governor screen and the
11 units were following the setpoint. The setpoint was
12 ramping up and down without a request from the PD. I once
13 saw a setpoint of 250 megawatts on the governor screen and
14 the units were in runback due to MVA which is at 230.

15 PD tried going back to efficiency at first
16 and couldn't get it to go. The PD supervisor tried at his
17 computer and it went back to efficiency. The units
18 responded and went back to the efficiency setpoint without
19 problem. The efficient setpoint was rock steady and
20 following the falling upper reservoir level as designed.
21 This setpoint is generated internally inside the governor
22 controls.

23 Something is seriously wrong with the
24 dispatch signal coming from downtown through the plant
25 RTU. The PD supervisor is going to turn a report in to

1 communications. For now we can only operate in efficiency
2 mode in generate. The PD supervisor said they had the
3 same thing happen last week, but after going from dispatch
4 into efficiency, to catch the units, they went back to
5 dispatch, and it seemed to be working fine. This is the
6 first I've heard of that incident. I don't know if it's a
7 calculation error or something else. Seems like the units
8 have operated in dispatch successfully at times over the
9 last two weeks, so I can't guess what's going on. I
10 didn't see anything with the plant controls that would
11 cause this.

12 There were no plant alarms, other than what
13 we have been seeing, and the governor controls seemed to
14 me to be doing what they were told to do by dispatch
15 signal from downtown. Rick.

16 Q. Okay. And the date of this e-mail you
17 would agree was November 30th, 2004?

18 A. Correct.

19 Q. Now, this is describing a problem of some
20 sort with the control system; is that correct?

21 A. Yes.

22 Q. What exactly was the problem, if you know?

23 A. It's a governor control, and you've got me.

24 Q. Okay. So they were having a hard time
25 getting the turbines to go on properly; is that right?

1 A. I assume.

2 Q. Okay. Was this problem within your
3 bailiwick or not?

4 A. No. This was Dan Berrien, the guy that did
5 the governor control.

6 Q. Okay. So even though it was sent to you
7 and Mr. Zamberlan and Mr. Hawkins, it was really
8 Mr. Berrien's problem?

9 A. Correct.

10 Q. As far as you know, did he fix it?

11 A. I do believe he -- well, I don't know that
12 for sure.

13 Q. You don't know?

14 A. I would think he would have, following from
15 this e-mail.

16 Q. Okay. Let's go on to the next e-mail.
17 This starts at the top of page 1.

18 A. Okay.

19 Q. And that is an e-mail from Mr. Cooper,
20 correct?

21 A. Correct.

22 Q. Same date, November 30th, 2004; would you
23 agree?

24 A. I do.

25 Q. Sent sometime later, though, correct?

1 What's the time of this second e-mail?

2 A. 10:05 p.m.

3 Q. And the first one was at 6:57 p.m.; would

4 you agree?

5 A. Correct.

6 Q. This one was also sent to Mr. Zamberlan, to

7 yourself, to Mr. Hawkins and Mr. Berrien, correct?

8 A. Correct.

9 Q. Then OSAG, would that be Osage?

10 A. Correct.

11 Q. And power supply supervisor, who would that

12 be?

13 A. I think that would be down at the general

14 office building.

15 Q. That would be on Chouteau?

16 A. Correct.

17 Q. And then to Mr. Schoolcraft, correct?

18 A. Correct.

19 Q. Who's Mr. Schoolcraft?

20 A. He is -- he also work in power supply, I do

21 believe.

22 Q. Do you know him?

23 A. I just met him the other day, actually.

24 Q. Okay. He's not somebody you've had to

25 interface with in the course of your duties?

1 A. No.

2 Q. This was also copied to Jeff Scott,
3 correct?

4 A. Correct.

5 Q. How about Christopher A. Iselin, is that
6 how you say that name?

7 A. Yes.

8 Q. Who is that?

9 A. He is -- well, he's -- he was in the -- in
10 the -- I can't think right now.

11 Q. If you don't know, that's all right.

12 A. Yeah. I know Chris. I'm trying to -- I
13 can't really think of what his title was, though.

14 Q. Was he someone you worked with a lot or
15 not?

16 A. No. No.

17 Q. Okay.

18 A. He's upper management.

19 Q. How about Thomas A. Buhr?

20 A. Tom Buhr worked at Osage as the electrical
21 engineer.

22 Q. Okay. How about Phillip M. Thompson?

23 A. He also has worked at Osage.

24 Q. Then Robert W. Ferguson, that was your
25 boss?

1 A. That's my boss.

2 Q. Okay. I wonder if you would read this
3 e-mail.

4 A. Okay. After I wrote the e-mail below, both
5 units auto shutdown on what appears to have been due to
6 the new Warrick probes for the upper reservoir. Relay
7 86DT picked up for both units. 86DT picks up in generate
8 mode on extreme low level in the upper reservoir or when
9 power is lost to the Warrick probes. We had plenty of
10 level in the upper reservoir at that time, approximately
11 1575. So the thought is we had an intermittent power blip
12 to the Warrick probe relay, and they shut down the units.
13 Normally the units shut down based on level from the level
14 transducers.

15 These are the setpoints I've sent out in
16 e-mails from time to time. The Warrick probes are hard
17 wired contacts that set above the normal pump shutdown
18 levels, and there are corresponding Warrick probes that
19 sit below the normal generate shutdown levels. The
20 Warrick probes are emergency shutdowns monitoring extreme
21 low and extreme high levels in the upper reservoir.
22 Tonight the generate Warrick probes took both units off.

23 We have temporarily disabled the Warrick
24 probes in both the generate and pump modes for tonight
25 only. That mean the Osage operators need to keep a close

1 watch on the upper reservoir levels in generate and pump
2 modes. The level setpoints I e-mailed out today should
3 still shut down the units at the levels I indicated based
4 on the level transducers. The Osage operators need to
5 make sure this happens. There are no knowledge backups
6 now. In addition, if you lose the upper reservoir
7 communication, no levels will be displayed, and the last
8 reading you saw was up near the top in pump or levels --
9 or near the bottom in generate, you need to shut down the
10 units immediately.

11 The unit PLCs have not been programmed to
12 shut down the units if communication, level indication, is
13 lost, thinking we had enough time to get someone onsite
14 and we had the Warrick probes to back us up. We do not
15 have Warrick probes backing us up now. Also, if
16 communication is lost between Osage and Taum Sauk such
17 that control, unit start and stop, is lost, call me
18 immediately to shut down the units or I'll provide local
19 level readings by site.

20 Tony Zamberlan is due in on AM on
21 Wednesday, December 1st, to help us troubleshoot this loss
22 of power to the Warrick probes, loose wire, flaky
23 transformer, flaky Warrick probe relay, et cetera. We
24 will at the least install a time delay in this circuit if
25 we are not able to find the intermittent power loss and

1 restore the Warrick probe operation. We don't want to run
2 without the Warrick probes any longer than tonight.

3 To repeat part of my e-mail I sent out
4 earlier today, the normal transducer level shutdowns are:
5 Pump unit shutdown levels. Pumps off, first pump off,
6 second pump off, all, is at 1592, 1596 and then 1596.5.
7 There are Warrick probes above 1596.5. Lower reservoir at
8 the dam, 736.5.

9 Q. You don't need to read the lower levels.

10 A. Okay.

11 Q. And then if you would read the generate
12 unit shutdown levels, but just for the upper reservoir.

13 A. Generate unit shutdown levels. Generator
14 off, first generator off at 1528. Second generator off at
15 1525.

16 Q. And then all at 1524.5?

17 A. All at 1524.5.

18 Q. Okay. I think you told us earlier that
19 relay 86DT was the one that would do the automatic
20 shutoff?

21 A. Correct.

22 Q. And that was kind of the -- that was what
23 the Warrick probes would trigger if there was an
24 emergency, correct?

25 A. Correct.

1 Q. Okay. And that is what happened when they
2 were operating as Mr. Cooper's describing, correct?

3 A. Very good.

4 Q. Now, he's talking in generate mode on
5 extreme low level. He's talking about the low and the
6 low-low probes, correct?

7 A. Correct.

8 Q. Designed to prevent them from pumping too
9 much water out of the reservoir?

10 A. Right, in the gen mode.

11 Q. When they're generating, correct. And this
12 was a spurious trip; is that correct?

13 A. That's correct.

14 Q. Because he's saying that, at the time of
15 the trip, they had about 1575 in the reservoir, correct?
16 And we can see from the end of this that they're not
17 supposed to trip off until it's below 1524.5, correct?

18 A. Correct.

19 Q. Okay. So they're about 50 feet above that.
20 Now, he talks about putting a time delay in, right, in
21 that third paragraph?

22 A. He does.

23 Q. Would that then -- as far as you know, was
24 that Mr. Cooper's idea or was that Mr. Zamberlan's idea?

25 A. That I cannot answer.

1 Q. Okay. And they don't talk about how long?

2 A. Correct.

3 Q. Okay. And you've indicated that a time

4 delay of, I think you said, five seconds would have been

5 sensible?

6 A. On the high probes.

7 Q. On the high probes. What about on the low

8 probes?

9 A. I can't -- I can't answer that.

10 Q. Very good. And then in the second

11 paragraph, this is where he's talking about operating the

12 dam without the Warrick probes online, correct?

13 A. Correct.

14 Q. And I think you told me that it was your

15 understanding that they had had constant visual

16 surveillance of the water level at that time?

17 A. I think we were referring to when they were

18 first pumping back.

19 Q. Okay. Because, in fact, based on this

20 e-mail, would you agree with me there's no indication that

21 there was visual surveillance, is there?

22 A. There is not.

23 Q. Okay.

24 A. But I'm not sure if that's totally true,

25 though. I can't respond to that.

1 Q. Okay. Because you weren't there, were you?

2 A. Right.

3 Q. I understand. It is clear, however, that

4 they were getting Mr. Zamberlan to come in and fix the

5 problem, right?

6 A. Correct.

7 Q. And if you would remember back to

8 Exhibit 7, Mr. Zamberlan sent an e-mail that day,

9 December 1st, saying they had gone up to pull the upper

10 probes up to 1596.5; isn't that correct?

11 A. That is correct.

12 Q. So would you agree that that was part of

13 the fix that Mr. Zamberlan came up with?

14 A. I can agree.

15 Q. You don't really know, though?

16 A. I don't know.

17 Q. You weren't there?

18 A. I was not there.

19 Q. And as far as you know, they never were set

20 at 1596.5?

21 A. I don't know.

22 Q. You don't know. But I mean, based on the

23 tape, based on your examination of the probes, when you

24 set them, they were at 1596.0 and 1596.2, correct?

25 A. Correct.

1 Q. And when you later examined them, they had
2 been moved by 18 inches, correct?

3 A. Correct.

4 Q. To 15-- I think I did this addition once --
5 1597.5 and 1597.7, correct?

6 A. Correct.

7 Q. So at any rate, you never saw them at
8 1596.5?

9 A. No, I did not.

10 MR. THOMPSON: Okay. Okay. I have no
11 further questions. Thank you very much.

12 THE WITNESS: You're welcome.

13 JUDGE DALE: And on that happy note --

14 MR. THOMPSON: And I'll offer Exhibit 19 if
15 I haven't already.

16 JUDGE DALE: 18?

17 MR. THOMPSON: This is 19. 18 was the one
18 I marked and discovered he hadn't been copied on.

19 JUDGE DALE: So you're just offering 19?

20 MR. THOMPSON: I'm offering 19.

21 JUDGE DALE: Any objections?

22 MS. HOUSE: No objection.

23 COMMISSIONER GAW: May I ask a quick
24 question about this exhibit? It probably was covered and
25 I just missed it. The third page, did you ask about what

1 that was? I think I just missed it.

2 MR. THOMPSON: I didn't ask any questions
3 about page 3.

4 COMMISSIONER GAW: It's not clear to me
5 what it is.

6 MR. THOMPSON: It's not clear to me either,
7 which is why I didn't ask about it.

8 COMMISSIONER GAW: It's attached, so --

9 BY MR. THOMPSON:

10 Q. Okay. Could you read the third page, and
11 then I'm going to ask you if you know anything about it.
12 I think it starts Chris Hawkins. Here, I'll show you.

13 A. I've got it. Chris Hawkins - I got a call
14 from someone downtown complaining that when they were
15 sending raise pulses our units were doing the opposite.
16 Something about chopping the pulses off. He said he would
17 contact you.

18 Q. This appears to be maybe a postscript or PS
19 to Mr. Cooper's original e-mail November 30th, 6:57.
20 Would you agree?

21 A. I agree.

22 Q. Okay. Do you know anything about what this
23 question is referring to?

24 A. Again, it must be referring to the governor
25 control.

1 MR. THOMPSON: Okay. Thank you.

2 COMMISSIONER GAW: Thanks.

3 MR. THOMPSON: I have no further questions,
4 your Honor.

5 JUDGE DALE: Then we will take a break for
6 lunch, and we will be back here at 1:45.

7 (A BREAK WAS TAKEN.)

8 JUDGE DALE: We're back on the record and
9 ready for OPC to inquire of the witness.

10 CROSS-EXAMINATION BY MS. BAKER:

11 Q. My name is Christina Baker, and I'm from
12 the Office of Public Counsel. I guess I just have a few
13 questions about the safety protocols and the redundancy
14 that has been designed into the system.

15 A. Okay.

16 Q. Can you tell us, what is the first safety
17 alarm or soft shutdown, hard shutdown that's in the
18 sequence? Do you know?

19 A. In reference to the high level probes, say
20 if your transducers were to fail and now you're relying on
21 the high and the high Warrick probes to take you out, the
22 redundancy is again to -- the original redundancy was to
23 have two devices. So if any one device failed, you would
24 have that second device to take you out. And then
25 basically if a probe does get wet, and again talking high

1 level probes, it would basically shut the unit off.

2 Q. Okay. And that is within the Warrick
3 probes themselves?

4 A. Correct.

5 Q. What safety features have been coded in for
6 the piezometers?

7 A. Basically, there was three. So the logic
8 was supposed to be set up that you had three devices, both
9 reading at the same elevation. If one of the devices was
10 to drift, and again, it was supposed to be a couple of
11 percent from the other two, that device was supposed to be
12 removed from the reading, the control reading, and to
13 alarm.

14 Q. And that would leave two monitors going?

15 A. Correct.

16 Q. And there would be an audible alarm or a
17 monitor alarm?

18 A. Audible and visual alarm for that third
19 device that was out of tolerance.

20 Q. Okay. Is there another -- another level
21 for the piezometers beyond that?

22 A. No.

23 Q. Would there be a soft shutdown or hard
24 shutdown at that point?

25 A. Well, that would -- that's the normal

1 shutdown.

2 Q. That would be the alarm?

3 A. The normal shutdown would -- the normal
4 shutdown is off the transducers, and if one was taken out
5 of the measurement, they would continually operate as
6 normal.

7 Q. Okay. Would there be a soft shutdown of
8 the plant at that point?

9 A. No. It would keep operating.

10 Q. Okay. Where would the first hard shutdown
11 of the plant occur?

12 A. The first hard -- now, we're talking
13 about -- there is not a -- on the transducers, there's not
14 a first -- when you say hard shutdown, I guess I'm getting
15 confused.

16 Q. What I mean is a hard shutdown, would that
17 normally be where the programmable logic circuits shut
18 down the generation plant or the pumping plant itself?

19 A. Well, again, the transducers themselves
20 where the normal device is used for stopping and starting
21 the plant, or I should say stopping depending on if you're
22 in gen or pump mode, so that would be through the PLC
23 logic, and it would just be a standard shutdown.

24 Q. Okay. For the Warrick probes, would that
25 be a standard shutdown or more hard shutdown?

1 A. That would be, yeah, an emergency shutdown.

2 Q. So the first place where there's an actual

3 hard or emergency shutdown --

4 A. Uh-huh.

5 Q. -- is at the Warrick probe level?

6 A. Correct.

7 Q. All right. Given that the monitors or the

8 probes were offline and had moved a certain amount out of

9 sync from where they were placed, the piezometers were

10 reading incorrectly?

11 A. At what time?

12 Q. At any time after they had moved in

13 their -- in their piping down the sides of the reservoir.

14 A. I'm assuming.

15 Q. But those levels at that point would not

16 have caused an emergency shutdown?

17 A. The levels? I'm losing you here.

18 Q. The alarms that might come from this would

19 not have caused a hard shutdown?

20 A. The alarms from the Warrick problems?

21 Q. No. The piezometers. I'm sorry.

22 A. There really weren't -- there were no

23 alarms associated with the piezometers.

24 Q. Okay. Going to around November/December

25 2004 --

1 A. Okay.

2 Q. -- there were hard or emergency shutdowns
3 that were occurring that you were aware of from some of
4 the e-mails?

5 A. Correct.

6 Q. And that hard shutdown was -- it had
7 occurred?

8 A. Uh-huh.

9 Q. And then what, the plant operators had
10 contacted you or Mr. Zamberlan about that?

11 A. On the high level shutdown?

12 Q. I believe at that point they were the low
13 level shutdowns?

14 A. The low level shutdown, I'm not -- I wasn't
15 really involved in that as far as who was contacted once
16 they did shut down.

17 Q. You were -- you were aware from the e-mails
18 that the Warrick probes had been taken offline?

19 A. Yes.

20 Q. Who had the ability to take the Warrick
21 probes offline and out of the PLC circuit?

22 A. Who had the ability?

23 Q. Yes.

24 A. Well, you would have to know the software
25 to do that, and so Tony was the one that was basically

1 trained in the software, so I would assume Tony.

2 Q. Who was Tony --

3 A. Tony Zamberlan.

4 Q. -- training?

5 A. Oh, I'm sorry.

6 Q. Who was he training, do you know?

7 A. He did train the plant personnel on the use

8 of the software, so who, what individuals, I'm not quite

9 sure, but I know he did train some techs in the software.

10 Q. And so from the e-mails that you received,

11 you know that some of the plant personnel did take the

12 Warrick probes offline at that time?

13 A. No. No, I don't know that.

14 Q. That someone took them offline?

15 A. That somebody took them offline.

16 Q. And it would be logical to assume that the

17 plant personnel had the capability to do that from their

18 training of Mr. Zamberlan?

19 A. I can't say that.

20 Q. Going back to the overtopping time in

21 September of 2005, at that point there was no emergency

22 shutdown, correct?

23 A. At the time of the overtopping, there was

24 emergency shutdown, but it was -- the probes were too

25 high.

1 Q. Explain.

2 A. Well, Warrick -- the high and high Warrick
3 probes were set too high, so they wouldn't -- they didn't
4 sense the overtopping at the time of the --

5 Q. So what caused the emergency shutdown?

6 A. Are you saying at the time of the breach,
7 correct?

8 Q. No. No. I'm sorry. Back in September --

9 A. Oh, I'm sorry.

10 Q. -- at the overtopping, there was an
11 overtopping due to the wave action.

12 A. Oh.

13 Q. That one. I'm sorry.

14 A. So why didn't we get a --

15 Q. Was there a hard or an emergency shutdown
16 at that point?

17 A. There was not, that I am aware of.

18 Q. Could that have been because the Warrick
19 probes were too high?

20 A. Yes.

21 Q. Could that have been because the Warrick
22 probes were taken offline?

23 A. As far as -- no. I mean, no. They were in
24 service, so I mean, they were -- logic-wise and powered,
25 everything was in working order, if they had been set at

1 the right level.

2 Q. Do you know for sure that they were online
3 at that point?

4 A. No. I cannot say that for sure.

5 MS. BAKER: I have no further questions.

6 JUDGE DALE: DNR?

7 MR. SCHAEFER: Thank you, Judge.

8 CROSS-EXAMINATION BY MR. SCHAEFER:

9 Q. Mr. Pierie, my name is Kurt Schaefer. I
10 represent the Department of Natural Resources.

11 From the time that you started your
12 employment with Ameren, you were employed initially by
13 Ameren Services; is that correct?

14 A. Correct.

15 Q. And then at what point did you leave
16 employment with Ameren Services?

17 A. I want to say October of '05.

18 Q. Of '05?

19 A. (Witness nodded.)

20 Q. Okay. So what month did you start? Do you
21 remember what month you started with Ameren?

22 A. January of '02.

23 Q. January of '02 through October of '05, you
24 were with Ameren Services?

25 A. Correct.

1 Q. And Ameren Services, that's like the
2 repairman arm of Ameren, isn't it?

3 A. The repairman arm?

4 Q. Isn't Ameren Services, aren't you the guys
5 that the other plants call when they need a project done
6 or they need something repaired?

7 A. Yeah. We're basically responsible for
8 designing and engineering and installing the capital
9 improvements for our power plants.

10 Q. So you're not associated specifically with
11 any one plant. You go from plant to plant as those plants
12 need and get approval for projects, correct?

13 A. Correct.

14 Q. And so at some point after you began your
15 employment with Ameren in January of '02, you got involved
16 in a project to put in new controls for the Taum Sauk
17 upper reservoir, correct?

18 A. Well, for the whole plant.

19 Q. Good correction. That would be controls
20 both for the upper and the lower reservoir?

21 A. Correct.

22 Q. How long after you started in 2002 did you
23 become aware that you were going to be involved in that
24 project?

25 A. I can't actually answer that. Sometime in

1 '02, though.

2 Q. Okay. But it's fair to say at some point
3 you got involved in the project of putting in the new
4 controls?

5 A. Well, it was from kind of saying, hey, we
6 have this project that we'd like you to start looking at,
7 and, you know, but -- so it was on my plate, and they
8 said, we're not sure when we're going to do it. So I was
9 made aware of the project. I did not start investigating
10 the project to see exactly what was entailed in the
11 project.

12 Q. And then at some point an outage was
13 scheduled at the plant in order to implement both the new
14 controls and some other projects as well, correct?

15 A. Correct.

16 Q. And when was that outage?

17 A. That would have been fall of '04.

18 Q. Do you recall exactly what month in '04
19 that started?

20 A. I do believe September.

21 Q. And that's actually when the plant went
22 offline, in September of '04?

23 A. Correct.

24 Q. So in September of '04 when the plant goes
25 offline, you were involved in the project of installing

1 new controls in the upper reservoir and lower reservoir,
2 correct?

3 A. And main plant.

4 Q. Specifically what were your
5 responsibilities in carrying out that project?

6 A. Okay. Well, Tony had the majority of the
7 responsibility because he -- again, he was manning the
8 project from May of that -- of '04, and as I came in as
9 the outage began was kind of a support role, just whatever
10 he needed for me to do to get the project done in time.

11 Q. Tony Zamberlan was an outside contractor,
12 correct?

13 A. Correct.

14 Q. So who did he -- who -- first of all, who
15 was in charge of the project, the control aspect of the
16 project?

17 A. Tony Zamberlan.

18 Q. Who at Ameren was responsible for the
19 control aspect of the project?

20 A. That would be me.

21 Q. And so it's fair to say that you are the
22 Ameren employee that was responsible for the project, and
23 that Tony Zamberlan as the outside contractor reported to
24 you, correctly?

25 A. Correct.

1 Q. I'm sorry. Is that correct?

2 A. Correct.

3 Q. Now, I believe -- I can't remember the
4 terminology that was used. Were you the project
5 coordinator, or what was your exact title in relation to
6 that project of putting those controls in?

7 A. Well, I would be called the project
8 engineer.

9 Q. You were the project engineer. And as the
10 project engineer for installing the controls, what were
11 your responsibilities?

12 A. Well, again, it varies from project to
13 project.

14 Q. I'm specifically asking about installing
15 the controls on the upper reservoir in September --
16 starting in September of '04.

17 A. Okay. Basically designing the construction
18 drawings to install the end devices, and for checking them
19 out.

20 Q. And I believe you testified you were
21 involved in designing what the control system was going to
22 be?

23 A. I was responsible for as far as the upper
24 reservoir was concerned. Basically the devices were
25 selected, so now it was just a matter of wiring the

1 devices to the PLC. So that was kind of what my
2 responsibility was for the upper controls.

3 Q. Okay. Those devices that you're referring
4 to, that's the low and the low-low and the high and
5 high-high Warrick probes, correct?

6 A. Correct.

7 Q. And three piezometers?

8 A. Correct.

9 Q. If I use the term pressure transducer, is
10 that synonymous with piezometer?

11 A. Yes.

12 Q. So at the time that the plant was shut down
13 and you were involved in the project, I take it what
14 you're saying is that those controls, the piezometers, the
15 Warrick probes, those had already been chosen, correct?

16 A. Correct.

17 Q. Did you understand at that point, let's say
18 in September of '04, what those devices were?

19 A. In September of '04?

20 Q. Uh-huh. When the project started and the
21 plant went offline.

22 A. I do believe Tony selected the pressure
23 transducer sometime in September. There's some e-mails
24 referring to it. As far as putting in -- the Warrick
25 probes were already at the low end before. That was the

1 original design. They had the float system in at the
2 upper end for upper level protection. They pulled that
3 out basically to install the liner. So we went with that,
4 put the Warrick probes on the high end. And so at that
5 time, I think middle of September, we procured the Warrick
6 probes.

7 Q. Prior to this project, and let's just say
8 September of 2004, had you ever worked with pressure
9 transducers or piezometers before?

10 A. This type?

11 Q. Yes.

12 A. No.

13 Q. And had you ever worked with Warrick probes
14 before?

15 A. I don't believe so.

16 Q. At the time that you were the project
17 engineer for this project installing the piezometers and
18 the Warrick probes, did you know what those devices were
19 supposed to do?

20 A. Sure.

21 Q. How did you know what they were supposed to
22 do?

23 A. Just from reading the manufacturer's
24 literature on them.

25 Q. So you actually had manufacturer's

1 literature for the Warrick probes and for the
2 piezometers --

3 A. Uh-huh.

4 Q. -- at the time that you were the project
5 engineer?

6 A. Uh-huh.

7 Q. Where's that information today, do you
8 know?

9 A. I can get it for you. I don't have it with
10 me.

11 Q. That's okay. But you know it still exists?

12 A. Uh-huh.

13 Q. And was it your understanding that the
14 Warrick probes were devices that were used to register
15 basically some form of electrical current flowing through
16 them through the water?

17 A. Correct.

18 Q. And so you knew at that time, in September
19 of '04, that the high and the high-high Warrick probes had
20 to come in contact with water and that, in addition to the
21 water, they had to pick up the electrical current from the
22 reference probe in order to be triggered and make a
23 circuit; is that correct?

24 A. Correct.

25 Q. Now, I believe you testified that you were

1 responsible for setting the levels, at least initially, on
2 the high and the high-high probes, correct?

3 A. Correct.

4 Q. In order to do your job and safely set
5 those probes, what information did you have to have to
6 know where to set the probes?

7 A. Well, that's a good question. I -- I don't
8 know where I got the elevation, the 1596 and 1596.2 to set
9 these high and high probes. I don't know if it was from
10 the documentation, from the original documentation, or if
11 it was verbally told to me from Rick Cooper. I can't
12 answer that question.

13 Q. Okay. You jumped ahead of me there. Let's
14 step back a little bit.

15 A. Okay.

16 Q. In order to do your job as the project
17 engineer installing the high and the high-high Warrick
18 probes, you first had to have an accurate elevation of the
19 top of the wall, the parapet wall where you're going to
20 attach them, correct?

21 A. Yes.

22 Q. And, in fact, in approximately November or
23 so, you got those elevations, didn't you?

24 A. Correct.

25 Q. In fact, that was Mr. Bluemner who did a

1 survey for you and gave you an elevation of 1598 for the
2 top of the parapet wall where the box was going to be
3 where you were going to install the controls, correct?

4 A. Correct.

5 Q. And at the same time, Mr. Bluemner told you
6 that he had surveyed a low spot at panel 72 which the
7 highest elevation was 1596.9, correct?

8 A. Okay.

9 Q. Is that correct?

10 A. Correct.

11 Q. So it's fair to say that in November of
12 2004, you knew the top of the parapet wall was 1598 where
13 the box was, correct?

14 A. Correct.

15 Q. And you knew that there was a low spot on
16 the wall at panel 72 at 1596.9, correct?

17 A. Correct.

18 Q. Now, at some point you went ahead and you
19 installed the high and the high-high probes, correct?

20 A. Correct.

21 Q. And you set those levels, you set the high
22 at 1596, and you set the high-high at 1596.2, correct?

23 A. Correct.

24 Q. And this gets back to what you were saying
25 just a minute ago. Where did you get those elevations to

1 program those probes at that level?

2 A. I do not know.

3 Q. Did somebody just tell you that?

4 A. I honestly do not remember where I got
5 those levels.

6 Q. Okay. If today I wanted to go find the
7 documentation of how you got that information, where would
8 I find that documentation?

9 A. Well, Steve Bluemner has his field notes
10 that says where we're setting the reservoir level or what
11 the high and the high-high probes are at. I have my
12 documentation that says where we're setting the high and
13 the high-high probe at, and that's -- you know, was there
14 a -- in essence, that's all I have.

15 Q. But you had documentation with those
16 numbers?

17 A. Yes.

18 Q. Do you know where that documentation is
19 today?

20 A. Yes.

21 Q. Where is it?

22 A. I've got it in a folder in my office, and
23 I'm sure it's part of the evidence in one of these
24 folders.

25 Q. Okay.

1 A. As far as Steve Bluemner's field notes.

2 Q. Let me ask you this: Are you familiar with
3 the Rizzo report, which is a report that was prepared by
4 Ameren by Rizzo Engineering?

5 A. No, I'm not.

6 Q. So you haven't seen that report?

7 A. No.

8 Q. Are you familiar with the FERC staff report
9 that was done by FERC staff in response to their looking
10 into the breach, the breach on December 14th of '05?

11 A. The chronology?

12 Q. The next report after Rizzo was the FERC
13 Staff report, yes.

14 A. Which is the -- what I refer to as the
15 chronology?

16 Q. Basically, yes.

17 A. Yes.

18 Q. You have seen that?

19 A. Yes.

20 Q. And then the last thing to come out from
21 FERC was a FERC independent panel report. Have you seen
22 that?

23 A. That I have not seen.

24 Q. And the reason I ask you this now is, were
25 you ever interviewed by anyone at FERC?

1 A. I was.

2 Q. Okay. Were you interviewed under oath?

3 A. I was.

4 Q. Did you supply them documentation?

5 A. No, I don't think I did.

6 Q. Now, at the time in the fall of '04 when
7 you were installing these, and we've seen some diagrams of
8 what that box looks like, can you explain to me -- and I'm
9 trying to see if I want to venture into the technology of
10 writing on the Smartboard. It may be better just to get
11 an explanation. Well, let's do this. Let's use the
12 Smartboard. We'll give it a try.

13 MR. SCHAEFER: Judge, is that okay?

14 JUDGE DALE: Yes. And it's very easy.
15 Just pick up one of those pens and start to draw.

16 BY MR. SCHAEFER:

17 Q. Now, Mr. Pierie, in November of 2004 --
18 first let me ask you, when -- what was the date that you
19 actually set the high and the high-high probes?

20 A. I don't know.

21 Q. You don't know?

22 A. No.

23 Q. Is it fair to say it was sometime in
24 November or December of 2004?

25 A. Wasn't in December. It would have been

1 November.

2 Q. November?

3 A. Uh-huh.

4 Q. And at that time, tell me physically what
5 did it look like. You had a top of a parapet wall, which
6 you knew was 1598, and then is there a metal box right
7 above that?

8 A. Yeah. Stainless steel box put on top of
9 the wall.

10 Q. Who actually mounted that box on the wall?

11 A. Sachs Electric.

12 Q. Sachs Electric. Okay. And then are you
13 familiar that there are four black pipes that run down
14 through the box?

15 A. Uh-huh.

16 Q. Come out of the bottom of the box, go down
17 the side of the reservoir down to some elevation in the
18 reservoir, correct?

19 A. Correct.

20 Q. Now, when you set those probes, I take it
21 the box was already in place?

22 A. Correct.

23 Q. The four pipes were coming out, correct?

24 A. Correct.

25 Q. What was coming up through the pipes and

1 going into the box?

2 A. What was coming up through the pipes?

3 Q. Uh-huh. Let me restate that. Let me

4 restate that. If you will, we'll give this a try. Can

5 you please draw for me a picture as you're looking inside

6 the box?

7 A. Inside the box?

8 Q. Right. So this would be from your

9 perspective standing on the outside of the parapet wall

10 looking in.

11 A. And you want to see the pipes?

12 Q. Right.

13 A. Okay.

14 Q. So you've drawn a box, and you've drawn --

15 those are the four pipes sticking up into the box --

16 A. Right.

17 Q. -- correct?

18 A. Correct.

19 Q. If you could, could you draw a vertical

20 line for me -- or a horizontal line on where the top of

21 the parapet wall would be?

22 A. These are standoffs.

23 Q. And then the pipes, they would continue

24 down --

25 A. Yeah.

1 Q. -- into the reservoir, correct?

2 A. Uh-huh.

3 Q. Now, the two pipes on the right, those were

4 just empty pipes, correct?

5 A. Correct.

6 Q. And the pipe on the left --

7 A. Yeah.

8 Q. -- contained -- well, what did it contain?

9 A. That became the pressure transducers.

10 Q. Okay. If you would, for the benefit of the

11 Commission, explain to us where these wires come from and

12 where they go.

13 A. Okay. The wires come from the control

14 house.

15 Q. Okay. How do they come from the control

16 house to that box?

17 A. Basically through a conduit system.

18 Q. Okay. And where does the conduit come out?

19 A. Oh, boy. The conduits came adjacent to --

20 from underneath, came adjacent to the -- I'll just go over

21 here. That's our control cabinet.

22 Q. Can you speak up just a little bit so the

23 court reporter can hear what you're saying?

24 A. You bet. This is the control cabinet where

25 the PLC and the Warrick probes were situated, so basically

1 through here (indicating).

2 Q. Okay. So what all ran from the control
3 house to the box?

4 A. From the control house to the box were your
5 Warrick probes and transducers.

6 Q. Okay. So the Warrick probes themselves,
7 there were actually five, correct?

8 A. Correct.

9 Q. There were a high and a high-high?

10 A. Correct.

11 Q. A low and a low-low and a reference probe,
12 correct?

13 A. Correct.

14 Q. Okay. So those five lines are coming out
15 of the -- from the PLC going into the box, and then there
16 are three lines for each one of the three transducers,
17 correct?

18 A. Correct.

19 Q. So show me physically, if you can draw on
20 there, they come out of the conduit and where do they go?
21 And let's use -- for an example, let's use the high and
22 the high-high.

23 A. There's separate conduits for the
24 transducers and then there's a separate conduit for the
25 Warricks.

1 Q. Okay.

2 A. Okay. Let's just say the wires were in
3 here for the Warricks. The wires were in here for the --
4 for the transducers.

5 Q. Mr. Pierie, if you can speak up just a
6 little more.

7 A. Okay.

8 Q. So can you draw on there -- let's use the
9 high and the high-high as examples. Where would they come
10 out of the conduit and how would they attach into the box?

11 A. They come out of the conduit here and they
12 came up and they were fastened to an I-bolt that was up
13 here. So they kind of slid through the I-bolt, and then
14 down into the conduit. And you had two of them. So there
15 would be another one basically. Again, so you had an
16 I-bolt connected with what they call Kellum's grip and
17 then a wire tie.

18 Q. And so explain how was the wire tie
19 actually holding those in place?

20 A. The wire tie was holding using -- was
21 fastened to the -- actually, there was an I-bolt and then
22 a hasp that was through the -- I'll do a detail here.
23 There was an I-bolt and then a hasp, quarter hasp like
24 that, and then the wire slipped through there, and they
25 would fasten the wire tie here to the hasp, and then there

1 was a Kellum's grip also that was fastened to the hasp,
2 and it's basically like those Chinese finger connectors.

3 Q. If you backed them up a little bit, you
4 could slide it up in there, correct?

5 A. If you what now?

6 Q. The Kellum grip -- and I think you're the
7 second person to describe it this way -- it's like a party
8 favor which has been referred to as a finger handcuff.
9 You stick your fingers in both ends, and the more pressure
10 you exert pulling out with both fingers, the tighter it
11 gets, correct?

12 A. Very good.

13 Q. But if you want to release the pressure,
14 you simply push your fingers in, and it softens the thing
15 up and then you can pull your fingers out, correct?

16 A. Well, that's really not how that's
17 designed. There's a through rod that basically tightens
18 up the mesh that's around the wire. You have to pull that
19 rod out of there to remove it.

20 Q. Okay. But the concept is, I take it that
21 the Kellum grip is holding the cable as it's going down
22 into the pipe to go into the reservoir?

23 A. Correct.

24 Q. So in other words, the more pressure that
25 would be on that pulling down, arguably the tighter the

1 Kellum grip would get?

2 A. Correct.

3 Q. But equally so, could you simply push up on

4 it and push the wire back up through the Kellum grip?

5 A. No.

6 Q. Did you ever try and do that?

7 A. No.

8 Q. How do you know that's not possible?

9 A. Because that's not how it's designed.

10 Q. Okay. Now, on the Kellum grip, the Kellum

11 grip is actually made out of wire, correct?

12 A. Correct.

13 Q. And there's a little tag on that wire,

14 isn't there?

15 A. I don't recall that, but there could be.

16 Q. Okay. Who designed the placement of the

17 Kellum grip?

18 A. Who installed the Kellum grip?

19 Q. Who designed it, first of all?

20 A. Sachs Electric installed it.

21 Q. Installed it. Who --

22 A. You're saying physically designed the

23 Kellum grip?

24 Q. Yes.

25 A. I have no idea. The manufacturer --

1 Q. Not the Kellum grip itself. Let me ask you
2 a different way. It was a bad question. Who decided that
3 a Kellum grip was going to be used to hold the wires in
4 place so they --

5 A. Sachs Electric.

6 Q. And who actually installed it, Sachs
7 Electric?

8 A. Yes.

9 Q. On the Kellum grips that were actually on
10 this box, wasn't there a little sticker with a barcode?

11 A. I don't recall that.

12 Q. You don't recall that?

13 A. No.

14 Q. You don't recall seeing a tab on each one
15 of those Kellum grips with a barcode?

16 A. No, I don't.

17 Q. What would be the point of having a barcode
18 on that Kellum grip?

19 A. A UPC code? For inventory.

20 Q. I'm asking you, what would be the point?

21 A. That's the only thing I could think of why
22 it would be on there.

23 Q. Was there any protocol at Ameren that
24 actually if you were going to adjust the Kellum grip, you
25 had to somehow scan a barcode?

1 A. No. No. That was again just to -- if
2 there was one on there, I'm sure it was just for the
3 manufacturer and how they keep for pricing.

4 Q. Okay. So just a price tag?

5 A. I would assume, or for an ID number for --
6 for the device.

7 Q. That's all for the diagram right now, but
8 I'm going to leave that up so we can come back to it.

9 Now, I believe that you testified that at
10 the time that you set those probes at 1596 and 1596.2,
11 that being the high and the high-high, you don't know
12 where you got those numbers, correct?

13 A. I do not.

14 Q. When you were involved in this project,
15 were you down there for the whole time that the plant was
16 offline?

17 A. I was. I'd say 95 percent of the time.

18 Q. So you were there at the plant every day?

19 A. Pretty much.

20 Q. And I believe you said that for Ameren
21 Services you were the project engineer, correct?

22 A. Correct.

23 Q. And Tony Zamberlan was an outside
24 contractor?

25 A. Correct.

1 Q. Who at the plant was assigned as part of
2 this project to work with you on those -- on installing
3 those controls?

4 A. Well, they weren't part of the
5 installation. They were -- we'd have review meetings once
6 a week and drag in -- or Jeff Scott and Rick Cooper would
7 be involved in the meetings. Kind of discuss where we
8 were as far as progress and what needed to be done.

9 Q. And who -- tell me again, who is Jeff
10 Scott?

11 A. Jeff Scott is the -- I think they -- I want
12 to say he's plant engineer, but I think he's production
13 manager I think maybe his actual title was. But he had
14 some engineering responsibilities as far as every day
15 workings of the plant.

16 Q. Is Jeff Scott an engineer?

17 A. Yes, he is.

18 Q. Is there a Robert Scott also?

19 A. There is.

20 Q. Who is Robert Scott?

21 A. Bob Scott is a plant technician.

22 Q. There at the Taum Sauk plant?

23 A. Yes, he is.

24 Q. So do you recall, at what point did you get
25 finished with your part of the project and leave? Was

1 that in December?

2 A. Once they started pumping back, I had other
3 responsibilities at Lavity plant, and so I'd left shortly
4 after -- I don't know the exact date, but shortly after
5 they started filling the reservoir.

6 Q. Do you recall, was that in November or
7 December?

8 A. That would have been in November.

9 Q. November. Okay. And then I believe under
10 earlier questioning by Mr. Thompson you were shown
11 Exhibit 7, which you may still have in front of you.
12 That's an e-mail that you had received from Tony Zamberlan
13 on December 2nd. Do you recall that?

14 A. Yes, I do.

15 Q. So you were no longer at the plant then by
16 December 2nd?

17 A. I was not.

18 Q. And in that e-mail, Mr. Zamberlan informs
19 you that he's pulling the probes up to 1596.5; is that
20 correct?

21 A. Correct.

22 Q. And at this point you already knew that the
23 top of the parapet wall was 1598 at the box, and you knew
24 that the low point was 1596.9, correct?

25 A. At this point, I can't say that.

1 Q. Would it surprise you if Mr. Bluemner
2 testified that when he did that survey in November or
3 December of '04, that he told you that panel 72 was at
4 1596.9?

5 A. No. What I'm saying is after the month has
6 gone by or two weeks, three weeks, on this date did I
7 remember these elevations? I can't honestly say that I
8 did.

9 Q. But you do agree that you knew -- you knew
10 the elevations, the 1598 and the low point at 72 at
11 1596.9, you knew those before Mr. Zamberlan sent you that
12 e-mail on December 2nd, correct?

13 A. Correct.

14 Q. But you just don't recall if you remember?

15 A. At the time of this e-mail when I got it,
16 no, I can't say that.

17 Q. Okay. Are you on any medication, or were
18 you at the time, that affected your memory or anything
19 like that?

20 A. No.

21 Q. Now, after -- I take it at some point,
22 then, you left the project. You said you weren't there on
23 December 2nd. When was the next time you were back down
24 there at Taum Sauk?

25 A. I don't recall. I know I was there

1 sometime in mid December, but what that actual date was --

2 Q. Why were you back there in mid December?

3 A. We were having an issue with the low water
4 probe.

5 Q. Do you recall what that issue was?

6 A. It was -- it was misoperating.

7 Q. Do you recall, was a problem with that
8 probe identified?

9 A. No. It actually started acting up later.
10 Thought I had it fixed, but we actually ended up replacing
11 it in February. It was a bad relay.

12 Q. Was part of that fix to wire the low and
13 the low-low probes from parallel to series?

14 A. No. Well, no, it wasn't. We replaced the
15 relay and that took care of it. They never had any
16 problems after that.

17 Q. And you understand the low and the low-low
18 probes, those are only relevant when the plant is in the
19 power generation mode, correct?

20 A. Correct.

21 Q. Because when you're generating power,
22 you're lowering water out of the reservoir, correct?

23 A. Correct.

24 Q. And you need the low and the low-low to
25 give you a warning or shut the system off if the water

1 gets too low?

2 A. Correct.

3 Q. And conversely, the high and the high-high,
4 those are only important when you're in the pump mode
5 because you're pumping water up, and it's supposed to tell
6 you if you get too high, correct?

7 A. That's correct.

8 Q. So other than February of '05, when was the
9 next time that you were back there at Taum Sauk?

10 A. February of '05?

11 Q. I'm sorry. I believe you said it was
12 February of '05 when you were having that problem with the
13 low?

14 A. Well, we were installing some transmitters
15 in the main plant, so that was -- we were doing that
16 through the course of the summer.

17 Q. Of '05?

18 A. Yeah. So I was in and out of there doing
19 that.

20 Q. Okay. Any of these times, February of '05,
21 summer of '05, did you ever go back and check the controls
22 on the box there at the top of the parapet wall?

23 A. To check the controls or check --

24 Q. To check the settings. Let me ask you
25 that.

1 A. In October of --

2 Q. We'll get to that.

3 A. Okay.

4 Q. In February or in the summer of '05, did

5 you ever check to see --

6 A. No.

7 Q. -- where the probes were set?

8 A. Not that I recall.

9 MR. SCHAEFER: I think we're up to
10 Exhibit 20.

11 JUDGE DALE: Yes.

12 (EXHIBIT NO. 20 WAS MARKED FOR
13 IDENTIFICATION.)

14 BY MR. SCHAEFER:

15 Q. Mr. Pierie, were you ever asked to come
16 back -- again, this is prior to December 14th of 2005 when
17 the reservoir breach occurred.

18 A. Okay.

19 Q. At some point before that yet after you had
20 been there in late '04 working on these controls, were you
21 ever asked to come back and look at or adjust the high and
22 the high-high probes?

23 A. No.

24 Q. Okay. At some point, though, during that
25 time frame, did you become aware that there was a problem

1 with the gauge piping that contained the piezometers for
2 the upper reservoir?

3 A. In what time frame?

4 Q. This was after you were at the project, you
5 left the project in late '04, yet before the breach on
6 December 14th of 2005.

7 A. Right. In October, the first week in
8 October.

9 Q. You became aware of what?

10 A. That the gauge piping was coming loose.

11 Q. How did you become aware that the gauge
12 piping was becoming loose?

13 A. Because I was up at the upper reservoir
14 looking at the high and the high-high probe positions and
15 I noticed that the piping was coming loose.

16 Q. Okay. So actually in October of 2005, you
17 were up there looking at the positions of the high and the
18 high-high, correct?

19 A. Correct.

20 Q. And how did you know that the gauge piping
21 had come loose?

22 A. Specifically seeing it.

23 Q. What did you see?

24 A. Seen it coming loose from the unistrut
25 frame.

1 Q. It was bowing, right? The pipes were
2 bowing?

3 A. Yes.

4 Q. And I believe you testified that before
5 this you had never worked with piezometers before,
6 correct?

7 A. I had not.

8 Q. But did you know enough to know that that
9 was a problem, seeing those pipe -- the pipes loose from
10 the side?

11 A. Yes.

12 Q. Now, let's step back just a little bit, I
13 want to hand you an e-mail.

14 JUDGE DALE: This is 20?

15 MR. SCHAEFER: 20.

16 BY MR. SCHAEFER:

17 Q. Mr. Pierie I've handed you what's been
18 marked as Exhibit 20. This is an e-mail from Richard
19 Cooper, who we've already identified as being the plant
20 superintendent at Taum Sauk, correct?

21 A. You handed me 20?

22 Q. Sorry about that. Let me hand you what's
23 been marked as Exhibit 20.

24 A. Thank you.

25 Q. You see this is an e-mail from Richard

1 Cooper?

2 A. Correct.

3 Q. He's the plant superintendent at Taum Sauk,

4 correct?

5 A. Correct.

6 Q. It's dated Tuesday, September 27, 2005,

7 correct?

8 A. Correct.

9 Q. And it's to you, Thomas Pierie, and Chris

10 Hawkins, correct?

11 A. Correct.

12 Q. With a cc to Jeffrey Scott, Steven

13 Bluemner, Robert Ferguson and Warren Witt, correct?

14 A. Correct.

15 Q. Do you recall getting this e-mail from

16 Mr. Cooper?

17 A. I do.

18 Q. First of all, do you know why he sent this

19 to you?

20 A. Because I was involved in the controls

21 upgrade.

22 Q. Is it fair to say that at this point,

23 September 27, 2005, you had not looked at the settings of

24 the high or the high-high probe since you left the project

25 there in November of '04?

1 A. Actually, yes. Correct. Well, when you
2 say look at the settings, I should clarify, because in
3 February of '05, when we replaced that low relay that we
4 were having problems with, we -- we tested the high and
5 the high probes, and at that time there was black -- you
6 know, I had marked the probes with the colored electrical
7 or phase tape, and at that time in February they were
8 marked with black phase tape. That didn't surprise me
9 because I knew they had moved them up. So, now, did I
10 know what the actual settings were? No, I did not.

11 Q. So actually, then, when you were there in
12 February of '05, you saw that somebody had moved the
13 probes from where you originally set them?

14 A. Correct.

15 Q. And tell me, you talked about blue and
16 black phase tape. What is the significance of the color
17 of tape on those probes?

18 A. Well, the significance is when we
19 originally install them, we use a color other than black
20 to mark their location so they would -- if anybody ever
21 moved them, they could put them back in the right location
22 where they should be. And again, in February in '05 when
23 I went out there to do this testing, there was black phase
24 tape now instead of colored phase tape.

25 Q. What was the color code on the high-high

1 probe?

2 A. I don't recall.

3 Q. Wasn't one red and one blue?

4 A. I don't remember.

5 Q. But the significance was that the blue was

6 gone and there was black, is that what you're saying?

7 A. It was changed to black tape. There was

8 black now indicating where the probes were set.

9 Q. Okay. Did you check the elevation setting

10 at that point in February?

11 A. I did not.

12 Q. You did not?

13 A. No.

14 Q. Okay. And based -- could you tell if it

15 was set in the same place it had been set when you had set

16 it in November of '04?

17 A. It had not, because again, you're using

18 black tape, and you could see the color tape further down

19 because it was still in place on the insulation of the

20 wire.

21 Q. Okay. So when you installed it in November

22 of 2004, you used blue tape to show 1596 and 1596.2,

23 correct?

24 A. Again, I don't know what color it was, but

25 if you're telling me that was the color that is showing in

1 the evidence, then okay, blue.

2 Q. Okay. But you used some colored tape?

3 A. Colored tape. It was not black, I guess is
4 what I'm getting at.

5 Q. And then when you checked it in February of
6 '05, you could tell that it had been pulled up?

7 A. Yeah, it had been pulled up.

8 Q. And that you could still see the colored
9 tape that you had put on there in November of '04, but
10 that was no longer showing the elevation. The black tape
11 was now showing the elevation?

12 A. Correct.

13 Q. And tell me, how did the tape work to show
14 the elevation?

15 A. Just from reference on the -- just on the
16 edge of the pipe, on the outer edge of the pipe is lined
17 up with the outside.

18 Q. So, for example, can you show me on the
19 drawing that's up -- let's go ahead and for demonstrative
20 purposes let's just have that marked, I guess, Exhibit 21,
21 which is the electronic drawing that you've made on the
22 Smartboard.

23 On Exhibit 21, if you could show me on the
24 lines that you draw, let's say for the high and the
25 high-high cables, in November of '04, where would the tape

1 have been? It doesn't have to be exact. I'm just trying
2 to get an idea here. Where would the tape be that you put
3 on there?

4 A. Right there (indicating). Now, it's just
5 the regular tape.

6 Q. Just right at the lip of the pipe?

7 A. Correct.

8 Q. So when you came back in February of '05,
9 you found black tape, correct?

10 A. Right at the same location.

11 Q. The black tape was marking the cable at the
12 lip of the pipe?

13 A. Yes.

14 Q. Where was your colored tape?

15 A. Would have been further down here in the
16 box.

17 Q. In the box, because it was pulled up and
18 around the loop, correct?

19 A. Uh-huh.

20 Q. It wasn't farther down in the tube, it was
21 the opposite direction, right?

22 A. Right.

23 Q. But you didn't do any measurement to see
24 how far up it had been pulled?

25 A. I did not.

1 Q. Now, after your time there checking those,
2 the level of those probes in February, had you been back
3 to Taum Sauk before you received this e-mail from
4 Mr. Cooper on September 27th of '05?

5 A. And in that box?

6 Q. Yes.

7 A. Not that I recall.

8 Q. So you may have been to the facility?

9 A. I was definitely at the facility because I
10 was installing transmitters.

11 Q. But you weren't in the box?

12 A. Not that I recall.

13 Q. And if you could, can you read this e-mail
14 for us, please?

15 A. Guys, this last weekend, Sunday, I had a
16 couple of guys here on overtime on the a.m. getting ready
17 for a ceremony we had Monday at the plant.

18 Q. Stop right there. Do you know what that
19 ceremony was?

20 A. I have no idea.

21 Q. Okay. Continue, please.

22 A. The guys also did a walkdown of the plant
23 to make sure everything was okay for us -- everything was
24 okay for us to ignore the plant on Monday.

25 When the guys went on to the -- went up to

1 the upper reservoir, they witnessed what they described as
2 a Niagara Falls at the northwest corner of the reservoir.

3 Q. Okay. Let's stop right there.

4 A. So what Mr. Cooper is saying in his e-mail
5 is some of the guys went down to the reservoir and
6 described what they saw as Niagara Falls, correct?

7 A. Correct.

8 Q. And that would be at the northwest corner
9 of the reservoir?

10 A. I can't say that for sure.

11 Q. Okay.

12 A. Well, it says northwest corner of the
13 reservoir, yeah.

14 Q. And you're familiar with the shape of the
15 reservoir and the directional line of the reservoir?

16 A. Yes.

17 Q. Okay.

18 A. Well, I -- yeah. I get north and south
19 kind of mixed up. The shape I can handle.

20 Q. And I know from the documents we've seen
21 you went down there after the breach occurred on
22 December 14, 2005, correct?

23 A. After?

24 Q. Yes.

25 A. Yes.

1 Q. After. And that breach occurred in the
2 northwest corner of the reservoir, correct?

3 A. Correct.

4 Q. Please keep reading.

5 A. We had some small rocks washed away at the
6 base of the parapet wall which left a trench a foot deep
7 in some areas.

8 Q. Okay. Let me ask you this: Now, I -- do
9 you have any training in dam building or dam operation
10 engineering?

11 A. I do not. Should I continue?

12 Q. Yes, continue.

13 A. Okay. The wave action on the upper
14 reservoir surface was caused by some high winds when Rita
15 was going through the area.

16 Q. Let me stop you right there. And this is
17 something that I believe you've actually mentioned in your
18 testimony, that allegedly there was some wave action at
19 the upper reservoir as a result of Hurricane Rita which
20 came up through the Gulf Coast through Louisiana and then
21 came up through the continental United States, correct?

22 A. Correct.

23 Q. Let me ask you this: Do you have any
24 personal knowledge that there was any wind abnormalities
25 or any higher wind at that time Taum Sauk reservoir as a

1 result of Hurricane Rita?

2 A. After -- can you rephrase the question
3 or --

4 Q. Sure. Let me restate it a different way.
5 In his e-mail to you, Mr. Cooper mentions that there was
6 wave action on the upper reservoir surface caused by some
7 high winds when Rita was going through the area, correct?

8 A. Correct.

9 Q. Is it your understanding that's Hurricane
10 Rita, correct?

11 A. Correct.

12 Q. Do you have any personal knowledge that
13 Hurricane Rita caused any winds at the upper reservoir
14 that were any different than winds that that facility had
15 any other day of the week or month?

16 A. I do not.

17 Q. In fact, have you looked at the FERC
18 independent panel report, the exhibits to that?

19 A. I have not.

20 Q. Have you seen there's a comparison from the
21 alleged date of the Hurricane Rita winds to the actual
22 December 14th breach date and there's really no difference
23 in the wind speeds at all on those two days?

24 A. I wasn't aware of that.

25 Q. Would that surprise you?

1 A. Yes.

2 Q. As you sit here today, you don't have any
3 personal knowledge that Hurricane Rita caused any
4 abnormality high winds at the upper reservoir, do you?

5 A. I can't respond to that.

6 Q. Hang on one second. Okay. If you could
7 read on the next sentence, which starts the immediate
8 action.

9 A. The immediate action taken was to put the
10 units on in generate to lower the upper reservoir level to
11 stop the falls.

12 Q. So is it your understanding what Mr. Cooper
13 is saying there is, that some guys went down to the
14 reservoir. Water was coming over the top of the northwest
15 corner, and so they turned on the generation units to
16 lower the level; is that your understanding?

17 A. Correct. Monday we didn't get a chance to
18 look at things due to the -- due to the all-day ceremony.
19 And anyway, load dispatch took the units off prematurely
20 at 1595 elevation, I guess due to load coming in on the
21 system.

22 Q. Let me ask you, what does that mean to you,
23 load dispatch took the units off prematurely at 1595?

24 A. Well, it sounded like they didn't need any
25 of the demand, so they took the units -- actually, they

1 were pumping back up, so I guess they needed the load. So
2 that's why they took the -- because they were pumping up.
3 That's why they probably took the pumps off because they
4 needed the extra electricity.

5 Q. So it's your understanding that they went
6 up to 1595?

7 A. Uh-huh.

8 Q. And then started going back down again?

9 A. No. I think they probably just stayed
10 there, would be my guess.

11 Q. Okay. If you could keep reading the next
12 paragraph.

13 A. This morning Jeff and I went up to the
14 upper reservoir when the controls indicated we were at
15 1596 elevation. There were no waves on the surface, but
16 we could see a couple of wet areas on the west side of the
17 reservoir parapet wall.

18 Q. Stop right there. So in this e-mail
19 Mr. Cooper is saying that he and Jeff -- who's your
20 understanding of who Jeff is?

21 A. Jeff is the, again, the plant engineer, or
22 he basically supervises the union -- or the, yeah, the
23 technicians also.

24 Q. So that would be Jeff Scott?

25 A. Correct.

1 Q. And Jeff Scott, is he actually the guy at
2 the plant that's responsible for the controls?

3 A. Well, he assists. I mean, he's kind of
4 do-all. He runs the uni guys, and he does take care of
5 engineering duties at the plant.

6 Q. So he's kind of a jack of all trades at the
7 plant?

8 A. I would say that's true.

9 Q. And according to Mr. Cooper, there were no
10 waves on this Monday morning, correct?

11 A. Correct.

12 Q. But they could see that water had come over
13 the west side of the parapet walls; is that correct?

14 A. That's correct.

15 Q. Now, you're familiar that the parapet walls
16 are 60 foot long, 10 foot tall concrete sections, correct?

17 A. Okay. I didn't know how wide they were,
18 but I knew how high they were.

19 Q. And they're all numbered, correct?

20 A. Yes.

21 Q. Remember we talked about the fact that
22 Mr. Bluemner had told you that panel 72 was the low point
23 that he spotted at 1596.9, I believe, right?

24 A. Okay.

25 Q. Do you know -- panel 72's on the west side

1 of the reservoir, isn't it?

2 A. I don't know.

3 Q. Okay.

4 A. I mean, at this stage, I do not know.

5 Q. Do you have any reason to disagree with the
6 fact that --

7 A. No.

8 Q. -- panel 72 was right there on the west
9 side of the reservoir?

10 A. If that's what you're telling me.

11 Q. He said, there were no waves on the
12 surface, but we could see a couple of wet areas on the
13 west side of the parapet wall. If you could keep reading
14 after that, please. We pulled the vehicle.

15 A. Okay. We pulled the vehicle up to these
16 wet areas and climbed up on top of the vehicle to see the
17 water level. We were surprised to see the level within
18 four inches of the top of the wall. It was above the top
19 batten strip holding the vinyl on. This level is at least
20 six inches higher than what I remember from when we first
21 came back from the controls upgrade last fall.

22 Q. Right there, this is -- this statement that
23 this is six inches higher than what he remembered when we
24 first came from the control upgrades last fall, do you
25 know what he's talking about there?

1 A. Well, he's telling you that it's six inches
2 higher than he remembers. Remember the e-mail that we
3 went over earlier today, he did a survey of the whole
4 reservoir. He kind of gave some numbers of where the
5 levels were in relationship to the bandstrip.

6 Q. I believe in that e-mail, didn't he say
7 that the operation level at that point was 1596?

8 A. Yes.

9 Q. And that was the big thumbs up e-mail right
10 after you brought the thing back online saying everything
11 looks good at 1596, correct?

12 A. Uh-huh.

13 Q. But in this e-mail he's saying, right now
14 where I'm seeing, it is at least six inches higher than
15 where it was when we gave the thumbs up, correct?

16 A. Correct. Okay. Jeff looked at the level
17 transmitters when we got back to the plant and found one
18 of the three readings a foot higher than the other two.

19 Q. Let's stop right there.

20 A. Okay.

21 Q. Now, at this point, it's Jeff Scott who's
22 looking at the information from the PLC, I take it, for
23 the level transmitters, correct?

24 A. Correct.

25 Q. And I guess was he the guy at the plant

1 that was responsible for that?

2 A. Well, I mean, he's -- you know, if they're
3 having problems at the plant, yeah, Jeff looks into them,
4 tries to straighten them out.

5 Q. But you're still the guy that's the project
6 engineer on all these controls, correct?

7 A. Well, this has already been turned over to
8 the plant. Now it's the plant's responsibility.

9 Q. But you continue to be involved, such as
10 when you came down there in February and --

11 A. I was kind of asking for support, or
12 Jeff -- or excuse me -- Rick was.

13 Q. He was asking for support in February?

14 A. From this e-mail.

15 Q. Okay. Fair enough. So if you -- okay.
16 Jeff looked at the level transmitters when we got to the
17 plant and found one of the three readings a foot higher
18 than the other two. Is that what it says?

19 A. Uh-huh.

20 Q. And again, those transmitters that we're
21 talking about, those are the three piezometers, correct?

22 A. Correct.

23 Q. Can you read the next sentence, please?

24 A. When he took that one transmitter out of
25 the average, we now read about 1596.2.

1 Q. Let's stop right there. Do you know why
2 Mr. Scott, rather than paying heed to what that
3 transmitter was telling him, would simply just cut it out
4 of the equation?

5 A. Why he -- I can't answer that. I don't
6 know what Jeff was thinking when he did what he did.

7 Q. Are you aware of whether or not that
8 transmitter was basically taken out of the information
9 that was being provided to the PLC?

10 A. I have no idea.

11 Q. So you don't know that actually it was
12 taken out and then from then on the system was simply
13 relying on two piezometers?

14 A. I don't believe that's the case. I think
15 he put it back in, but I can't say for 100 percent sure.

16 Q. And do you have any way of knowing -- and I
17 realize you're just looking at this e-mail Mr. Cooper sent
18 you. Do you have any way of knowing why he would take the
19 information coming from that piezometer out of the
20 equation?

21 A. Because it was reading wrong.

22 Q. And as you sit here today, can you tell me,
23 how do you know that piezometer was reading wrong?

24 A. I don't know that it was reading wrong. I
25 wasn't there to tell you that it was reading wrong.

1 Q. In fact, that piezometer was probably
2 reading correct, wasn't it?

3 A. I can't answer that. I don't know.

4 Q. The next sentence, when he took that one
5 transmitter out of the average, we now read about 1596.2.

6 A. Yes.

7 Q. Does that cause you to believe that
8 basically what he did, he took the information coming from
9 that transmitter out of the equation and then programmed
10 the logic for the other two into the PLC and they averaged
11 it, or how did that work?

12 A. How it originally was set up?

13 Q. Yeah. How was it set up?

14 A. They would look at all three transmitters
15 and take the average of the three.

16 Q. Right. And that's the program that --
17 that's the way the system was installed when you put it
18 in, correct?

19 A. When Tony put it in, yes.

20 Q. So in other words, you've got three --
21 you've got three piezometers, and you're taking an average
22 of the three?

23 A. Correct.

24 Q. But when you take one off, then you've only
25 got two, and you're averaging the two, correct?

1 A. Correct.

2 Q. Can you continue reading, please?

3 A. I still feel we are about another .4 feet

4 higher than that. Jeff then added a .4 adjustment to the

5 two remaining transmitters average making the current

6 level now read 1996.6.

7 Q. Okay. Let me stop you right there. Where

8 he says, I still feel we are about another .4 feet higher

9 than that, what do you understand that to mean?

10 A. That it's reading .4 higher than what he

11 thinks the level should be.

12 Q. Reading .4 higher or .4 lower?

13 A. Well, I mean, if he thinks they're leveled

14 at 1996.6, then you're right, he's lower.

15 Q. He still thinks that the reading that's

16 coming off it is 4/10 of a foot lower on the reading than

17 what it truly is in reality, correct?

18 A. Correct.

19 Q. Then it says, Jeff then added a .4

20 adjustment to the two remaining transmitters --

21 transmitter average making the current level now read

22 1996.6, correct?

23 A. Correct.

24 Q. First of all, how would you make a .4 --

25 and I'm assuming, do you understand it to mean 4/10 of a

1 foot?

2 A. Very good.

3 Q. And how many inches is that?

4 A. Let's see. About five.

5 Q. Close enough. How would you actually
6 program in to the system a false five-inch margin?

7 A. There's a way in going into the PLC program
8 to add adjustments to the readings.

9 Q. Okay. So rather than try and calibrate
10 what the true level of the water was to what -- what the
11 gauges were saying, rather than do that, it appears that
12 Mr. Scott actually put into the program some information
13 that would make the system think that it had more water
14 than it actually had; is that correct? Is that fair to
15 say?

16 MS. HOUSE: Your Honor, I would just object
17 to the question. Obviously Mr. Pierie can give his
18 observation or understanding of what he read the e-mail to
19 be, but to have him opine on what Mr. Scott thought he was
20 doing or was thinking about at the time that he was down
21 there I think is unfair, and Mr. Pierie is not in a
22 position to say what Mr. Scott was thinking.

23 MR. SCHAEFER: May I respond, your Honor?

24 JUDGE DALE: Yes.

25 MR. SCHAEFER: I think the fact that

1 Mr. Pierie was responsible for these controls, and given
2 the timing of this and the severity of the issue, and the
3 fact that he was a recipient of this e-mail, it's
4 extremely critical exactly what he understood this e-mail
5 to mean and what Mr. Cooper and Mr. Scott had done in
6 readjusting and entering a false level into the program.

7 JUDGE DALE: I agree with your assessment
8 of the importance of this information. However, when
9 Mr. Pierie says I don't know, I would appreciate it if the
10 question was not repeated further. If he doesn't know, he
11 doesn't know. He answers it on the first question.

12 MR. SCHAEFER: Thank you, your Honor.

13 BY MR. SCHAEFER:

14 Q. Now, again, can you tell me, Mr. Pierie,
15 how would -- if you know, how would Mr. Scott program in
16 that 4/10 of a foot fudge factor as it's been referred to?

17 A. I wasn't versed in the programming, so I
18 couldn't tell you how he did it.

19 Q. Do you think that that was a prudent thing
20 for Mr. Scott to do?

21 A. I can't answer that because I don't know
22 what the situation was and what he was doing.

23 Q. Mr. Cooper was sending you this e-mail,
24 correct?

25 A. He was telling us what Jeff was doing. I

1 don't think he was asking us if this was okay to do. It
2 was something Jeff and him were doing. I mean, it's very
3 common for the plant to go ahead and make changes without
4 talking with engineering. I mean, once that equipment is
5 turned over to engineering, it's -- or excuse me -- turned
6 over to the plant, it's their responsibility for
7 maintaining it. It's not -- we can't do that. We're so
8 busy doing -- we go from plant to plant. So again, once
9 the equipment is turned over to engineering, it's their
10 responsibility.

11 Q. We'll get to that in a second. Can you
12 continue reading the last sentence of that paragraph?

13 A. We'll check on what this does to the actual
14 level the next several mornings.

15 Q. Okay. Did you receive any follow-up
16 e-mails from Mr. Cooper or from Mr. Scott about what it
17 actually did to the level on the next several mornings?

18 A. Not that I recall.

19 Q. Can you continue reading the next
20 paragraph, please.

21 A. Two things we can do or should do.
22 Overflowing the upper reservoir is absolutely an absolute
23 no-no. From the wave action on this past Sunday, we need
24 to permanently lower the present operating level of 1596
25 to 1595 or add a wind indicator to the upper reservoir so

1 that an alarm can warn the Osage operators that the level
2 needs lowering ASAP when that --

3 Q. Okay. I'm sorry. Keep going.

4 A. -- when at 1596 elevation.

5 Q. Okay. Let me ask you this: You knew from
6 being the project engineer that the system was operated at
7 1596, correct?

8 A. I knew they were operating at 1596,
9 correct.

10 Q. And when we say operate at 1596, what we
11 mean is that when they fill the thing up to the maximum
12 operating level, that level is elevation 1596, correct?

13 A. Correct.

14 Q. Now, do you know, was the operating level
15 actually ever lowered to 1595?

16 A. I have no idea.

17 Q. And the other alternative would be to add a
18 wind indicator to the upper reservoir, correct?

19 A. Correct.

20 Q. And I believe you do know about that,
21 correct?

22 A. Correct.

23 Q. And so equipment was purchased to install a
24 wind indicator?

25 A. Correct.

1 Q. But prior to the reservoir breach on
2 December 14, 2005, that equipment was onsite but was never
3 installed?

4 A. Correct.

5 Q. And again, as you sit here today, do you
6 have any personal knowledge that wind was ever the actual
7 problem for causing water to come over the side of the
8 reservoir?

9 A. I was not at the plant at the time of the
10 wind event.

11 Q. Can you read the next sentence, please?

12 A. Jeff hasn't looked into the program that
13 much yet, but we need to know or alarm when one of the
14 transmitters is out of range of the other two. A foot
15 difference is too much for one transmitter to be out.

16 Q. Okay. Let me stop you right there. Were
17 you ever involved in actually working on a program or
18 implementing an alarm that would inform the plant when one
19 transmitter was that far out with the other two?

20 A. I didn't do any of the programming. I know
21 when Tony and I discussed what his plan was, is to
22 basically look at each individual level transmitter, and
23 if one started to drift more than a certain percentage --
24 I thought again it was going to be like 2 percent -- that
25 would be removed from the measurement and would be

1 alarmed. I don't know if that was implemented or not.

2 Q. When did you have that conversation with
3 Mr. Zamberlan?

4 A. That was at the beginning of the outage
5 when he showed us the, I do believe the initial review of
6 the logic for the upper reservoir.

7 Q. Okay. So that would have been September of
8 '04?

9 A. Correct.

10 Q. But you don't -- do you know if that was
11 actually ever programmed into the system?

12 A. I do not know that.

13 Q. Can you continue reading, please?

14 A. Overflowing the upper reservoir or wave
15 action causing the reservoir to overflow can eat away at
16 the base of the parapet wall foundation and could cause a
17 collapse of a parapet wall section, and then it would be
18 all downhill from there literally. The dam would severely
19 erode and cause eventual failure of the dam. Those kind
20 of headaches we don't need.

21 Q. I'm sorry. It says those kind of headlines
22 we don't need?

23 A. I'm sorry. Headlines.

24 Q. So I believe you said you don't have any
25 training in dam engineering or dam safety, correct?

1 A. I do not.

2 Q. But you did receive an e-mail from Richard
3 Cooper, the plant superintendent, that clearly said that
4 overflowing the upper reservoir would cause the base of
5 the parapet wall to be eaten away and could cause a
6 collapse, correct?

7 A. Correct.

8 Q. So at least on September 27th of 2005, you
9 did have that information, correct?

10 A. According to what Rick is telling me here,
11 yes.

12 Q. Do you have any reason to disagree with
13 what Rick's saying in the e-mail?

14 A. I don't know anything about dams, so I
15 can't say.

16 Q. Can you continue reading, please?

17 A. Sure. I'm not sure what that first word
18 is.

19 Q. I believe it's moving. There's a
20 three-hole punch that somebody punched there.

21 A. Moving the current operating level from
22 1596 to 1595 wouldn't be popular. I'm not sure -- I'm not
23 sure that would gain in money of generation. But we need
24 to add additional monitoring and tighten up existing
25 controls if we're going to continue to operate at 1596.

1 I'm asking for some help and direction. For now we have
2 built in the .4 fudge factor and switched out the one
3 transmitter. We'll be looking into all the transmitter
4 indications soon to see if they have all drifted off --
5 all drifted off some. Maybe we need to establish periodic
6 calibration checks on all our transmitters instead of
7 waiting for one to fail or go into alarm. We haven't done
8 that on this new system. We've been trying to eliminate
9 work, not expand on it.

10 Q. Okay. I believe you said a minute ago that
11 you didn't really have an understanding of what Mr. Cooper
12 may be doing in this e-mail because you were no longer
13 there, I think. Is that what you said? You were no
14 longer involved in the project?

15 A. At this time, again, I was -- this is still
16 September 27th. I was basically moving on to another
17 department or was aware of it at this time, but -- so I
18 want to say I didn't have any responsibility for helping
19 out on things because I did. I went out there and I --
20 and suggested some things.

21 Q. Well, let me ask you this: Because the
22 e-mail is addressed directly to you and to Mr. Hawkins,
23 correct?

24 A. Very good.

25 Q. Is that true?

1 A. That is true.

2 Q. The other people on there, they're cc'd,
3 but it's directed to you and Mr. Hawkins, correct?

4 A. Correct.

5 Q. And Mr. Cooper's statement is, I am asking
6 for some help and direction, correct?

7 A. Correct.

8 Q. Did you give Mr. Cooper any help and
9 direction with the problem that he had identified in his
10 e-mail?

11 A. I did.

12 Q. I'm sorry?

13 A. I did.

14 Q. You did?

15 A. Uh-huh.

16 Q. What help or direction did you give him?

17 A. We were going to add a tran-- or a wind
18 transmitter up at the upper reservoir. Should take care
19 of this high wind issue. And we were going to add a fifth
20 Warrick probe just below the pump stock so that when --
21 they would truly know that when it got to 15 -- well, just
22 below 1596, so they would have constant indication of the
23 pump stop elevation.

24 And then the three individual -- we were
25 going to take the individual transformers or transmitters

1 and they're going to have them on their own display so
2 that they could keep an eye on them. And what else were
3 we going to do? I think that was it.

4 Q. And this e-mail, if it's September --

5 A. Oh, and I was asked if they wanted me to
6 order another transmitter to replace the one that they
7 were having problems with.

8 Q. And this e-mail is September 27, 2005?

9 A. Correct.

10 Q. Did you do any of those things that you
11 just listed prior to December 14, 2005?

12 A. I did not.

13 Q. I'm sorry?

14 A. I did not.

15 Q. And again, it was your understanding at
16 this time that -- let me ask you this: On September 27th,
17 did you know why they may be having false readings on the
18 piezometers?

19 A. I did not.

20 Q. This e-mail, September 27, 2005, did you go
21 down to Taum Sauk very shortly after the date of this
22 e-mail?

23 A. Yes.

24 Q. What prompted you to go down there?

25 A. This e-mail.

1 Q. So as a result of this e-mail, you went
2 down to the Taum Sauk facility, correct?

3 A. Correct.

4 Q. What did you do when you went down there?

5 A. I went down there and I measured the high
6 and the high-high level probes and recorded what I found.
7 At the time of this e-mail, I thought when Rick was seeing
8 these water levels that he was at the visitor's center or
9 visitor's platform.

10 So he had referenced the four-inch level
11 high on the upper on the wall. So I went to the visitor's
12 center and measured the elevation of the water, the water
13 was up at that time, and verified the elevation at the
14 visitor's center platform and the gauge house was
15 basically the same level. And I said, so if your water
16 truly got to four inches to the top of the wall, you
17 should have Warrick operation.

18 Q. Let me ask you this: The visitor center is
19 on the northeast corner of the reservoir, correct?

20 A. Correct.

21 Q. And Mr. Cooper's e-mail specifically says
22 that the wet areas were on the west side, correct?

23 A. Correct.

24 Q. So why do you go to the northeast corner?

25 A. Because I climbed up, and the only two

1 places that you can climb up on the wall is at the
2 platform, at the visitor's platform and the gauge house,
3 are the only two places that you can get to the wall.

4 Q. Could you have taken a vehicle to the
5 western side of the wall like Mr. Cooper did and stand on
6 top of it?

7 A. Yes, you could.

8 Q. You didn't do that?

9 A. I lost sight of that.

10 JUDGE DALE: Mr. Pierie, can you please
11 repeat your response?

12 THE WITNESS: Yes, I did.

13 JUDGE DALE: You did take a -- you did take
14 a vehicle there?

15 THE WITNESS: No. I'm sorry. No, I did
16 not.

17 BY MR. SCHAEFER:

18 Q. Now, I believe we saw previous some
19 documents that showed that you had documented your trip
20 there on October 7th, I believe, correct?

21 A. Correct.

22 Q. So is it fair to say that when you went
23 down there to the facility, it was sometime between
24 September 27th, 2005 and October 7th, 2005?

25 A. Correct.

1 Q. And as part of the visit, you did go to the
2 control box for the gauges, correct?

3 A. I did.

4 Q. And at that point, you did, in fact, look
5 at the levels to see where the high and the high-high
6 probes were set, correct?

7 A. Correct.

8 Q. Why were you concerned about seeing where
9 the high and the high-high probes were set?

10 A. Well, because they said they had water that
11 was four inches from the top of the wall, and I was like,
12 well, that sounds awful high, you know. Sounds like you
13 should have a Warrick trip if it was that high.

14 Q. So at that point, one thing you were
15 looking at was where they were set, because you were
16 concerned that four inches from the top of the wall should
17 trigger the Warrick probes, correct?

18 A. Correct.

19 Q. And did you check the elevations of the
20 high and the high-high probes when you were there?

21 A. I did not. I just measured them.

22 Q. Okay. Fair enough. Fair enough. You
23 measured them. How did you measure them?

24 A. Tape measure.

25 Q. And what two points did you measure with

1 that tape measure?

2 A. What two points?

3 Q. Yeah.

4 A. Tip of the probe to the black face tape.

5 Q. Was that black face tape that you saw in

6 October of 2005, did that look the same as when you had

7 seen those controls in February of 2005?

8 A. Yes.

9 Q. Could you see any difference at all?

10 A. No.

11 Q. Now, what were the -- what was the

12 elevation or what was the level setting on the high probe

13 at that time in October?

14 A. It was seven inches from the -- or excuse

15 me. Yeah. Seven inches from the top of the wall.

16 Q. You knew the top of the wall was 1598,

17 correct?

18 A. At the time of the survey.

19 Q. Right. But also I believe in October you

20 said that you knew that the 1597.5 for the high probe was

21 22 inches?

22 A. October of?

23 Q. October of 2005.

24 A. October of 2005?

25 Q. Uh-huh.

1 A. No. Where's that documented?

2 Q. I thought in your previous testimony you
3 said that at the time that -- well, do you still have your
4 Highway Patrol report investigation in front of you?

5 A. Yeah.

6 Q. If you look at Exhibit 13, that's your
7 interview with the Highway Patrol on January 9th, 2006.

8 A. Okay.

9 Q. If you look at the paragraph, the first
10 paragraph, it says that your interview started at 14 --
11 I'm sorry -- started at 9:48 and ended at 10:05 hours. Do
12 you see that?

13 A. In the first --

14 Q. First paragraph.

15 A. Okay.

16 Q. Is that correct, the interview started at
17 9:48 and ended at 10:05?

18 A. I have no idea.

19 Q. Does that sound about right, you were
20 interviewed by the Highway Patrol for approximately
21 18 minutes?

22 A. I don't have any idea. Seemed longer than
23 that, to be honest with you.

24 Q. And that interview wasn't under oath, was
25 it?

1 A. No, it was not.

2 Q. If you go down to paragraph 3 --

3 A. Okay.

4 Q. -- and I know you did some corrections on

5 this, but let's look at how it's stated here. It says,

6 Mr. Pierie stated he reported -- and again, this is

7 talking about your visit in October of '05, correct?

8 A. Correct.

9 Q. Says, Mr. Pierie stated he reported the

10 high and high-high probes were located seven and four

11 inches from the top of the reservoir wall. Mr. Pierie

12 stated they should have been 24 and 22 inches from the top

13 of the wall. Correct?

14 A. Correct. I mean, that's where I originally

15 set them up. That's why I want to make that correction.

16 They originally were set at 24 and 22 inches from the top

17 of the wall, originally where I set them.

18 Q. Right. And you know that those elevations

19 that you set were 1596 for the low?

20 A. Yeah.

21 Q. And 1596.2 for the high-high, correct?

22 A. Correct.

23 Q. So 1596, that was supposed to be 24 inches

24 from the top. That would put the top at 1598, correct?

25 A. Okay.

1 Q. And the high-high, you knew that it was at
2 1596.2, correct?

3 A. Correct.

4 Q. And you said that was supposed to be 22
5 inches from the top. So again, if you add those together,
6 that would make 1598, correct?

7 A. Correct.

8 Q. So you knew that the top of the wall was
9 1598, correct?

10 A. Well, after -- so we're having a discussion
11 after we've been investigating this, and now we're talking
12 elevations, and now it's getting drilled in your head
13 where things are at. I mean, I'm just saying this -- this
14 is where it was and where I originally set them here.

15 Q. Let me ask you this: In October, in that
16 roughly first week of October when you went down there and
17 you looked at where that high and high-high were set, were
18 you surprised to find where they were set?

19 A. No, I wasn't.

20 Q. And they were set --

21 A. Because I knew they had been moved.

22 Q. How did you know they had been moved?

23 A. Because of Tony's e-mail.

24 Q. Okay. Tony didn't say they were four
25 inches and seven inches from the top, did he?

1 A. No, he did not.

2 Q. How do you account for the fact, then, that
3 those probes were not set where Mr. Zamberlan had told you
4 they were set?

5 A. I didn't know where Tony had set them.

6 Q. Didn't he actually tell you in an e-mail
7 from December of 2004 that he was moving them to 1596.5?

8 A. He did.

9 Q. And did you find them in October of 2005
10 set at 1596.5?

11 A. I wasn't looking for them to be set at
12 1596.5. I was just measuring the probes. I mean, I
13 wasn't trying to put an elevation to where they were at.
14 I was measuring down from the wall, and basically, seven
15 to four inches. I was more concerned with Rick's e-mail
16 saying we're four inches from the -- the water was four
17 inches from the top of the wall.

18 And granted I was at the wrong location. I
19 thought he was at the visitor's platform, and that's why I
20 reported what I found. That's why I gave it in inches
21 instead of elevations.

22 Q. But you were there because you were
23 concerned about that to make sure that the high and the
24 high-high were working, correct?

25 A. Correct.

1 Q. So wasn't it important to you at that point
2 to see where they were actually set?

3 A. I did. I measured them. They were at four
4 and seven. So I e-mailed Rick and said, this is where
5 they're at. If your water was at four inches, you should
6 have had a trip.

7 Q. But you already knew from Mr. Bluemner from
8 late 2004 that the wall was not level?

9 A. Yeah. I lost sight of that.

10 Q. So it's fair to say that at the time you
11 installed these devices, you knew the wall was at 1598,
12 correct?

13 A. Correct.

14 Q. And you knew Mr. Bluemner told you that
15 panel 72 was 1596.9, correct?

16 A. Correct.

17 Q. And you knew that Mr. Bluemner in
18 December -- I'm sorry -- Mr. Zamberlan in December of '04
19 told you he was moving the probes to 1596.5, correct?

20 A. Correct.

21 MS. HOUSE: Your Honor, I would simply
22 request, we're covering a lot of the same ground.
23 Mr. Pierie's been here for three hours in the morning.
24 We've been going for an hour already with Mr. Schaefer
25 here, and a lot of these questions are things that have

1 been asked and answered multiple times.

2 I would just ask if we could try and focus
3 on new questions or new areas of inquiry. We've got two
4 additional witnesses we had originally scheduled today,
5 and I would really request that counsel try not to, you
6 know, put Mr. Pierie through answering a series of
7 questions that have been gone over numerous times now.

8 JUDGE DALE: Make specific objections when
9 it's asked and answered, and I'll sustain them.

10 MS. HOUSE: Thank you.

11 BY MR. SCHAEFER:

12 Q. And Mr. Pierie, you knew that Mr. Cooper
13 had told you in September of '05 that the operating level
14 was at 1596 and that water was coming over the side,
15 correct?

16 MS. HOUSE: Objection, asked and answered.

17 JUDGE DALE: Sustained.

18 BY MR. SCHAEFER:

19 Q. Let me ask you this: When you went down
20 there in October, how did you document the settings that
21 you found the probes at?

22 A. I wrote them down on a business card.

23 Q. And what did you do with that business
24 card?

25 A. I don't know.

1 Q. You don't know?

2 A. I do not know. I don't have it. Let's say
3 that.

4 Q. How do you know you wrote them down on a
5 business card?

6 A. Because I remember pulling a business card
7 out of my wallet and writing it down, and then went down
8 and published the e-mail. Once I published the e-mail,
9 you know --

10 Q. And that was an e-mail stating what?

11 A. That the probes were at four and seven
12 inches.

13 Q. From the top?

14 A. From the top.

15 Q. And tell me again, who all did you send
16 that e-mail to?

17 A. I sent that e-mail to Rick Cooper, Jeff
18 Scott, Steve Bluemner, Bob Ferguson, Robert Lee. That was
19 it.

20 Q. Now, after October, the first week of
21 October, when did you go back to the facility again?

22 A. I was still working on the transmitters, so
23 I'm not -- I'm not exactly sure. Definitely I was there
24 after the breach.

25 Q. I'm specifically talking about before the

1 breach on December 14th of 2005. Let me ask you this way:
2 Did you go down to the facility between the first week of
3 October when you saw that the Warrick probes were four and
4 seven inches from the top of the parapet wall, up until
5 the time of the breach, did you go back to that facility
6 at all?

7 A. After measuring the probes?

8 Q. Yes.

9 A. I don't -- I think I might have. I can't
10 say for sure.

11 Q. Did you ever go back up and look at the
12 box, the control box?

13 A. I can't say that I -- I can't say for sure.

14 Q. But you might have?

15 A. I might have.

16 Q. But you don't recall anything unusual,
17 nothing stands out to you?

18 A. No.

19 Q. Now, you're aware that on December 14,
20 2005, the reservoir failed, correct?

21 A. Correct.

22 Q. And have you seen the FERC independent
23 report -- FERC independent panel report regarding the
24 conclusions of why that failure occurred?

25 A. I have not.

1 Q. And at some point after the reservoir
2 failed, you went back to the facility, correct?

3 A. Correct.

4 Q. When did you first find out that there was
5 a problem on December 14th?

6 A. I was sitting at my desk, and I heard some
7 employees talking about it.

8 Q. So you were already at work?

9 A. I was at work, general office.

10 Q. In St. Louis?

11 A. In St. Louis.

12 Q. Approximately what time was that?

13 A. I want to say 6:30, 7.

14 Q. In the morning?

15 A. Yes.

16 Q. Okay. And say you heard some employees
17 talking about it?

18 A. Correct.

19 Q. Who did you hear talking about it?

20 A. I can't remember Dan's last name. A couple
21 guys in generation engineering, but I can't recall their
22 names.

23 Q. And what did you do?

24 A. I was concerned, of course, and just kind
25 of continued on, and then I got a phone call from my

1 supervisor of generation engineering. He said, Tom, you
2 might want to get down to Taum Sauk to lend any support
3 that you can.

4 Q. Who was that supervisor who called you?

5 A. James Witges.

6 Q. James Witges?

7 A. Uh-huh.

8 Q. And as specifically as you can recall, what
9 did Mr. Witges tell you?

10 A. He just said, you need to get down to Taum
11 Sauk to help support, try to figure out what went wrong.

12 Q. Did he tell you what went wrong?

13 A. They didn't know, or he didn't know.

14 Q. Did he tell you it overtopped?

15 A. No.

16 Q. And then what did you do?

17 A. Got in my car and drove down to Taum Sauk.

18 Q. Approximately what time did you get the
19 call from Mr. Witges?

20 A. I have no idea. You know, a half hour,
21 hour after I'd gotten to work, so 7:30, 8 o'clock.

22 Q. And so then what time did you get down
23 there to the facility?

24 A. Takes two hours to drive there, so maybe
25 10, 10:30, 11.

1 Q. In the afternoon on December 14th?

2 A. No. In the morning.

3 COMMISSIONER GAW: May I interrupt, Judge?
4 Counsel, so we don't lose this time frame, would you mind
5 inquiring as to whether there were any telephone
6 conversations on the way down?

7 MR. SCHAEFER: Yes. Thank you.

8 BY MR. SCHAEFER:

9 Q. Mr. Pierie, did you have a cell phone with
10 you --

11 A. I did.

12 Q. -- when you were driving to the facility?

13 A. I did.

14 Q. Did you have any telephone conversations on
15 your cell phone?

16 A. I did. My new boss had called me, Tom
17 Callahan, and said, hey, did you -- did you leave the
18 backup protection in when you did the controls upgrades?
19 And I said, yes, we did. And he said, well, Carl Blank's
20 sitting here with me. He's ex-plant manager at Taum Sauk.
21 And he said, says the only way that he would think that
22 that reservoir would fail is if you overtopped.

23 Q. And when he asked you about if the backup
24 protection was still in, what backup protection was he
25 talking about?

1 A. Talking about the Warricks.

2 Q. The high and the high-high Warrick probes?

3 A. Uh-huh.

4 Q. Did you tell him at that point that you

5 knew they were four and seven inches from the top of the

6 wall?

7 A. I did not.

8 Q. And other than that phone call, did you

9 have any other phone calls on your drive down there?

10 A. Not that I recall.

11 Q. So you believe that you got down to the

12 facility around 10 or 11 o'clock?

13 A. I believe.

14 Q. Explain to me, you pull into the facility.

15 There's a gate, correct?

16 A. Correct.

17 Q. You go through the gate and you go up, and

18 there's a visitor center and office there, correct?

19 A. Correct.

20 Q. Did you talk to anybody at the facility

21 before you got to that visitor's center?

22 A. I'm sure I did. You have to sign in when

23 you go through. Probably talked to the guard, but I don't

24 know what I -- you know, what the conversation was.

25 Q. Once you pulled onto the facility property,

1 what did you do?

2 A. I went down to the plant, and I met with
3 Bob Scott, and Bob Scott and I went up to the upper
4 reservoir. I was obviously panicking about what was going
5 on. So we went up to the upper reservoir and seen the
6 failure and then went back down to the plant. At that
7 time they confirmed that they overtopped.

8 It was like, well, we've got to figure out
9 what happened. So we went up to the upper reservoir, Bob
10 Scott and myself. Went up to the gauge house, and pulled
11 the cover off of the protection probe box and shorted the
12 high and the high probe. We didn't take them down. We
13 just took them out of the tubes and shorted them to the
14 stainless steel case and verified that the relays picked
15 up.

16 Q. So when you first got there, you went to
17 the power house and you met with Bob Scott?

18 A. Correct.

19 Q. And you -- I mean, from the power house you
20 can't even see the upper reservoir, can you?

21 A. No, you cannot.

22 Q. So got in the car and you drove to the
23 upper reservoir?

24 A. Correct.

25 Q. Did you drive on the road that goes on the

1 west side of the reservoir or the road that goes on the
2 east side?

3 A. The back side. I mean, obviously the
4 breach was there, so we had -- the back side, is that the
5 east side?

6 Q. That would be the west side.

7 A. Okay. The west side then.

8 Q. The side where if you went down the road
9 you had to stop because the road was gone because of the
10 breach, is that the road you're talking about?

11 A. Right.

12 Q. That would be the west side.

13 A. So we went down the east side. The back
14 side of the reservoir is how I refer to it as.

15 Q. And what did you do on your first trip up
16 there to the reservoir?

17 A. Bob Scott and I went up to the upper
18 reservoir, pulled the box cover off and shorted the probes
19 to the stainless steel.

20 Q. Let me stop you right there. I thought you
21 said you went up there once, went back down and then came
22 back up again.

23 A. Well, you said what I did the first time I
24 went up. Is that what your question was?

25 Q. Yeah. Maybe it's a misleading question,

1 because when I say go up to the reservoir, I mean actually
2 drive up to the facility, not necessarily walk up to the
3 top of the facility, the parapet wall. Let me restate
4 this because I'm just confusing myself.

5 A. Okay. Very good.

6 Q. Let's look at it this way: I believe you
7 testified that you went up to the facility with Mr. Scott?

8 A. Yes.

9 Q. And then you came back down?

10 A. No. We were in -- I was at the -- I'm
11 sorry. You're correct. I was at the plant, and so Bob
12 and I got in a vehicle and drove to where the breach was,
13 just kind of looked at it and just unbelievable. So then
14 we did, we went back to the plant. And then while we were
15 at the plant, other technicians were walking around the
16 reservoir, and then they determined that, yeah, we
17 overtopped.

18 And so that's why I was like, well, if we
19 overtopped, Warricks didn't work or something happened.
20 So we went, got in the vehicle and went down to the back
21 side of the reservoir, climbed up where the overflow
22 piping is or the leakage return lines, walked up that part
23 of the reservoir and basically, again, opened the box,
24 checked the high and the high level probes and verified
25 that the relays picked up.

1 Q. Approximately what time was that that you
2 went up there to the box?

3 A. I couldn't -- early afternoon.

4 Q. Okay.

5 A. Late afternoon.

6 Q. Had anyone from FERC been there at that
7 point?

8 A. Not that I -- no.

9 Q. Had anyone from the Highway Patrol been
10 there at that point?

11 A. Not that I know of.

12 Q. Had any state regulatory agency been there
13 at that point?

14 A. Not that I know of.

15 Q. Were you and Mr. Scott the first ones to go
16 up and examine the box after the breach at least that you
17 know of?

18 A. At least that I know of.

19 Q. So you're not aware if anyone went up there
20 prior to that?

21 A. I'm not aware.

22 Q. Now, at that point, tell me exactly what
23 you did. You took the cover off of the box?

24 A. Took the cover off the box, and basically
25 did not remove the wires from the holddowns. Okay. They

1 were still intact.

2 Q. At this point let me ask you, where was the
3 high amount high-high Warrick probes?

4 A. They were hanging down inside the pipe.

5 Q. They were down inside the pipe?

6 A. Uh-huh.

7 Q. And you observed that yourself --

8 A. Yes.

9 Q. -- that they were actually down in the
10 pipe?

11 A. Yes.

12 Q. And then what did you do?

13 A. We pulled them out of the pipe and shorted
14 them to the case, the stainless steel case, and verified
15 in the control house that the relays picked up.

16 Q. Okay. So you actually pulled them out of
17 the pipe, and I take it they -- I take it they have metal
18 on the end of them?

19 A. Correct.

20 Q. You just stuck it on the metal box?

21 A. Correct.

22 Q. And what did it do?

23 A. Completed the circuit, and the relays
24 picked up in the control house.

25 Q. And how do you know that?

1 A. You very visually seen that pickup. You
2 can hear them.

3 Q. What do you see and hear when this relay's
4 picked up?

5 A. They click.

6 Q. And you did that for both the high and the
7 high-high?

8 A. Correct.

9 Q. At what point did you realize that the
10 system had been wired in series as opposed to parallel?

11 A. It wasn't until the next day.

12 Q. So on the 14th you went up there, and
13 before anybody else got there you pulled those probes out
14 of the pipes, correct?

15 A. Correct.

16 Q. And you held them on the box, and then what
17 did you do with them?

18 A. Then after we verified that they operated,
19 we put them back inside the conduits.

20 Q. You dropped them back down into the pipes?

21 A. Correct.

22 Q. And then what did you do?

23 A. I put a couple screws on the box and went
24 back down to the plant.

25 Q. Now, when was the next time you were up at

1 the box?

2 A. The next time I was up at the box, once we
3 got back down to the plant, seen James Witges, who's
4 supervisor generation engineering. Said, why don't we get
5 a -- test it a little better. Let's get a bucket of water
6 and go up there and check it with a bucket of water as
7 opposed to grounding the case, a more real life check. So
8 this time James Witges, Robert Lee -- or excuse me --
9 yeah, Robert Lee and myself went back up to the gauge
10 house and reformed the test, but this time putting the
11 probes in a bucket of water, and they operated.

12 Q. When was that?

13 A. That was a couple hours after we done the
14 first test.

15 Q. So that was still on the 14th?

16 A. Yes, still on the 14th.

17 Q. And tell me again, who all was with you
18 when you went back up there the second time?

19 A. James Witges, who's supervisor of
20 generation engineering, Bob Lee, who is the plant
21 technician, and myself.

22 Q. Mr. Scott didn't go with you the second
23 time?

24 A. No. He went home.

25 Q. And as detailed as you can, you got a

1 bucket?

2 A. Got a bucket of water from the overflow or
3 from the leakage pond, filled the bucket with water.
4 Climbed up to the upper reservoir. Took a few remaining
5 screws that were in the box, opened up the box, removed
6 the Kellum grips, removed the wire tie, because we had to
7 lower them in the bucket, and we couldn't have them still
8 fastened to the I-bolt.

9 Q. And this is on the 14th, correct?

10 A. Correct. This is on the 14th.

11 Q. So you removed the wire tie and the
12 Kellum's grips for the high and high-high probes?

13 A. Correct. It still had the back tape,
14 reference tape on there, so knew they -- if we had to
15 return them back to normal, we knew where they were at.
16 We pulled the reference probes out of the pipe. Stuck all
17 three in the bucket and verified that they worked.

18 Q. Okay. And again, they worked just like
19 they were supposed to, correct?

20 A. Again, the relays picked up. We didn't
21 functionally check all the way down to the end. We just
22 verified that the relays picked up in the cabinet.

23 Q. And at the point that you -- the second
24 time you went up there and you pulled the probes out and
25 you took off the wire ties and the Kellum grips, still no

1 one from FERC had been there yet, correct?

2 A. That's correct.

3 Q. And no one from the Highway Patrol had been
4 there yet, correct?

5 A. Correct.

6 Q. And no one from any state regulatory agency
7 had been there, correct?

8 A. Correct.

9 Q. And what did you do, if anything, to
10 document what you found on both -- both being up there
11 that time and the time right before that?

12 A. Well, I mean, the indication -- I mean, the
13 black tape was on the wire, so you knew where it was
14 originally. There was a mark in the sheathing of the
15 Warrick cable that you could tell how it was hung, you
16 know, especially if it been hung in two different
17 locations from the original installation to the final
18 installation because these marks on the -- on the wire.
19 So, I mean, it was pretty evident where these probes were
20 at.

21 Q. Okay. So after you dropped them in the
22 bucket and they worked, then what did you do?

23 A. Then we basically took them out of the
24 bucket, rolled up the wires, placed them in the box,
25 closed the box up with a couple of screws again and

1 returned back to the plant.

2 Q. Okay. Again, this was still on the 14th?

3 A. Correct.

4 Q. Okay. When was the next time you went back
5 up to the box?

6 A. The next day we went up fairly early in the
7 morning. This time we now have assembled a crew because
8 we needed people down in the plant, so Chris Hawkins of
9 generation engineering and Mike Whery with Sega
10 Consultants. We go down in the plant to verify that the
11 end device was functional. And then Carl Blank, who's the
12 ex plant manager of Taum Sauk, Chris Stump, generation
13 engineering, James Witges generation engineering
14 supervisor, Steve Bluemner, generation engineering, and
15 myself went up to the upper reservoir and basically
16 performed a test. Again put the probes in the bucket, now
17 verify that, yes, it tripped all the way down to the end
18 device.

19 Q. Let me ask you this: When you went up
20 there for that first time on the 15th, where were the
21 probes? Were they just sitting inside the box?

22 A. They were rolled up, yeah.

23 Q. You didn't put them back in the pipe?

24 A. We did not secure them back in the -- no.

25 Q. Okay. Now, I believe the second you went

1 up there on the 14th, you took off the wire ties and the
2 Kellum grips, correct?

3 A. Correct.

4 Q. Did you just leave those off on the 14th?

5 A. Yes. We didn't refasten them.

6 Q. So when you came back on the 15th --

7 A. Correct.

8 Q. -- the Kellum grips and the wire ties were
9 still off?

10 A. Correct.

11 Q. And the high and the high-high probes and
12 the reference probe were simply wound up and sitting in
13 the box?

14 A. To the best of my recollection.

15 JUDGE DALE: At this point, I think we'll
16 take a break for 15 minutes until quarter of.

17 (A BREAK WAS TAKEN.)

18 JUDGE DALE: Mr. Schaefer, you were
19 inquiring of the witness.

20 BY MR. SCHAEFER:

21 Q. Mr. Pierie, just so I've got this down,
22 when you and Mr. Scott went up there the first time on the
23 14th, you pulled the probes and then you put them back in,
24 correct?

25 A. Correct.

1 Q. And then you went back up there later that
2 day with Mr. Witges and Mr. Lee and you pulled the probes,
3 disconnected the wire tie and the Kellum grip?

4 A. Correct.

5 Q. And you put it in a bucket of water --

6 A. Yeah.

7 Q. -- and then you put everything back in the
8 box. Did you reattach the Kellum grip and the wire ties?

9 A. No.

10 Q. And then the next time you went up there
11 was the next day. That was with Mr. Hawkins, Mr. --

12 A. Chris was down in the plant. So Chris
13 Hawkins and Mr. Whery were in the plant.

14 Q. Who all was actually up at the box?

15 A. Okay. Up at the box was Carl Blank,
16 ex plant manager of Taum Sauk, James Witges, supervisor of
17 generation engineering, Steve Bluemner, generation
18 engineering, Chris Stump, generation engineering, and
19 myself.

20 Q. Now, I take it when you went up there on
21 the 15th that when you got up to the box, everything was
22 in the same condition as it was when you left it on the
23 14th?

24 A. Correct.

25 Q. Still no Kellum grips, no wire ties, probes

1 not in the pipes but just in the box?

2 A. Correct.

3 Q. And what did you guys do at that point?

4 A. We put the probes back in the bucket of
5 water and verified that the -- basically all through from
6 the electromechanical relay all the way to the end device,
7 which would be the 86DT, activated, which it did.

8 Q. And then what did you do?

9 A. And then we returned it all back to the --
10 to the box. During that period of time we were also
11 looking at the gauge piping. Kind of the mechanicals and
12 the civils were trying to figure out how much had come
13 loose and how much float there was, and we were inspecting
14 the pipe to make sure that the pipe was clear and that it
15 didn't have any debris or anything in it. That's about
16 it.

17 Q. How did you leave the high and the
18 high-high probe?

19 A. Inside the box, I want to say, but I can't
20 say for sure. It was definitely left up in the upper
21 reservoir.

22 Q. Still no Kellum grips, still no wire ties?

23 A. No.

24 Q. Taken out of the pipe?

25 A. (Witness nodded.)

1 Q. Okay. Is that the only thing you did at
2 the box on the 15th?

3 A. Correct.

4 Q. When was the next time you went to the box?

5 A. Probably would have been three, maybe four
6 weeks later with Siemens to do a third-party evaluation,
7 and went through that test again. I don't know the exact
8 date.

9 Q. Where are the -- where's the high and the
10 high-high probe now?

11 A. They're in the plant manager's office.

12 Q. Are the probes attached to the cables
13 still?

14 A. They are. Well, the last time I seen them
15 they were. I can't say for now. But the last time I seen
16 them was a year and a half ago, I guess.

17 Q. Now, were you aware when you were working
18 on this facility prior to the breach that Jerry Toops, the
19 park superintendent for Johnson Shut-In State Park, lived
20 right down the hill from the facility?

21 A. I did not.

22 Q. Were you aware that there was a safety
23 protocol for FERC whereby if there was an emergency at the
24 plant, there was a call list of people to be called?

25 A. I've seen them posted around the plant. I

1 wasn't aware of -- nobody trained me in saying this is
2 what you do, but it was pretty spelled out. Again, they
3 were posted at all the telephones, the sequence of who you
4 call and what to do.

5 Q. And you knew Johnson Shut-ins Park was down
6 below the facility?

7 A. I did.

8 Q. On the 14th -- well, let me ask you this:
9 Did you know that the breach had injured Jerry Toops and
10 his family?

11 A. I heard when I got down there, I heard that
12 there were some people that were taken to the hospital,
13 and that's all I heard.

14 Q. Did you know their condition --

15 A. I did not.

16 Q. -- when you went there?

17 At what point did you find out their
18 condition?

19 A. Later that night.

20 Q. And the reason I ask this, why was it so
21 important to go out there and test those probes on the
22 14th before anybody else got down there?

23 A. We wanted to find out what happened, why
24 the thing didn't work.

25 Q. You already knew, didn't you, looking at

1 Exhibit 16, which is your e-mail from you to Jeff Scott,
2 that when the overtopping occurred in September, you knew
3 then that the high and the high-high probes didn't work,
4 didn't you?

5 A. Well, they -- according to what I heard is
6 that the water didn't get high enough to work.

7 Q. Okay. But you knew from Mr. Cooper's
8 e-mail that the water overflowed the top, correct?

9 A. Well, that was -- well, again, e-mailing --
10 again, I reported what I found. You know, I don't know
11 how to answer that.

12 Q. Well, isn't the answer that you knew that
13 the probes weren't working when it overtopped in
14 September?

15 A. No, I did not know that.

16 Q. In fact, you sent that e-mail to --

17 A. But if --

18 Q. -- Mr. Scott, correct?

19 A. If the units aren't running, the Warricks
20 don't trip. So I don't know what the condition of the --
21 when the winds came and where the level was at. I have no
22 idea.

23 Q. Did it surprise you that you found when you
24 tested those probes on the 14th that they were working
25 just fine?

1 A. Well, because right next to me, probably a
2 couple of parapet walls down, there was water over the
3 side of the wall, pretty close to where we were at, and
4 I'm like, well, these should have been wet. These should
5 operate. So yeah, I was very surprised to find out they
6 operated, but why didn't they not work?

7 Q. You say there was water. As you're looking
8 at the box, that was to your right, correct?

9 A. Uh-huh.

10 Q. Didn't you think it was a prudent thing to
11 wait until FERC got there to examine the condition of
12 those probes?

13 A. Well, again, the first thing when we -- I
14 just wanted to know why the probes didn't work or if they
15 worked or what the deal was. My main thing when I got
16 there was to investigate why these probes didn't operate.
17 When they operated, I was like, okay. I went back down to
18 the plant, got together with Mr. Witges, and he said that
19 probably the prudent thing to do is to go up there and now
20 test them in water. So that's why we went up there to do
21 it. You know, I -- should we do this? And he said yeah.
22 We got the markings --

23 Q. I'm sorry. Who said to do it?

24 A. Mr. Witges.

25 Q. Mr. Witges told you to pull the probes?

1 A. Correct. And again, it was -- everything
2 was labeled and marked. It was fairly obvious where
3 things were at.

4 Q. Let me ask you this: Are you aware that in
5 April of 2006 the Highway Patrol asked Ameren who pulled
6 the probes after the breach?

7 A. I was not.

8 Q. Okay. Have you ever seen a May 23rd
9 letter, May 23rd, 2006 letter from Ameren to the Highway
10 Patrol regarding that question?

11 A. Not that I recall.

12 Q. Did anyone ever tell you that Ameren
13 identified you and Mr. Scott as the only two that pulled
14 the probes?

15 A. Okay.

16 Q. But, in fact, Mr. Witges was with you, too,
17 wasn't he?

18 A. Well, are they asking at the initial time
19 that we went up there to check them? It was Mr. Scott and
20 myself.

21 Q. I'll put it to you. The question was, name
22 of persons who pulled the Warrick probes after the breach.

23 A. Well, that's kind of general. Pulling the
24 Warricks can be pulling them out of the pipe to test them.
25 I mean --

1 Q. Which you and Mr. Scott did?

2 A. Me and Mr. Scott did.

3 Q. And then you put them back in?

4 A. Put them back in.

5 Q. And then that same day you and Mr. Witges

6 pulled them back out again --

7 A. Correct.

8 Q. -- correct?

9 And at that point they were left out,

10 correct?

11 A. Correct.

12 Q. Do you know why Ameren didn't identify

13 Mr. Witges to the Highway Patrol?

14 A. I can't answer that.

15 Q. Now, at one point earlier in your testimony

16 I think you said that when you went down to the facility,

17 I think in October, you noticed there was some erosion on

18 the road --

19 A. Uh-huh.

20 Q. -- such as after a rain?

21 A. Uh-huh.

22 Q. Which side of the reservoir was that on?

23 A. That would have been on the side of the

24 breach.

25 Q. On the west side?

1 A. West side.

2 Q. And you are aware, aren't you, that there's
3 a collection system around the base of the entire
4 facility?

5 A. I am.

6 Q. Like a moat?

7 A. Uh-huh.

8 Q. In fact, all the water that comes off the
9 facility is supposed to go into the collection system,
10 correct?

11 A. Correct.

12 Q. And the road is on the far side of the
13 collection system from the reservoir, correct?

14 A. Correct.

15 Q. And then all the water goes from the
16 collection system back over to a pond, and then it gets
17 pumped back up into the facility, correct?

18 A. Correct.

19 Q. But you believe there was erosion on the
20 road?

21 A. It was, yeah, right at the top of the road,
22 the road leading up to the -- the road that surrounds the
23 reservoir.

24 Q. So we're clear, are we talking about the
25 road on the ground at the toe all the way down at the

1 bottom --

2 A. No.

3 Q. -- or are we talking about the road at the
4 top?

5 A. Right, at the top at the parapet wall.

6 Q. So that's where you saw the erosion?

7 A. Yes.

8 Q. And also in earlier testimony I think with
9 Mr. -- one of Mr. Thompson's questions you referenced the
10 fact that the facility had been -- the operational level
11 had been lowered by two feet?

12 A. Correct.

13 Q. How do you know that?

14 A. In actually conversation with Rick after I
15 was discussing my e-mail with him of the things that I was
16 going to do, to add an additional Warrick probe, the wind
17 transmitter, says, hey, we're going to get this -- I'm
18 going to get this done. He said, yeah. Well, we've taken
19 safety precautions. We've lowered the reservoir two feet.
20 We're comfortable we're operating in safe condition.

21 Q. Was that in an e-mail or was that just a
22 conversation?

23 A. No. That was a conversation in Rick's
24 office.

25 Q. And did he tell you how they were lowering

1 it? Were they physically lowering it or were they just
2 programming --

3 A. Through the control.

4 Q. So they were programming in --

5 A. Through the setpoint.

6 Q. I'm sorry. We can't both speak at the same
7 time.

8 A. Through the setpoint.

9 Q. Okay.

10 A. In the control system.

11 Q. Just a couple more quick questions,
12 Mr. Pierie. I believe you testified earlier that you were
13 actually -- you lost a bonus with Ameren?

14 A. I did.

15 Q. And when would you have received that
16 bonus?

17 A. Is it in March? I think March. March,
18 April time frame.

19 Q. Of 2006?

20 A. Would have been -- yeah, 2006. Yes.

21 Q. So it was after -- it was after the breach?

22 A. After the breach.

23 Q. Did Ameren explain to you why you weren't
24 getting a bonus?

25 A. Yes.

1 Q. And what was the explanation?

2 A. Because of the event at Taum Sauk.

3 Q. Were you ever shown any documents,
4 evaluations from Ameren regarding your performance in
5 regard to the Taum Sauk matter?

6 A. Well, it came up in my review. There were
7 some issues that they brought up. Now, what they were --
8 which was justifiably so.

9 MR. BYRNE: Your Honor, to the extent we
10 get into the personnel files of Mr. Pierie, I think we've
11 designated all that stuff as highly confidential.

12 JUDGE DALE: Yes. Do you --

13 MR. SCHAEFER: I won't go into it any
14 farther.

15 BY MR. SCHAEFER:

16 Q. I would just like to ask, though, you did
17 see documents that identified issues with your
18 performance?

19 A. I think, yes, in my review, I do believe a
20 couple of things were brought out because of Taum Sauk.

21 Q. Okay. And was one of the reasons that you
22 did not get a bonus because you allowed the probes to be
23 set --

24 JUDGE DALE: If we're going to get into
25 that, we need to go in-camera. So are we going to go

1 in-camera?

2 MR. SCHAEFER: That's okay with me.

3 JUDGE DALE: All right.

4 (REPORTER'S NOTE: At this point, an
5 in-camera session was held, which is contained in
6 Volume 4, pages 685 through 692 of the transcript.)

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 JUDGE DALE: Okay. Mr. Schaefer?

2 MR. SCHAEFER: Thank you, Judge. It's my
3 fault. I forgot before I quit to get Exhibit No. 21
4 admitted into the record. That's the Smartboard drawing
5 that Mr. Pierie did, and if I could ask Mr. Pierie to put
6 his initials just anywhere on the bottom right in there.

7 (Witness complied.)

8 MR. SCHAEFER: Thank you very much.

9 JUDGE DALE: I will save it later so we can
10 save the time right now.

11 MR. SCHAEFER: Would you like me to write
12 Exhibit 21 on it so it's actually on the document itself?

13 JUDGE DALE: It'll be okay.

14 MR. SCHAEFER: Thank you, Judge.

15 JUDGE DALE: I also show that Exhibit 20
16 has not been offered, so if you'd like to do both at one
17 time.

18 MR. SCHAEFER: Yes, I would. Thank you,
19 Judge.

20 JUDGE DALE: Is there any objection?

21 MS. HOUSE: No objection.

22 JUDGE DALE: Thank you. Exhibits 20 and 21
23 will be admitted into evidence.

24 (EXHIBIT NOS. 20 AND 21 WERE RECEIVED INTO
25 EVIDENCE.)

1 JUDGE DALE: Commissioner Gaw, we're
2 continuing with your questions.

3 QUESTIONS BY COMMISSIONER GAW:

4 Q. Thank you. Let me apologize in advance,
5 Mr. Pierie, because my questions will jump around a great
6 deal more than I want them to be. Because you've already
7 been asked a number of the questions, I'm going to have to
8 try to filter through my questions that may have already
9 been dealt with, and it may appear somewhat haphazard.

10 First of all, I want to know whether or not
11 you have delivered copies of all of the e-mails that you
12 have either sent or received in regard to the Taum Sauk
13 matter to the Staff of the Commission?

14 A. I do not.

15 Q. You do not -- you have delivered them or
16 you have not?

17 A. Delivered -- you mean every e-mail that I
18 had concerning Taum Sauk?

19 Q. Yes.

20 A. Lawyers have them, I'm sure. Now, whether
21 the Commission -- I'm assuming the Commission -- I can't
22 answer that.

23 Q. Okay. Did you keep all of the --

24 A. Pretty much.

25 Q. -- all of the e-mails? Pretty much?

1 A. Yeah.

2 Q. Do you know of any that you deleted?

3 A. No.

4 Q. Mr. Pierie, in regard to the liner project
5 and all of the things that were being done in the fall of
6 '04, if you had to name someone who was the person in
7 charge of the overall project, who would that be?

8 A. Of the liner project?

9 Q. Of everything that was being done, the
10 liner, the things that you were working on with the
11 probes, all of the things that were occurring, who was the
12 person who had authority over all of that?

13 A. It's kind of a discipline by -- you know,
14 it's by discipline. So that was a civil project, so it's
15 broken down to a civil project, and mine was electrical
16 project. Electrical projects, they really aren't separate
17 projects, so there's really not a project manager over the
18 entire outage, if you were referring to that.

19 Q. Well, that's kind of what I'm trying to get
20 to.

21 A. Yeah.

22 Q. Would you agree with me that there is a --
23 that all of these pieces to this project do interrelate
24 and have some interdependence on one another?

25 A. Well, I mean, obviously the gauge piping,

1 there was a tie there between electrical and civil. And
2 then, of course, schedule because you're trying to keep
3 everything going in the same direction, that's -- I mean,
4 there is a construction manager that basically, you know,
5 kind of schedules construction meetings, and he basically
6 is aware of everything, what the electricals are doing and
7 what the civils are doing, what the mechanicals are doing.
8 So there is that construction manager, but he doesn't make
9 engineering decisions. He's just there for construction.

10 Q. Okay. Who was that in this case?

11 A. That was Charlie Fronick.

12 Q. And who is he with?

13 A. He's with Ameren.

14 Q. UE or Services?

15 A. Yes, UE. Well, UE.

16 Q. And do you know what he does today?

17 A. He's still construction supervisor.

18 Q. Okay. Where does he work out of?

19 A. He works out of the Sunset Hills office.

20 So actually he might be Services, now that I think about
21 it. I'm not sure.

22 Q. Do you know where --

23 A. If he's --

24 Q. Sorry.

25 A. That's okay.

1 Q. Do you know where he is in regard to the
2 chain of command?

3 A. Construction supervisor, kind of the chain
4 of command, he -- no, I can't really -- I'm not familiar
5 enough with that organization to tell you.

6 Q. Okay. Was he onsite --

7 A. Yes, he was.

8 Q. -- often?

9 Do you know when he would have left the
10 site?

11 A. Right after construction was complete, I do
12 believe.

13 Q. Again, when was that?

14 A. End of November.

15 Q. Of '04?

16 A. Of '04, correct.

17 Q. In regard to your responsibilities on the
18 project, in your own words, would you tell me what they
19 were?

20 A. Basically, I was there as a support role
21 to -- for the controls upgrade. The majority of my time
22 was spent putting together wiring diagrams and leading the
23 electricians, basically terminating end devices, kind of
24 keeping the schedule moving along, procuring miscellaneous
25 equipment that still needed to be purchased.

1 Q. What was your authority in regard to
2 decisions? What decisions could you make? What decisions
3 did you need to defer to someone else in regard to your
4 area of responsibility?

5 A. Day-to-day decisions whereby, I mean, as
6 far as how things were going to be constructed and what
7 order they were going to be constructed, that was pretty
8 well up to my judgment, and to talk with the construction
9 manager, make sure that it's kind of fitting what he's
10 doing also. But if there were any major -- if you were
11 going to affect the outage or you wanted to make a major
12 purchase, then that would go through my supervisor.

13 Q. Okay. And were there any decisions that he
14 could not make that would need to go up higher than his
15 position, that you're aware of?

16 A. Not that I'm aware of.

17 Q. Was there any written protocol or set of
18 written protocols that dealt with whose responsibility
19 certain items were in regard to construction projects and
20 engineering matters?

21 A. Not that I'm aware of. You're saying a
22 formal document that kind of outlined how things should be
23 done?

24 Q. Yes.

25 A. Not that I'm aware of.

1 Q. Is there any kind of a written document
2 that you have seen that Ameren has in regard to these kind
3 of projects and general protocols?

4 A. Since this breach?

5 Q. Before it first.

6 A. No, not before it.

7 Q. How about subsequently?

8 A. Yes. They've been working diligently
9 putting together procedure and management books.

10 Q. Okay. Who's in charge of that project?

11 A. I do believe it was Jim Morgan. He's kind
12 of a project management group. He's not with the company
13 anymore, so I'm not quite sure who's doing it now.

14 Q. Was that being done within AmerenUE, Ameren
15 Services or somewhere else?

16 A. That would be AmerenUE Services.

17 Q. And can you give me a general description
18 of what is the goal of that project?

19 A. I'm not very close to the project, but I
20 know it was again getting down a procedure for doing
21 design reviews, how equipment will be commissioned and
22 started up, risk management, cost controls, scheduling.
23 Pretty much everything that you need to put together a
24 successful project.

25 Q. Do you know whether or not the incident at

1 Taum Sauk regarding the breach was the reason for that
2 project?

3 A. I think there were people in the company
4 that were already starting to work to say, hey, this is a
5 concern, this needs to get done. They were already
6 starting it. But now once Taum Sauk happened, it kicked
7 it into high gear.

8 Q. What makes you say that there were people
9 working on it, that you believe they were working on it
10 prior to the Taum Sauk incident?

11 A. Just from conversations I've had.

12 Q. Can you give me the names of individuals
13 you might have talked to about it?

14 A. Warren Witt was one. He came from
15 Callaway, which is definitely very regulated, you know,
16 and so he went from Callaway to Osage, and he has -- once
17 he got to Osage, he started putting these documents
18 together, or he seen a need for the documents I should
19 say.

20 Q. Tell me how Rick Cooper fit into the
21 decision-making process in regard to the work that was
22 being done at Taum Sauk in the fall of '04.

23 A. Rick was plant manager for Taum Sauk, so
24 our involvement or correspondence mainly would be at a
25 weekly meeting that we would have kind of gone over where

1 we were at with the project.

2 Q. Were there matters and decisions in which
3 he could overrule you?

4 A. Oh, sure.

5 Q. Give me a description of what kinds of
6 things might fall into that category?

7 A. Anything that he thought would -- was not a
8 safe way of doing something or, I mean, a design that he
9 didn't approve of.

10 Q. Did he ever do that?

11 A. No, not that I -- not on my project, that I
12 can recall.

13 Q. Was there anyone else there onsite who
14 could overrule? Let me rephrase that. Was there anyone
15 else that could overrule a decision that you might make,
16 other than --

17 A. That was onsite?

18 Q. Let's say just anyone.

19 A. Well, my boss could overrule our decisions
20 or --

21 Q. Right. Besides him?

22 A. Besides my boss?

23 Q. Yes.

24 A. Mark Birk could overrule or the -- geez.
25 Vice president of generation. Actually, he did get

1 involved in a decision there that we were going to try
2 to -- we kind of didn't get the complete project done, so
3 we had to do specific parts of the project, and I think
4 Mark pretty well made that decision, because we wanted to
5 get the whole thing done. I think he jumped in and said,
6 no, this isn't prudent. You're not going to get this
7 done. There's an example.

8 Q. Okay. So Mark Birk would be another
9 individual?

10 A. Correct.

11 Q. Anyone else?

12 A. Not that I can think of off -- I mean,
13 there's plenty of them that could definitely. I mean,
14 James Witges, anybody that sees something that they don't
15 agree with, they can make that decision, sure.

16 Q. And if that occurred, would there -- if
17 someone in one of those positions that you say could
18 overrule you said, look, I don't like this, I don't like
19 X, it should be Y, for instance, what would -- what would
20 happen in that event? Would there be a discussion about
21 it? Would there be something that -- a meeting about it
22 or would it just occur? Give me an idea.

23 A. Well, it normally would come up in a
24 discussion or a meeting and then appropriate -- you know,
25 not that they'd be close-minded, say you do it this way or

1 no way. I mean, in a discussion, if it's a better
2 decision, usually that's -- you go with the better
3 decision.

4 Q. And was there a team method of coming up --
5 coming to a resolution of an issue where there was
6 disagreement?

7 A. Have I ever been involved in it or, I mean,
8 specific to this?

9 Q. I mean, in regard to the way the protocol
10 would normally work, if there was a -- if there was a
11 disagreement, would there be some sort of a team
12 resolution? Was this a democratic process or would there
13 be somebody at a position that would say, okay, we're
14 going to do it this way, it's X not Y?

15 A. Normally it would be a democratic decision,
16 but if there was a decision that a higher up wanted, you
17 know, and he thought this was the best way to do
18 something, then you might give your opinion, but if he
19 wants to do it that way, it's probably a good idea you
20 better do it that way.

21 Q. Okay. You've already mentioned one
22 instance that may fall into that category, and I'll --
23 we're going to get to that, but can you think of any
24 others?

25 A. No.

1 Q. Okay. So there was this question, and you
2 brought it up earlier with me, and I think earlier than
3 that again, in regard to whether or not the rest of the
4 planned changes at Taum Sauk would be implemented in that
5 fall '04 outage time frame. You recall that?

6 A. I'm sorry. Could you repeat the question?

7 Q. You were earlier talking about Mr. Birk
8 having some input or decision in regard to not
9 implementing everything that had originally been
10 planned --

11 A. Correct.

12 Q. -- from the Taum Sauk renovations?

13 A. Correct.

14 Q. Do you recall that?

15 A. Yes.

16 Q. Describe for me what it was that was
17 planned and then what it was that was not finished.

18 A. Basically, the main controls, you know,
19 which is really the majority of the work that had to be
20 done down there, but then you had these other subsystems,
21 the upper reservoir level control, lower reservoir level
22 control, governor control, liquid reistat control.

23 We got all those done except for the main
24 control, and again, it become a timeline issue that the
25 engineering wasn't done, and the amount of work that

1 needed to be done, we weren't going to be able to get it
2 done in the time frame we were given. So we just said,
3 well, the prudent thing to do here is to just do these
4 other subsystems and then come back and do the main system
5 on a later outage.

6 Q. What did the main system revisions, what
7 were they intended to accomplish?

8 A. Well, just to make the units more efficient
9 in their operations. Just go to a computer-based system
10 as opposed to an older electromechanical based system.

11 Q. And this relates to the dispatch of the
12 unit or something else?

13 A. The running of the unit, starting and
14 stopping it.

15 Q. Would that starting and stopping have been
16 more automated?

17 A. Correct.

18 Q. Okay.

19 A. I should say, it's pretty automated now.
20 The system also would offer a lot better way to
21 troubleshoot if you're having problems because it's a step
22 process when you bring these units on. It's very
23 detailed. Systems turn on in sequenced order, and if you
24 get hung up in one sequence, you're sitting there and now
25 you guys are running around trying to figure out what

1 relay's stuck or what's not working. Well, now going to
2 the automated system, it's a lot easier to figure out
3 where you're hung up.

4 Q. And was there a certain time frame that you
5 were scheduled to be out initially?

6 A. Yes.

7 Q. How long was that?

8 A. And we -- I mean, we did. The original
9 outage was from September 15 to like November 15, and we
10 met the outage. I don't think we delayed it. I think
11 maybe we were actually a couple days late, three days
12 late, because they had some -- they were still finishing
13 up the liner.

14 Q. Okay. There was a -- when did you put in
15 your request or when did the discussion arise regarding
16 the finishing of the other planned changes?

17 A. When was that discussion?

18 Q. Yes.

19 A. Probably about a week into the outage.

20 Q. Okay. And give me a -- tell me what
21 happened in that regard.

22 A. Basically a phone call -- well, we were --
23 my boss and I were concerned of, you know, where we were
24 at, how many drawings we had, can we get this done. You
25 know, so it was kind of conversations back and forth and

1 looking at the outage schedule and what still had to be
2 done, and there were some drawing issues. And then Mark
3 got involved, and I think again he pretty well just said
4 this is probably not a good idea to try to get this done.

5 Q. Did he tell you why?

6 A. Well, because of the timeline.

7 Q. And why was the timeline important? I
8 think that's probably obvious.

9 A. Well, it needed to get back online. I
10 mean, there wasn't -- there's no safety issue or anything
11 to what we're doing. We were just postponing doing some
12 work until a later outage. I mean, it's not like it was a
13 safety issue or anything. So we did what we could, and we
14 did it well and we got it installed.

15 Q. It's not a safety issue. I assume it had
16 to do with having the plant up and being available to run?

17 A. Correct.

18 Q. So that the plant is -- do you know whether
19 that was a reliability issue or an economic issue?

20 A. As far as -- well, I mean, you have --
21 you're allotted so much time in an outage, and I can't --
22 I'm not close enough to really -- to answer that, to be
23 honest with you.

24 Q. I understand. You would agree with me,
25 wouldn't you, that certain kinds of plants are more

1 significant in regard to reliability perhaps in that some
2 may have more significance economically and some are a mix
3 of them?

4 A. That's probably a true statement.

5 Q. You don't know in regard to Taum Sauk?

6 A. I do not.

7 Q. How much involvement did you have with
8 Mr. Bluemner in this project?

9 A. Not very much, except for, I mean, he did
10 the survey on the pipes and he marked them for us to where
11 to put the elevation of the probes and that was about it.

12 Q. And the survey on the pipes meaning what
13 again?

14 A. Marking the pipes where we're going to put
15 the elevation of the Warrick and the transducers.

16 Q. How did he mark them?

17 A. With white paint. So, you know, he used
18 surveying equipment, marked the location on the pipes.
19 Then we came back and drilled the pipes for the locations
20 he'd marked and set our probes at those locations.

21 Q. I'm trying to visualize this right now. I
22 apologize. You're describing it fine. I just want to
23 make sure I'm following you. The white paint was placed
24 on the pipes themselves?

25 A. On the pipe, correct.

1 Q. How was the place on the wall marked?

2 A. He did mark the wall. He did mark the pipe
3 on the wall, but we did not use that marking because we
4 couldn't because -- well, I don't know how he marked it
5 because the parapet wall's ten feet up. So that's -- but
6 he did mark the pipes. We just took the elevation because
7 we knew what the elevation of the top of the wall was and
8 measured down to get the proper location for the high and
9 the high-high.

10 Q. I'm sorry. I stepped right over the top of
11 you.

12 A. That's right.

13 COMMISSIONER GAW: Let me ask the court
14 reporter if you got what he just said?

15 THE REPORTER: I got his part. I didn't
16 get your --

17 COMMISSIONER GAW: My part's not important.

18 BY COMMISSIONER GAW:

19 Q. So where were you when you were measuring?
20 Were you on the top?

21 A. Yeah. We were at the gauge house.

22 Q. Okay. So you measured down so far?

23 A. Uh-huh.

24 Q. And then what did you do?

25 A. Then we fastened them to the -- to the

1 support system in the box and marked them with our tape,
2 actually marked them on the tape before then, and
3 supported them to the box.

4 Q. Okay. And what was the importance of
5 marking them?

6 A. To know what elevation -- I mean, where
7 they were set, so if somebody came to move them or to test
8 them, to do whatever, that they could get them back in the
9 proper elevation where they needed to be.

10 Q. Now, we're talking -- when you say pipes,
11 are we talking about the conduits?

12 A. Yes, the plastic pipes.

13 Q. We're not talking about the probes
14 themselves?

15 A. No. I'm talking about the probes as far as
16 marking the probes, correct.

17 Q. You are talking about the probes?

18 A. Yeah.

19 Q. That's why I wanted to ask.

20 A. Okay.

21 Q. Was it important to actually set the
22 conduits at a certain height?

23 A. Yes. I mean, again, he marked -- I mean,
24 it was pertinent as far as the low and the -- the low
25 level settings because, again, he marked those with white

1 paint. We drilled holes through the pipe, set our probe
2 levels, set our transducer levels. But then on the high
3 end, he did mark it. We didn't use his marking because we
4 couldn't drill the hole because, again, we're ten foot off
5 from the base of the wall, so we couldn't get up to the
6 marking to drill the holes to do kind of the same thing
7 that we did on the lower portions. That's why we measured
8 down from the top of the wall.

9 Q. And that measurement was what you used to
10 place the probes themselves?

11 A. Correct.

12 Q. And the reason it was important on the
13 conduits on the bottom side was because you wanted to make
14 sure they were low enough?

15 A. Correct.

16 Q. Because if they weren't low enough, then
17 your setting of the transducers might be compromised?

18 A. Yes. Well, the transducers had to be
19 proper because, you know, we had them -- which was set at
20 an elevation of 1500 is because it's based on now how much
21 water covers those probes at 1500 feet. So that's why
22 those had to be right on.

23 Q. Were the piezometers, were they attached in
24 any way to the inside of those conduits or were they --

25 A. No.

1 Q. -- free?

2 A. We just slid them down the -- slid them
3 down the pipe. They're pretty heavy. They had a pretty
4 good weight on the end of -- the piezometer itself had
5 some weight to it.

6 Q. Okay.

7 A. But we fasten, of course, fasten the
8 cables, the end of the cable up in the box at the top of
9 the wall.

10 Q. You wanted to make sure they didn't go out
11 of the conduit, the box?

12 A. Well, they weren't going -- they were
13 secured, you know, at top in the box.

14 Q. I mean when you were initially placing
15 them, you had to make sure you didn't have them outside
16 the conduit?

17 A. Right. I think the conduit went down well
18 past 1500 feet.

19 Q. You were putting three of these piezometers
20 in one of these conduits?

21 A. Correct.

22 Q. Give me an idea about the probe or whatever
23 you call it on one of these piezometers in size, in
24 diameter in relation to size of the conduit.

25 A. It was probably, I'm going to say maybe two

1 inches in diameter, would be my guess. I think it was a
2 six-inch pipe. I'm guessing here.

3 Q. Now, if I put -- I'm putting these three
4 probes in one tube, are they all kept at the same height?

5 A. Yes. We wire tied them together, the three
6 right at the base and lowered the three together down.

7 Q. So they were wire tied together?

8 A. Yeah.

9 Q. And how much clearance did they have when
10 they were tied --

11 A. It wasn't an issue getting them down there.
12 Clearances definitely wasn't an issue.

13 Q. It wasn't an issue?

14 A. They slid down really easy.

15 Q. We had a clean conduit at that point?

16 A. Yeah.

17 Q. Again, do you recall how much clearance
18 there was?

19 A. I do not.

20 Q. If they were each two inches and the -- and
21 the conduit was six, depends on how they were stacked
22 together, of course, as to how --

23 A. They were -- they were a triangle, as I
24 recall.

25 Q. That's what I assume. So we -- okay.

1 Well, I guess we could replicate that if we wanted to.

2 A. Yes. We have them and we have the pipe.

3 Q. You don't know if FERC or any of the

4 investigations did that, do you?

5 A. I do not know that.

6 Q. Okay.

7 A. You have to remember, right at where

8 they -- if you're worried that we're blocking the holes or

9 something for this device not to be working --

10 Q. Go ahead.

11 A. -- we drilled that pipe at that 1500 foot

12 elevation pretty severely. So there's a bunch of holes.

13 It looks like swiss cheese right where the probes were.

14 So that really wouldn't have been an issue.

15 Q. I'm trying to understand whether there was

16 any -- any debris or anything that could have gotten in

17 there later that might have impacted that sliding up and

18 down inside those conduits.

19 A. Uh-huh.

20 Q. You don't know the answer to that?

21 A. I don't remember as we pulled them out that

22 there was any issues with any of them being clogged.

23 Q. When you say when you pulled them out, when

24 was that again?

25 A. I don't -- there's -- it was well after the

1 breach. I want to say it was into January or February
2 that they finally pulled those out. They had sent them
3 out and had them tested.

4 Q. Were there two or three in when you pulled
5 them out?

6 A. Three.

7 Q. When the one was disabled earlier in your
8 discussions in the fall of '05, I believe --

9 A. Correct. Well, actually, September --
10 Rick's e-mail, which was September 27, 29th.

11 Q. Yes. It wasn't actually pulled out at that
12 point --

13 A. No.

14 Q. -- to your knowledge? It was just
15 disabled?

16 A. Yeah. It was disabled. They just took
17 that reading out.

18 Q. Now, you referred to, I believe, earlier
19 the operating level being at 1596?

20 A. Correct.

21 Q. Do you know how that operating level was
22 determined?

23 A. I do not.

24 Q. Do you recall who told you or how you knew
25 that that was the operating level?

1 A. I mean, it wasn't my decision. I knew what
2 it was because somebody told me what it was or I seen that
3 it was operating at 1596 or in subsequent e-mails that
4 that was the operating level. But as far as making that
5 my decision or I had an influence on that, no, I did not.

6 Q. Do you know who would have?

7 A. I do not. I can't honestly say. You would
8 think Rick Cooper, but I can't say that Rick made that
9 decision.

10 Q. When determining the operating level, would
11 that have been an actual physical reading based upon some
12 reference point to the wall or would it have been entirely
13 based upon the metered reading from the piezometers?

14 A. Well, it would have been from the meter
15 reading, but they did do a -- I don't know if it was daily
16 or weekly check, that they would -- they had markings,
17 physical markings up on the upper reservoir on the wall
18 showing the different elevations. They would go up there,
19 I think it was once a week, as part of the plant procedure
20 to go up there and verify that the markings on the wall
21 were consistent with what was being read down at the
22 plant.

23 Q. Did you ever witness that being done?

24 A. I did not.

25 Q. How did you know about it?

1 A. I just -- through the investigation, people
2 are talking about it.

3 Q. Do you know whether or not that observation
4 was recorded in some fashion?

5 A. I think it is recorded, but I can't say for
6 sure.

7 Q. And you don't -- you do or do not know
8 where that recording would be kept?

9 A. It would be at the plant, I would venture.

10 Q. Now, in the first instance when there was
11 an issue about the -- well, let me back up.

12 In the December, late November time frame,
13 relating to the -- of '04, relating to Tony Zamberlan's
14 involvement with the moving of the Warrick probes, is
15 there anything else that you can add or any knowledge that
16 you have in regard to why those probes were moved?

17 A. I cannot, other than that's been talked
18 about.

19 Q. Right. And you've already testified that
20 you were aware that they were being moved up, correct?

21 A. Correct.

22 Q. Did you at any point communicate any
23 concern about that to anyone?

24 A. I did not.

25 Q. Did you have any concern about that?

1 A. I did not.

2 Q. Why would you not have had any concern?

3 A. Because I didn't -- I don't -- when I got
4 to the plant, I never knew where they operated, where the
5 high level probes were originally. So I just -- it
6 wasn't -- those numbers didn't mean anything to me. I
7 mean, I just --

8 Q. Which numbers didn't mean anything to you?

9 A. The operating level. I mean, I just -- or
10 the Warricks high and high-high levels. I mean, if Rick
11 thought or whoever selected the location that they put
12 them at, assuming they put them at the location that they
13 feel are proper.

14 Q. But you were involved in the initial
15 setting of the Warricks, right?

16 A. I was involved in that, yes, and I was told
17 I had them set too low.

18 Q. Who told you that?

19 A. Tony Zamberlan. I mean, I had them set at
20 the operating level, is what I was told.

21 Q. Do you recall when that conversation took
22 place, about?

23 A. First of December.

24 Q. Okay. Did he come to you and talk to you?

25 A. No. He called me on the phone, said we had

1 a high level trip. You had them set too low. And I was
2 like, well, at least we checked them, that the high level
3 trip now works. Now it was functionally checked again
4 that it works. So I was a little embarrassed that I had
5 set them too low, to be honest with you.

6 Q. Can you recount that conversation for me to
7 the greatest extent that you can?

8 A. That's as good as it gets.

9 Q. So you were feeling embarrassed that you
10 had them set too low?

11 A. Yes, I was. Well you're an engineer. You
12 want to do things right. Then when someone comes back and
13 tells you you did something wrong --

14 Q. And so Mr. Zamberlan said, hey, you set
15 these too low?

16 A. Correct. They were too low.

17 Q. And did you discuss about moving them
18 higher at that point?

19 A. Again, I don't recollect what, you know,
20 setting or where they were going to be moved. Again, my
21 thought again was, well, they'd been functionally checked
22 again and that I had them too low.

23 Q. Now, you knew where you had set them?

24 A. I did.

25 Q. And at least, whether it was in that

1 conversation or subsequently, you knew they were moved up?

2 A. Correct.

3 Q. Within a few days?

4 A. Correct.

5 Q. Maybe even that day or the day after?

6 A. Correct.

7 Q. And at that point in time, you were also

8 aware or you had been told -- let me say it that way --

9 you had been told by Mr. Bluemner about what the low point

10 was on the parapet wall?

11 A. Back in early November.

12 Q. Of '04?

13 A. Of '04.

14 Q. So you had all that information given to

15 you?

16 A. In November, yeah.

17 Q. And in December, on December 1, after this

18 e-mail from Mr. Zamberlan, you had been told about the low

19 point on the parapet wall and --

20 A. No, not on -- the low point of the parapet

21 wall was never discussed in that e-mail on December 1.

22 Q. My question may have --

23 A. I'm sorry.

24 Q. -- inferred that, but that was not my

25 intent.

1 A. Okay.

2 Q. By the time you received that e-mail from
3 Mr. Zamberlan, referring to the rising of the Warrick
4 probes from your setting, you knew or had been told, in
5 addition to that information, what the low point on the
6 parapet wall was?

7 A. Correct.

8 Q. You had --

9 A. In November that he had told me.

10 Q. I understand what your clarification is.

11 A. Okay.

12 Q. But on December the 1st, after you received
13 that e-mail, the information you had been given up to that
14 time included both of those things, the low point on the
15 parapet wall and your information on where you set the
16 probes and the fact they were being moved up?

17 A. Well, I got --

18 Q. Do you agree with that?

19 A. On December 1, I was given information that
20 they were moving up -- they were moving them up, or Tony
21 was moving them up. But as far as where I had them set
22 and where the low point of the wall was, I guess I'm
23 getting confused on that. It was not in the December
24 e-mail.

25 Q. I didn't say that.

1 A. Okay. I just wanted to make that clear.

2 Q. I'll have the court reporter try to read my
3 question back. Maybe I'll find it as confusing. If it
4 is, I'll try to restate it.

5 A. I may have missed it. I just want to be
6 clear.

7 Q. I understand. It's important,

8 COMMISSIONER GAW: Go ahead.

9 THE REPORTER: "Question: But on December
10 the 1st, after you received that e-mail, the information
11 you had been given up to that time included both of those
12 things, the low point on the parapet wall and your
13 information on where you set the probes and the fact they
14 were being moved up?"

15 BY COMMISSIONER GAW:

16 Q. Do you understand the question?

17 A. Yes.

18 Q. And what's the answer?

19 A. Yes.

20 Q. Now, the other day Mr. Zamberlan was
21 testifying, and in regard to a conversation he had had
22 with somebody at the plant around this time frame about
23 disengaging some -- some of the safety measures. This
24 probably -- this may not be something you can answer, but
25 I'm trying to understand. My recollection is when I asked

1 him about that, he had -- he could not recall how long
2 the, I think the Warrick probes were disengaged. Do you
3 know -- do you know for sure how long they were
4 disengaged?

5 A. No, I do not.

6 Q. Would it be accurate to state in regard to
7 your setting of the Warrick probes that you were basing
8 your 15 -- well, it would be -- what were the numbers
9 again?

10 A. 1596 and 1596.2.

11 Q. That you were basing that placement on
12 Mr. Bluemner's measurements about where that was located
13 on the wall?

14 A. Steve didn't select 1596 and 1596.2. He
15 said he had gotten those measurements from me. The
16 question is, I don't know where I got those levels from.
17 Now, whether I was working on the design, the original
18 design document and that's where originally the high and
19 the high level probes were or I got that verbally, to be
20 honest with you, I can speculate and think that's what
21 happened, but I can't honestly say for certain that that's
22 how I came to those numbers.

23 Q. What would have been the normal protocol to
24 determine what those numbers should be for you? I know
25 you're saying you don't remember, but what would have been

1 appropriate protocol?

2 A. Well, appropriate, I mean, I had documented
3 on several drawings that I had. But as far as a protocol
4 on who would have given me those numbers?

5 Q. Yes.

6 A. There is really no protocol that I'm aware
7 of.

8 Q. Well --

9 A. I mean, I think I would have gotten the
10 numbers from the plant manager or, again, from some design
11 document to the plant. I was going through a lot of
12 documents when I was at the plant, kind of scurrying
13 through things, but I don't recall how I came up with
14 those numbers.

15 Q. I intended to ask you a slightly different
16 question, but I want to follow up on this a minute. In
17 trying to assess where to place the Warrick probes, would
18 you -- would you take into account what the proposed
19 operating level was for the reservoir?

20 A. When you set the high and the high-high?

21 Q. Yes.

22 A. Yes.

23 Q. And were you aware at the time of an
24 operating level or that was proposed?

25 A. I was not.

1 Q. When did you become aware of an operating
2 level at 1596?

3 A. Through the e-mail when Rick was stating
4 what the operating levels were going to be.

5 Q. And I think we hit that this morning. We
6 can go back to those, but if you remember about what the
7 date of those were.

8 A. Sometime in, what was it, late -- late
9 November.

10 Q. Of '04?

11 A. Yes.

12 Q. Well, if the operating level is 1596 and
13 the lowest of your two high Warrick probes is 1596, if
14 both of those are read off of the same things and they're
15 both actually the same levels, you would assume then that
16 would set off the lowest of the two high probes?

17 A. Correct.

18 Q. It would also be extremely important, would
19 it not, to know whether or not the level of the high
20 probes that would go off in the event of being covered
21 with water would be higher -- lower than the lowest point
22 on the parapet wall?

23 A. Yes.

24 Q. Critically important, would you agree with
25 me?

1 A. Critically important.

2 Q. Who was responsible for seeing that that
3 was done?

4 A. I would think the plant manager or the
5 operations.

6 Q. I want to ask you what that means because
7 you said that earlier and I'm not sure. When you say
8 operations, who are you talking about?

9 A. Well, people that are responsible for
10 running the plant.

11 Q. When is the first time you became aware of
12 the Warrick probes being reprogrammed to series from
13 parallel?

14 A. After the breach. We found out when we
15 were doing the testing.

16 Q. Okay. Did you receive any information that
17 let you know that others were aware of that reprogramming
18 prior to that time?

19 A. No.

20 Q. Did you also determine at some point in
21 time that one of the two generating units was set up with
22 the Warrick probes in such a way that it wouldn't have
23 mattered if both probes would have been covered with water
24 for more than a minute, it wouldn't have shut down?

25 A. We found that out also on the 15th after

1 the breach.

2 Q. Now, it's assumed, is it not, that that was

3 not a cause --

4 A. It was not the cause.

5 Q. -- of the breach because that particular

6 generator, according to the records, had been shut down --

7 A. Correct.

8 Q. -- first?

9 A. Correct.

10 Q. And it is assumed that it was shut down

11 based upon -- well, let's say is it your understanding it

12 was shut down before the breach or before the overtopping

13 occurred?

14 A. Correct.

15 Q. And do you know what that's based on?

16 A. The historian tells you what units shut off

17 first.

18 Q. And at what point in time?

19 A. Yes, and level.

20 Q. Comparing levels of the reservoir?

21 A. Uh-huh.

22 Q. Levels of the reservoir measured by what?

23 A. The transducers.

24 Q. And these are the transducers that were not

25 properly functioning?

1 A. Well, they were properly functioning. They
2 were just -- the reference had moved off its base.

3 Q. You're drawing a distinction that I wasn't
4 trying to draw. They were not giving a correct reading?

5 A. Correct.

6 Q. I'm going to bounce around on you.

7 A. Okay.

8 Q. I may come back to some of this. I'm going
9 to focus in on the time frame when the storm went through
10 in September of '05.

11 A. Okay.

12 Q. In that time frame, was there -- was
13 there -- first of all, is it your understanding that part
14 of the theory about the overtopping that occurred in the
15 latter part of September has to do with a storm moving
16 through?

17 A. Yes. The water, I mean, from the waves
18 crashing over the wall.

19 Q. I'm asking whether that's part of the
20 theory of the overtopping was that there was a storm that
21 caused waves?

22 A. Correct.

23 Q. You don't know whether or not that's what
24 caused the overtopping, correct?

25 A. That's correct.

1 Q. You're basing that upon what you've read
2 and been told by others?

3 A. Correct.

4 Q. At the time of the documented overtopping
5 where there's reference to Niagara falls, you recall that?

6 A. Yes.

7 Q. There is some reference to what had been
8 Hurricane Rita passing through, correct?

9 A. Correct.

10 Q. Now, it was no longer a hurricane, was it?

11 A. I don't believe so.

12 Q. And do you have any idea what the -- what
13 the winds were at that point in time?

14 A. I do not.

15 Q. Do you know whether the winds on the top of
16 Profit Mountains are sometimes more significant than what
17 they might be in the lower lying areas?

18 A. Definitely.

19 Q. And that's because it's on the mountain?

20 A. That's because I've been up there and it's
21 been pretty windy.

22 Q. Tends to be windy?

23 A. Yes.

24 Q. So the fact that it's windy on top of
25 Profit Mountain is not altogether unusual, is it?

1 A. I've seen it a couple of times, I'll have
2 to say that.

3 Q. It would be something that would be
4 foreseeable that a storm could come through or that there
5 would be wind on top of Profit Mountain; would you agree?

6 A. Yes.

7 Q. Did you get copies of any of the interviews
8 from the FERC investigation?

9 A. Interviews from other people?

10 Q. Yes.

11 A. No.

12 Q. Well, your particular testimony.

13 A. Yes, I did.

14 Q. Do you have any of that with you?

15 A. I do not.

16 Q. Is that something you could produce?

17 MR. BYRNE: We can produce it. There's an
18 issue of FERC has labeled it confidential energy
19 infrastructure information. We've given -- we've provided
20 it to the Staff, but everybody who sees it has to sign a
21 FERC designated form. And if we make it part of the
22 record, you know, literally every individual that looks at
23 it has to sign this FERC form. That makes it really hard
24 to make it a part of this record here.

25 COMMISSIONER GAW: I see. That makes it

1 somewhat complicated.

2 MR. BYRNE: Yes.

3 COMMISSIONER GAW: I should tell you that I
4 have made a personal inquiry of FERC about this
5 information to see whether or not it can be made more
6 accessible. I haven't gotten a response yet.

7 MR. BYRNE: Good luck with that.

8 COMMISSIONER GAW: Yes.

9 BY COMMISSIONER GAW:

10 Q. In regard to your -- to your relationship
11 with Mr. Zamberlan in this project, if he came in with a
12 proposal that you disagreed with, who would be able to
13 overrule?

14 A. Well, we would discuss it, of course, and
15 if I didn't agree with it, we'd probably go to Bob
16 Ferguson, my boss at the time, and discuss it.

17 Q. Okay. Well, so are you saying that you
18 couldn't just say, no, I don't like this idea, Tony, we're
19 going to do it this other way?

20 A. It never came up. It's tough for me to
21 answer that.

22 Q. So you really didn't have any disagreements
23 that you can recall?

24 A. No.

25 Q. When you were discussing going up to --

1 excuse me. When you were going up -- subsequent to the
2 breach, when you first went up to check the instruments,
3 with Mr. Scott?

4 A. Correct, Bob Scott.

5 Q. Bob Scott. Thank you. There are two of
6 them. I'll get that confused. Describe, if you can, what
7 you can recall of the conversation you had with him on the
8 way.

9 A. I know he was tired because we were
10 climbing up the side of the mountain to get up there. I
11 really can't. I was pretty panicked to get up there and
12 see what had happened.

13 Q. Well, and you used that word before. Tell
14 me -- it's probably obvious, but tell me why you were
15 panicked.

16 A. I was very upset that, you know, the
17 reservoir failed.

18 Q. Were you concerned that it might have
19 something to do with any of your work?

20 A. Well, sure.

21 Q. Did you have anything in particular that
22 you wanted to examine when you were going up there that
23 you thought would be of a concern?

24 A. Wanted to look at the Warrick probes, of
25 course. That was our backup protection.

1 Q. That was what was designed to be the backup
2 protection, correct?

3 A. Correct.

4 Q. But you don't recall any particulars of the
5 conversation?

6 A. I do not.

7 Q. Earlier when the discussion was going on
8 about -- and I'm back in September in '05 --

9 A. Okay.

10 Q. -- after there had been the overtopping.
11 You were describing a discussion about or an e-mail -- I
12 can't remember which -- about the lowering of the level of
13 the reservoir by two feet.

14 A. Uh-huh.

15 Q. Do you recall that?

16 A. Yes.

17 Q. And again, who was it that was involved
18 with that communication?

19 A. That actually lowered, I have no idea.

20 Q. No. The communication about it.

21 A. That I found out that it was lowered two
22 feet, it was Rick Cooper.

23 Q. And was that by e-mail?

24 A. No. That was in a conversation in his
25 office.

1 Q. Was it your understanding when he was
2 talking about lowering the reservoir by two feet that he
3 was talking about lowering the actual operating level in
4 reference to a particular point on the parapet wall or
5 that he was referring to lowering the readings inside of
6 the instrumentation so that it would show that it was to
7 shut off at two feet lower than what it had already --

8 A. I assumed he was taking a control system
9 set point that shuts the pumping off at two foot less than
10 what it normally had been.

11 Q. Okay. And did you believe that that was an
12 appropriate response?

13 A. Yes, I did.

14 Q. Tell me why.

15 A. Because I just -- two feet lower than what
16 it normally was shutting down at, it seemed like a prudent
17 number to me, you know.

18 Q. What was that -- what assumptions did you
19 base that upon?

20 A. That there was a lot of people involved in
21 that decision a lot smarter than me.

22 Q. That sounds like the country lawyer stuff.
23 Let me --

24 A. I didn't -- I'll be honest with you. I
25 really -- I mean, again, there were a lot of people

1 involved in that decision, but after this investigation,
2 that two feet was selected --

3 Q. Who was it -- I don't want to walk over
4 what you're trying to tell me, so finish.

5 A. That's fine. That that was -- again, that
6 two feet level, to lower it two feet seemed to be a smart
7 move, in my opinion, for what they were doing.

8 Q. Turned out not to be smart, correct?

9 A. Correct.

10 Q. Who was involved in that decision?

11 A. I do not know that.

12 Q. But you just said that you thought they
13 were smarter than you, so you must have some concept of
14 who it was.

15 A. Well, Rick Smith -- or Rick Cooper, I mean,
16 the plant manager that runs the plant.

17 Q. Okay. Who else? You said there were
18 others.

19 A. I think that Bluemner was on that e-mail.
20 And again, this is after I've seen the e-mail, after the
21 investigation. And I think Mark Birk was on that e-mail,
22 and I don't know who else.

23 Q. Okay. Do you believe all of them were
24 involved in that decision that were on the e-mail?

25 A. I'm assuming.

1 Q. Now, in coming to the conclusion that two
2 feet was a good adjustment, would it be true that you
3 would have to assume that the variance from the true
4 reading or from an accurate reading by the piezometers
5 would have to be off no more than two feet?

6 A. Correct.

7 Q. And what would have been the factual
8 information available at the time that would have allowed
9 someone to draw that conclusion?

10 A. I can't answer that.

11 Q. Can you explain why you can't answer it?

12 A. Because I don't know that the construction
13 of the gauge piping to know how much it would lift or how
14 much it would come loose. I'm not a mechanical engineer.

15 Q. So when you say you think that -- you
16 thought at the time that made sense or that was smart --

17 A. Right.

18 Q. -- that isn't based upon your having an
19 understanding of all of the factors that might go into
20 making that decision?

21 A. Correct.

22 Q. Because you did not know at that point in
23 time what the possible variation might be with those
24 conduits being unsecured down in the water, right?

25 A. Right.

1 Q. It was possible that those things were
2 moving around significantly, wasn't it?

3 A. That could be. I couldn't answer that.

4 Q. In fact, are you familiar with any
5 investigations internally that were done by Ameren
6 employees in regard to the potential fluctuation that
7 could have occurred with those conduits as they were
8 unsecured?

9 A. After the breach?

10 Q. Yes.

11 A. I know they were looking at it. I
12 wasn't -- on the 15th, they were down there looking at the
13 bow in the pipe and trying to figure out how much it had
14 bowed. That was my only involvement or seeing them do
15 that. After that, I don't know if they investigated any
16 further or not.

17 Q. That was on the 15th of December --

18 A. Correct.

19 Q. -- of '05, correct?

20 A. Correct.

21 Q. And if there's a reference in any of the
22 follow-up investigations to Ameren doing some
23 investigation in that regard, you're not aware of what
24 that was?

25 A. No.

1 Q. You were asked a few times about your
2 reading some of these follow-up reports from the FERC,
3 from the independent panel of consultants, from Rizzo and
4 from Siemens. Did you -- I believe you testified that you
5 didn't read them.

6 A. The -- the FERC report I did not read.

7 Q. What did you read?

8 A. I think I read the Siemens report.

9 Q. Anything else that was on that list?

10 A. What was the other one you had mentioned?

11 Q. There's an independent panel of consultants
12 report that was done for FERC. There is --

13 A. That was by Siemens?

14 Q. No.

15 A. Okay.

16 Q. It was -- it was not done by Siemens.

17 A. I don't think I've read that one.

18 Q. It was -- and I can give you a copy of it
19 if that would help you. But it's, I think, Alfred
20 Hendren, Joseph -- I can't pronounce his name --
21 E-h-a-s-z.

22 MS. HOUSE: Ehasz.

23 COMMISSIONER GAW: Ehasz?

24 MS. HOUSE: Ehasz.

25 COMMISSIONER GAW: Thank you.

1 BY COMMISSIONER GAW:

2 Q. And Kermit Paul, which may not be
3 pronounced Paul.

4 MS. HOUSE: It is.

5 THE WITNESS: Yeah. Those names don't ring
6 a bell.

7 BY COMMISSIONER GAW:

8 Q. And then there was the Rizzo report.

9 A. That I know I didn't read.

10 Q. I believe the Rizzo report incorporates
11 some of the Siemens report in it.

12 A. Okay. I did read the Siemens report.

13 Q. Did you -- do you recall whether or not you
14 agreed with the Siemens report?

15 A. As far as I can recall, yeah, I agreed with
16 the Siemens report.

17 Q. You don't remember anything that you
18 disagreed with?

19 A. Not that I can think of.

20 Q. And I have it here if you want to look
21 through it, if that would be helpful. Would you like to?

22 A. No. That's fine.

23 Q. Okay. Now, you were made aware or observed
24 in September or October of '05 the distance from the
25 parapet wall to the Warrick probes, correct?

1 A. Correct.

2 Q. Again, when was that in that time frame?

3 A. That first week in October.

4 Q. Did that cause any concern when you saw

5 that?

6 A. Where they were set?

7 Q. Yes.

8 A. No, not at -- no, it did not.

9 Q. And again, previous to that, you had been

10 told what the low point was on the parapet wall, correct?

11 A. Correct.

12 Q. And, in fact, if you had that information

13 side by side, you would have been able to see that those

14 probes were too high?

15 A. Correct.

16 Q. Who else was aware of the distance from the

17 top of the parapet wall to the probes in that time frame

18 of '05, first week of October?

19 A. Obviously the people in the e-mail that I

20 sent it to, and Bob Scott who was up there measuring with

21 me.

22 Q. Bob Scott again is at the plant on a

23 regular basis?

24 A. Plant technician, correct.

25 Q. Plant technician. How long has he been

1 there? Do you know?

2 A. I do not. I know he's a senior guy.

3 Q. Probably been there for a while, though?

4 A. Been there a while.

5 Q. Would he have any knowledge that you are

6 aware of in regard to the parapet wall heights?

7 A. I can't answer that.

8 Q. I think you clarified this, but I want to

9 make sure. You make the statement in the patrol report at

10 some point in time, according to their version, that the

11 Warrick probes must have been raised, but you don't know

12 by who?

13 A. Correct.

14 Q. When you say you don't know by who, are you

15 referring to who actually physically moved them?

16 A. Correct.

17 Q. You are not referring to a lack of

18 knowledge of Tony Zamberlan's involvement in the movement

19 of those probes?

20 A. Based on the e-mail. I mean, based on the

21 e-mail, it obviously says Tony was involved in moving the

22 probes.

23 Q. Yes. When those probes would have been

24 moved, who would be normally responsible for actually

25 physically moving those probes?

1 A. I would think there would have been a plant
2 technician.

3 Q. Okay. Somebody that actually worked
4 onsite?

5 A. I would think so.

6 Q. When you placed them initially, you were
7 personally involved, correct?

8 A. I was working with Sachs Electric, who was
9 the contractor for the upgrade.

10 Q. And Sachs was also involved in that
11 movement at that -- or the placement at that time?

12 A. Yes.

13 Q. Would it have been -- and that was in part
14 because there had to be some work done to --

15 A. Securing --

16 Q. -- bring all this together, right?

17 A. Correct.

18 Q. It wouldn't have been necessary, would it,
19 for Sachs to have been involved with the subsequent
20 movement and raising of this probe?

21 A. I can't answer that. I don't know if
22 they're onsite or not at that time.

23 Q. Let me ask it a different way. If you're
24 going to move the probe up from where you placed it to
25 where you ended up finding it later on, what do you have

1 to do?

2 A. You would have to remove wire tie, remove
3 the Kellum's grip and move it up.

4 Q. How much time would that take?

5 A. And then do the measurement also?

6 Q. Yes.

7 A. Probably -- take the cover off? To do the
8 whole process from start to finish?

9 Q. Yes.

10 A. Probably be half hour.

11 Q. Half an hour. And would you need any
12 special training to do that?

13 A. No.

14 Q. Would you need to know what was inside of
15 the box to do it?

16 A. What was inside the box?

17 Q. Yes.

18 A. No.

19 Q. If you had never looked in there before,
20 how would you know what to do?

21 A. Well, you take -- I mean, wire ties for an
22 electrician are fairly straightforward. Kellum's grips
23 are something that they normally use. I mean, they're not
24 very -- you know, they're pretty simple devices.

25 Q. But it's likely that a technician would

1 have done it?

2 A. True. I believe so.

3 Q. Okay. I'm somewhat unclear about whether

4 or not when you looked at the probes in October of '05,

5 the other tape besides the black tape was still there?

6 A. Yes.

7 Q. It was?

8 A. The colored tape.

9 Q. Yes.

10 A. But it wasn't at the -- I mean, the black

11 tape was at the elevation that they were set at.

12 Q. But the other tape was also there?

13 A. Yes.

14 Q. So it would have been -- where would it

15 have been in the box?

16 A. Down further in the box.

17 Q. Down in the box. And the same -- you found

18 the same thing post breach?

19 A. Yes.

20 Q. When you placed the probes initially in

21 '04, the Warrick probes, do you know what the design was

22 in regard to the alarm or shutdown system as it was

23 placed? Were you familiar with that?

24 A. As far as the logic?

25 Q. Yes.

1 A. Yes. I reviewed the logic, and basically
2 any probe -- either probe gets wet, it would trip the
3 unit.

4 Q. It would trip it?

5 A. Would trip it.

6 Q. So would it be fair to say that you were --
7 it was -- it was placed in action so that it was -- there
8 were, in effect, two backups, two safety devices?

9 A. Correct.

10 Q. So if the first one for some reason failed
11 when the water hit it, then you had a backup to that
12 backup system?

13 A. Correct.

14 Q. Okay. Now, the reprogramming that you --
15 that you later found to have been done, that erased that
16 dual safety system?

17 A. Correct.

18 Q. Now, in your statement, you said that that
19 didn't make sense to you, correct?

20 A. No, it did not.

21 Q. Okay. But you did understand it for the
22 low and the low-low probes?

23 A. Correct.

24 Q. Would you explain that in more detail for
25 me?

1 A. Because it's a failsafe device. So if it
2 loses power or it's uncovered, it trips. So it's --
3 again, it's a safer device than having something that you
4 need to energize to operate. This was de-energized to
5 operate.

6 Q. Can you explain that a little more in
7 layman's language what you're saying?

8 A. Okay. So -- well, that's kind of --

9 Q. That was layman's language. Yeah, I
10 figured.

11 When the reservoir is generating --

12 A. Correct.

13 Q. -- it's pumping down or it's generating?

14 A. So you're really not -- I mean, that's a
15 safe mode of operation because as far as overtopping is
16 concerned, which is the biggest threat.

17 Q. Yes.

18 A. And you're generating down, so your water
19 level is coming down. So if you covered -- uncovered the
20 probe and the probe is not wet anymore, that's when it
21 operates. So kind of why you put those in series is
22 because he was having an issue with the power and/or the
23 relay was failing. So that's why they put two, kind of
24 make it more secure and safe.

25 Q. So what's the danger or the potential down

1 side of the low and low-low probes not working?

2 A. Cavitation to the unit.

3 Q. What does that mean?

4 A. Just shortens the life.

5 Q. Can the water level get down so low that
6 you actually don't have any water there to pump up, it's
7 below the generating units, kind of like not primed?

8 A. Well, yeah, you have to go through -- yeah,
9 I can't answer that question. I can try, but it probably
10 would sound very intelligent.

11 Q. More intelligent than my question. So if
12 you're dealing with this issue of -- again, you're not
13 dealing with the same safety issues --

14 A. Exactly.

15 Q. -- as you are when you have the potential
16 of overtopping?

17 A. Exactly.

18 Q. Do you know whether the low probe as it was
19 reprogrammed to series set off any alarm as opposed to a
20 shutdown? Did it set off any alarm?

21 A. Well, I do believe he had on the low-low
22 there was an alarm. I don't believe there was on the low.

23 Q. Was there both an alarm and a shutdown when
24 you hit the low-low?

25 A. Well, he's down low. It would have to go

1 off the low and the low-low to deactivate to trip the
2 unit.

3 Q. Okay. But was there a separate signal on
4 an alarm?

5 A. Well, it would have been off the same
6 signal. It's just through the software.

7 Q. All right.

8 A. So it would have been the same device
9 giving you that alarm off of the low-low Warrick.

10 Q. What I'm trying to get to is whether or not
11 there is a -- there was any programming that would have
12 resulted in, A, event occurring, sets off an alarm, A plus
13 B, both occurring shutting down the unit.

14 A. I got you. I can't answer that.

15 Q. And would it have been possible to design
16 the high and high-high probes that way, so that if it hit
17 the first high probe, an alarm sounded but did not shut
18 the unit off, but hitting then the second one would have
19 shut it down?

20 A. You can do it that way, yes, but --

21 Q. It never was set that way, correct?

22 A. No, it was not.

23 Q. And there was no alarm that would have gone
24 off on the high probe if it was the only one hitting the
25 water?

1 A. Correct.

2 Q. That's as it was reprogrammed?

3 A. Correct.

4 Q. The initial programming?

5 A. The initial, I don't know if the high had
6 an alarm associated with it. I don't recall. Should
7 have.

8 Q. It should have, but you don't remember?

9 A. I don't remember. But it was a trip, so
10 they would have known, right, if it came in on the alarm
11 log because it's a unit trip.

12 Q. If it trips, it's already performed --

13 A. Right.

14 Q. -- the safety function?

15 A. Exactly.

16 Q. So the alarm is really at that point almost
17 meaningless?

18 A. Correct.

19 Q. When Steve Bluemner -- I'm jumping around
20 here again.

21 A. Okay.

22 Q. When Steve Bluemner was discussing with you
23 the survey that he did on the parapet wall in '04, did he
24 explain to you what the purpose of the survey was that he
25 had done?

1 A. I do believe it was for a FERC report.

2 Q. Are you familiar with the FERC reports on
3 that subject?

4 A. No, I'm not.

5 Q. Do you know who else was aware of what
6 survey?

7 A. I am not.

8 Q. During the discussion in the fall of '05
9 that you were having by e-mail regarding the wind speed
10 transmitter, was there any discussion about placing
11 cameras on the top of the reservoir?

12 A. There was. Yes, there was.

13 Q. Do you recall that?

14 A. Yeah, I do, but I don't remember -- I don't
15 know if that was Bob Ferguson's idea. But yeah, there was
16 camera discussions.

17 Q. What was the -- describe that conversation
18 and tell me --

19 A. I have to be honest with you. I'd
20 forgotten all about that until you just mentioned it, to
21 tell you the truth.

22 Q. It was not put in the plan of action?

23 A. No, it was not.

24 Q. Do you recall why not?

25 A. I do not. But I think actually there were

1 security issues, and they were going to put cameras up
2 there anyways. I think this was even before the breach.
3 I'm kind of just shooting from the hip there.

4 Q. Okay. If cameras would have been placed so
5 that they could -- there could have been a view of the --
6 with appropriate lighting, of course, there could have
7 been a view of the water levels at certain places in the
8 reservoir, would that have provided additional information
9 in regard to the level of the water that would have been
10 valuable? Would you say yes?

11 A. Yeah, I would say yes.

12 Q. Did you -- in that same time frame, after
13 you discovered in October the height of the Warrick
14 probes, did you ever suggest lowering them?

15 A. Well, I did in my e-mail. I said if they
16 wanted to lower them, we could do that, but then caveated
17 by saying, you know, but I think we moved these up because
18 of the wave action.

19 Q. Well, let's look at it from a different
20 perspective for a moment. If the water level of the
21 reservoir were brought down for operational purposes, it
22 wouldn't have caused as much of an issue if the Warrick
23 probes were also lowered, correct?

24 A. Correct.

25 Q. Why would that not have been an appropriate

1 way of dealing with the safety question?

2 A. I can't answer that. It would have been
3 appropriate, but I can't answer why it wasn't done.

4 Q. You can't. Were you involved in any
5 discussions about that?

6 A. I was not.

7 Q. Or communication of any kind?

8 A. I was not.

9 Q. And when you suggested it, what kind of a
10 response did you get with regard to lowering the probes?

11 A. I didn't get any response.

12 Q. And who was -- who was involved in that
13 communication from you?

14 A. Well, it was just the e-mail that I had
15 sent out to the people on that e-mail run, Bob Ferguson
16 and Rick Cooper and Jeff Scott and Robert Lee and Steve
17 Bluemner.

18 Q. Are any of those people outside of the
19 plant?

20 A. Outside of the plant?

21 Q. Yes.

22 A. Yes. Bob Ferguson and Steve Bluemner.

23 Q. Okay. Did you have any involvement in
24 discussions regarding fixing the conduits?

25 A. No, I did not.

1 Q. Or just generally that it needed to be
2 fixed?

3 A. I knew it needed to be fixed, but as far as
4 a course of action, how it was going to be fixed and when
5 it was going to be fixed, no.

6 Q. Did you see it as a safety issue?

7 A. I did not see it as a safety. I mean, once
8 the level was lowered two feet, I didn't take it as a
9 safety issue.

10 Q. When you -- go ahead, finish.

11 A. Well, here we go.

12 Q. When you thought it was being lowered by
13 two feet, were you -- was it your understanding that it
14 was being physically lowered two feet from where it had
15 been operated at on the wall or that the piezometer
16 reading was being adjusted two feet?

17 A. The operating point of the reservoir was
18 being lowered two feet.

19 Q. Compared to what?

20 A. Compared to or measured by the transducers.

21 Q. Okay. Which you knew were not giving you
22 accurate readings?

23 A. Correct.

24 Q. We have kind of covered that, I think, so
25 I'll --

1 A. Yeah.

2 JUDGE DALE: Let's take a ten-minute break,
3 after which I'm going to lock the back doors and you won't
4 be able to come back in. So if you guys can get back in
5 here by ten minutes, I'm going to lock them up in 15. You
6 can leave, but you can't come back.

7 (A BREAK WAS TAKEN.)

8 JUDGE DALE: For the sake of the record,
9 let me clear up what I misspoke earlier. You can get in
10 and out of the courtroom by this door back here. It's
11 just those doors toward the street that are locked. So I
12 don't want to be creating the impression that this is a
13 secret public hearing.

14 CHAIRMAN DAVIS: Did you broadcast that on
15 the Internet?

16 JUDGE DALE: No, just on the record,
17 because I just am now taking off the mute.

18 We're ready for Commissioner Gaw to resume
19 questioning the witness.

20 COMMISSIONER GAW: I tried to get the
21 Chairman to intercede, but he seems to not want to do that
22 yet.

23 BY COMMISSIONER GAW:

24 Q. All right. You were asked earlier, I
25 believe, about the different things that you proposed

1 doing in October of '05 that didn't end up getting done
2 before the breach occurred; is that correct?

3 A. That is correct.

4 Q. And I don't recall whether you said why
5 that didn't occur. If you did -- if you would, please
6 tell me.

7 A. I can do that. The main thing was the wind
8 transmitter. We had ordered it. It arrived onsite, and
9 then we realized it was the wrong -- it wasn't right, so
10 we had to send it back. They shipped out another one. So
11 that was one reason.

12 Then the other reason was in October I was
13 transferred to a new department. So I was basically
14 relinquishing my duties to a consultant, Mike Whery of
15 Sega, and so he was going to go ahead and implement those
16 changes. And so it was a process of -- he was aware of
17 what we were going to do, but nothing formal had been laid
18 down on paper to get what was going to get done, but we
19 were in the process of doing that when the breach
20 occurred.

21 Q. Now, you would have been working with this
22 individual with Sega before this?

23 A. On other projects?

24 Q. No. On this project. When did you start
25 working with him?

1 A. He was actually -- he was onsite and he was
2 actually getting ready for the Phase 2 controls upgrade.
3 So he was down in the plant doing odd jobs, so --

4 Q. Okay. Beginning about when?

5 A. I want to say it was probably the early
6 part of December.

7 Q. How did you communicate? December of '04?

8 A. No. December of '05.

9 Q. '05. Okay. And you left in October
10 of '05?

11 A. Well, I mean, I was -- I left in -- I mean,
12 I was in and out at the plant after the outage, but I
13 mean, I wasn't stationed at Taum Sauk through the course
14 of '05. I mean, again, it would just be going down there
15 doing odd jobs, basically getting ready for this Phase 2
16 controls upgrade. So yeah, I want to say he was down
17 there December, early part of December.

18 Q. What was your responsibility in regard to
19 implementing the proposals that you made or that you had
20 put out in October? What was your responsibility?

21 A. Well, again, I ordered the equipment. So
22 the equipment basically arrived onsite, and was going to
23 interface with this consultant to install the equipment.

24 Q. Okay.

25 A. So I would have did some hand sketches,

1 said, hey, this is what we need to do and get them to him,
2 and then lined up Chris Hawkins to do the HMI and any
3 programing that needed to be done.

4 Q. What I'm trying to get to here is an
5 understanding of the handing-off process that would have
6 been going on. In order to understand that, first I would
7 like to know what you would have done if you had continued
8 on the project in regard to these changes that were
9 proposed first.

10 A. I would have done hand sketches and worked
11 with either a contract electrician or a plant electrician
12 and installed the equipment.

13 Q. And what portion of that did you actually
14 get done before?

15 A. Procurement of equipment.

16 Q. That was it?

17 A. That was it.

18 Q. And then who would have been responsible
19 for the things you would have done if you would have
20 stayed there?

21 A. That would have been -- oh, actually to
22 install the equipment?

23 Q. Installing, the sketches, all of the things
24 you --

25 A. If I was still there, I would have done the

1 sketches, and the installation equipment again would have
2 either been a plant technician or a contract electrician.

3 Q. Would you have been the one that procured
4 them?

5 A. Yes, which I did.

6 Q. You did do that?

7 A. I did procure the equipment.

8 Q. Okay. But you did not have an opportunity
9 to finish what your role would have been --

10 A. Correct.

11 Q. -- because you left?

12 A. Because --

13 Q. You moved?

14 A. Right. I was being transferred.

15 Q. So who was supposed to finish those things
16 that you would have done?

17 A. Mike Whery of Sega.

18 Q. All right. And what did you do in regard
19 to communicating with him about what those
20 responsibilities were?

21 A. Again, it was a verbal conversation with
22 him saying, hey, these things have got to get done. I'll
23 sit down with you and we'll talk about what I'm thinking
24 that needs to get done. And that didn't happen.

25 Q. That conversation didn't happen?

1 A. No. That conversation happened, but the
2 actual sitting down and planning out exactly what we were
3 going to do didn't get done.

4 Q. Why not?

5 A. Just workload and, you know, doing
6 different things.

7 Q. Okay. Was that your responsibility to set
8 up that, his?

9 A. It was my responsibility.

10 Q. Are there any written protocols for that
11 handoff procedure that you're aware of?

12 A. Not that I'm aware of.

13 Q. In the conversation that you had with him
14 in regard to these changes, did he express any opinion
15 about whether or not they were good ideas, bad ideas,
16 indifferent? What would you say?

17 A. I don't remember him ever commenting either
18 way. I don't think I got specific enough for him to
19 really make a comment.

20 Q. How specific do you remember being?

21 A. Pretty generalization. We need to put a
22 wind transmitter up there, add another Warrick probe.
23 Actually, Chris had already put the three displays, I do
24 believe, for the transmitter level readings, so I think
25 Chris had already done that.

1 Q. When you say transmitter level readings,
2 what do you mean?

3 A. We were going to -- each individual
4 transducer was going to have a readout. Instead of
5 averaging all three and just seeing the one, we were going
6 to put each individual one so that they could see, then,
7 if one was drifting further from the other.

8 Q. Okay. But the specifics in regard to
9 instructions of what you would have been doing, you never
10 had the chance to finish that --

11 A. Correct.

12 Q. -- conversation with him?

13 A. Correct.

14 Q. Did you relay to the individual -- what was
15 his name again? I'm sorry.

16 A. Mike Whery.

17 Q. Mike Whery. Did you relay to him the level
18 of importance of getting these things done?

19 A. They needed to get -- yeah, I think so. I
20 mean, it needed to get done. And I'm trying to figure out
21 when that -- the wind transmitter showed up at the plant.
22 And there were some issues with lining up a pipefitter to
23 come in because it was pipefitter's work to build the mast
24 to hang the wind transmitter off of, and then whether the
25 plant was going to do the installation or we were going to

1 contract an electrical contractor to do the installation.

2 There were other issues that we had to figure out.

3 Q. I'd like to focus on the placement of an
4 additional Warrick probe for a moment.

5 A. Okay.

6 Q. Was that probe ordered?

7 A. Yes.

8 Q. And did it arrive?

9 A. Yes.

10 Q. When?

11 A. I don't know. I just know it was there.

12 Q. It was there when, did you discover?

13 A. Well, I know at the time of the breach
14 because it was actually up at the upper reservoir.

15 Q. It was sitting up up there somewhere?

16 A. Yeah, I think so.

17 Q. Do you recall where?

18 A. I do not.

19 Q. Was it just like the others?

20 A. Yeah. Well, it's a probe and then the wire
21 with it, that came with it.

22 Q. Okay. Is there a difference between that
23 and what the others looked like?

24 A. No.

25 Q. And it was going to be placed, according to

1 your plan, in which of the conduits?

2 A. It would have been in the conduit that the

3 other Warrick level probes were in.

4 Q. So that would have been?

5 A. Second from the left.

6 Q. Okay. Are the probes on the Warricks about

7 the same diameter as the ones on the transducers?

8 A. I'm going to say maybe a little smaller.

9 Q. What was the reason why you weren't

10 utilizing the two extra conduits?

11 A. They were there just for spares, just in

12 case anything happened.

13 Q. Like? Such as?

14 A. I don't know. You'd have to talk to Steve.

15 He designed it.

16 Q. You weren't aware of the fact that one of

17 those conduits was originally designed to be filled with

18 concrete, were you?

19 A. After the investigation, yes.

20 Q. Not before?

21 A. Not before. Not that I remember anyway.

22 Q. You were going to place this additional

23 Warrick probe at a different level than the other two,

24 correct?

25 A. Correct.

1 Q. What was your intent in regard to placement
2 of that?

3 A. Just below 1596, just below the stop set
4 point. Again, so that Warrick would always -- every time
5 they went to stop on a pump cycle, that it should pick up.
6 Now, what we were going to do with it, put an alarm on it
7 or if -- again, that really hadn't been decided. Just
8 another safety point.

9 Q. Okay. And you were going to -- you said
10 you were going to place it below the 1596 level?

11 A. Correct.

12 Q. Now, was -- you said that you didn't -- no
13 decision had been made about whether to put an alarm on
14 it --

15 A. Well, I mean --

16 Q. -- or quick shutdown or something. Would
17 it be possible that you might have put a quick shutdown on
18 it?

19 A. Right. It could have.

20 Q. Now, that would have also gotten you back
21 in the same scenario you were a year before where you
22 were -- if you assume that the water level was at 1596,
23 correct?

24 A. I lost you there. That we weren't really
25 at 1596 when we were setting up the probe?

1 Q. Well, that's -- that's another problem
2 here, but let me -- what I'm talking about is when you get
3 into the question of when you set the probes initially on
4 the Warricks, you set one at 1596 and one at 1596.2,
5 correct?

6 A. Correct.

7 Q. And you said that they were then moved up?

8 A. Correct.

9 Q. And I believe you said in part because the
10 operating level was at 1596?

11 A. Correct.

12 Q. So what I'm talking about is then, once
13 again, we're revisiting this question of placing a Warrick
14 probe at 1596 or below?

15 A. Correct. Actually, two inches below was
16 what the plan was.

17 Q. Okay. I understand. Was there an
18 assumption that the operating level, the actual operating
19 level of the reservoir would have been below 1596?

20 A. The operating?

21 Q. Yes.

22 A. No. The point of that was put in there,
23 again, we kind of discussed this with Chris Hawkins. I
24 kind of looked at it like, okay, so any time they go to
25 pump stop, we can alarm this and it should show up in

1 historian that, hey, the Warrick probe at 15-- well, less
2 than 1596 got wet, and then you had a pump shutoff. Now,
3 say you could have set it up saying, okay, so after, say,
4 20, 30 seconds and you've hit this 1596, just below that
5 and you haven't gotten a shutoff from your transducers,
6 hey, go ahead and shut off because your transducers are
7 out of the picture or whatever.

8 Q. Okay.

9 A. I mean, there were a couple of things we
10 were thinking about doing.

11 Q. Now, did you believe in your mind at that
12 time when you made that proposal in the fall of '05, that
13 the result of having that Warrick probe would have allowed
14 the operating level to be placed back up at 1596 or that
15 it would simply -- the operating level would remain
16 approximately at the same level and it would have given
17 you an additional safety warning?

18 A. Correct.

19 Q. The latter?

20 A. The latter, additional safety.

21 Q. So your assumption was at that point in
22 time that the actual operating level, as you look at the
23 wall and the actual height, regardless of what the reading
24 was on the transducers, was still about 1596 at that point
25 in time?

1 A. Correct.

2 Q. So in essence, your assumption was the
3 actual operating level of the reservoir after the
4 September 27th, '05 overtopping and the discovery of the
5 transducers in the first week of October of '05 having
6 been dislodged to some degree, that the operating level
7 actually was never changed?

8 A. When they said they're going to lower it
9 two feet? No, I don't agree with that at all.

10 Q. That's what I'm trying to get at. I'm
11 afraid we're going to go around this again.

12 A. Yeah. I'm missing your point here.

13 Q. My point is, if I set -- if I'm looking at
14 my transducer information and I change the amount by two
15 feet --

16 A. I understand. Okay.

17 Q. -- I'm trying to understand whether you-all
18 were assuming that that actually lowered the amount of
19 water in that reservoir below the normal operating level
20 that you had with all the safety devices on it or whether
21 or not you were trying to maintain approximately the same
22 volume of water in that reservoir at that point in time.
23 That's what I'm -- that's what I'm asking.

24 A. This -- the fifth probe we were putting in
25 here at 1596 or just below that, that was going to be a

1 permanent installation that would have been, you know,
2 again, another safety point. It wouldn't allow them to
3 operate with these -- with the gauge pipes in the
4 condition that they were in to be able to keep operating
5 at 1596. That wasn't the purpose of the -- that fifth
6 Warrick probe.

7 Q. I think I understand what you're telling
8 me, but that's not really what I'm asking you.

9 A. Okay.

10 Q. What I'm trying to understand is what your
11 assumption was in regard to the actual operating level of
12 Taum Sauk right after this discovery that the transducers
13 were dislodged or freed up from some of their structural
14 supports.

15 A. Right.

16 Q. Not what the reading was, but what the
17 actual operating level was assumed to be. Do you know?

18 A. No, I don't know.

19 Q. Would it be fair to say that that would be
20 a lot more important to know than what the incorrect
21 readings were on the piezometers?

22 A. You're going to have to repeat your
23 question. I totally am not getting it. I can be a little
24 thick at times.

25 Q. You're left-handed, aren't you?

1 A. Yes, I am.

2 Q. I am, too. This is what our problem is. I
3 wish we had something we could draw on. That way we'd
4 both understand what we're talking about.

5 A. I just want to be clear to make sure I'm
6 not going to say something --

7 Q. I understand, and I'm not trying to get
8 you --

9 A. No.

10 Q. -- into a position where you're saying
11 something you don't intend.

12 A. You'll have to draw it. You've seen my art
13 work.

14 Q. It's much better than mine.

15 A. I don't see how that could possibly be
16 true.

17 Q. Let's say -- let's say that there was an
18 assumption that the operating level of the Taum Sauk
19 reservoir at the beginning of '05 was 1596.

20 A. Okay.

21 Q. Would that be a fair thing to say about the
22 assumption?

23 A. Yes.

24 Q. Okay. Now let's say that we roll around
25 into the first week of October of '05.

1 A. Okay.

2 Q. And you have discovered -- it has been
3 discovered that these transducers, these conduits are
4 dislodged someplace down in the reservoir. All right?

5 A. Okay.

6 Q. And you know that the -- the Warricks are
7 four and seven inches from the top of the wall at that
8 point.

9 A. Very good.

10 Q. Okay. Now, there is a decision made at
11 some point in that time frame to change the, what the
12 computer says the operating level is; is that correct?

13 A. Correct.

14 Q. And there is a decision to change it by
15 about two feet?

16 A. Correct.

17 Q. So that it's saying when you get a reading
18 of 1594, that should be the maximum?

19 A. Correct.

20 Q. Are you following me?

21 A. Yeah.

22 Q. Now, what I want to know is, what is the
23 assumption that you-all are making about the actual level
24 in the reservoir at that time?

25 A. Not knowing how bad the gauge piping is

1 failing?

2 Q. Yeah. What is the assumption?

3 A. I can't answer that.

4 Q. But someone had to be making an assumption
5 about what that was, didn't they?

6 A. I'm -- I don't know. I would assume that
7 people would be going up and watching it up at the upper
8 reservoir to see if it's -- if it's not getting any worse
9 as far as the -- and they do -- I don't know if they had a
10 daily inspection or -- I mean, that would be my assumption
11 of what you'd be doing.

12 Q. Well, someone must have -- someone would
13 have been making some assumption in regard to what that
14 two-foot adjustment on the computer software program --

15 A. Right.

16 Q. -- was actually resulting in in regard to
17 operating level; wouldn't you agree?

18 A. I agree.

19 Q. And do you have any indication that or did
20 you have any communication that there was an assumption
21 that it was less than the operating level of 1596 --

22 A. I can't answer that.

23 Q. -- that had previously been established?

24 A. I can't answer that.

25 Q. It would be important, wouldn't you agree

1 with me, to know what that assumption was?

2 A. I would agree with that.

3 Q. Who would have likely been involved in that
4 decision-making in regard to that assumption of the
5 operating level?

6 A. I would think the plant manager.

7 Q. Would anyone in St. Louis have been aware
8 of the -- let me ask you this: Does a level operating
9 level in that reservoir translate into a certain volume of
10 water in that reservoir?

11 A. I do believe it does.

12 Q. We know the reservoir is a constant size as
13 long as it doesn't collapse, correct?

14 A. Correct.

15 Q. And we know that if you get to a certain
16 level on the wall at a certain place and you consistently
17 measure that, that the volume of water will be the same or
18 close to the same if you match that particular height on
19 the wall, for instance, correct?

20 A. Correct.

21 Q. Would it also be fair to say that that
22 particular volume of water is going to pretty much match
23 the amount of electricity that's produced if the volume is
24 the same and the generation units are run at the same
25 speed comparing two different times?

1 A. Correct.

2 Q. Okay. So would it be fair to believe that
3 someone in charge of generating power in power dispatch in
4 St. Louis would have some knowledge about the energy
5 production that was being gotten out of that plant
6 whenever it was being run?

7 A. I would think so.

8 Q. And would they also, therefore, be -- if
9 that changed in any significant way, would they also have
10 been aware of that?

11 A. You would believe so.

12 Q. And if -- if there was a change, if that
13 occurred, would that have also direct -- from any
14 engineering background, have been a direct inference that
15 there was something different about the volume of water in
16 that reservoir?

17 A. Could they have done it and did they do it?

18 Q. I'm asking you if that would have been a
19 logical progression for an engineer. If you say, hey,
20 we've got less generation out of this plant today with the
21 same run of the generators, would they have normally made
22 an assumption or at least made an assumption as to the
23 cause of it being that the volume of water had changed?

24 A. Could that have been done? Yes, that could
25 have been done.

1 Q. That analysis could have been done is what
2 you're saying?

3 A. Right.

4 Q. I'm trying to follow you.

5 A. Yes.

6 Q. It also would have been a logical
7 progression for anyone to make that if the generation
8 changes in amount, one of the most likely reasons would be
9 the volume of water is different?

10 A. That's -- you could assume that, yes.

11 Q. And that again, as you've already pointed
12 out, directly relates to the water level, correct?

13 A. Correct.

14 Q. I'm not trying to trick you on this thing.
15 I'm just trying to make sure that -- some of these things
16 are kind of obvious, but I want to make sure that I walk
17 through them correctly.

18 Do you know what protocols were in
19 existence in regard to the communication of a safety issue
20 that might be discovered by someone working with a
21 generation unit?

22 A. Safety issue as far as?

23 Q. Written protocols or protocols that might
24 have been in existence at the time that the -- 2004, 2005
25 within Ameren as far as communication of those safety

1 issues are concerned?

2 A. Yes. I'm not -- I don't know exactly what
3 it is, but yes, there is a plan in place.

4 Q. There was at that time?

5 A. I believe so.

6 Q. Do you know where those protocols are
7 found?

8 A. I do not.

9 Q. Were you personally familiar with those
10 protocols?

11 A. I was not, or am not.

12 Q. Okay. And why would you not have been
13 aware of those or have been --

14 A. When you say safety protocols, are you
15 referring to all of generation or are you referring to
16 Taum Sauk? Are you referring -- I mean, I guess you need
17 to be more specific.

18 Q. You know, those are all great questions.
19 Just go ahead and answer them. First --

20 A. Well, there is a safety protocol.

21 Q. First start out generally. Were there a
22 set of safety protocols generally for the generation
23 fleet?

24 A. Yes, there is, and I do believe you can
25 find it on Scholar.

1 Q. On what?

2 A. On Scholar, which is Ameren's website.

3 Q. Okay. Is that accessible by the public or
4 just within the Ameren system?

5 A. I think it's just within the Ameren system.

6 Q. Okay. But you have not reviewed those?

7 A. Well, I review so much information in a day
8 that I can't say for sure.

9 Q. You can't cite them?

10 A. I cannot cite them.

11 Q. You can't tell me for sure that you've read
12 them?

13 A. I know that we've reviewed safety
14 procedures, manuals. I have since being with Ameren.

15 Q. Is that a requirement for you to do that?

16 A. Yeah. Like, OSHA's a requirement, to
17 review OSHA. And there are -- there's some others. I
18 can't think of them off the top of my head.

19 Q. Okay. Now, OSHA has to do with -- mainly
20 with safety for employees?

21 A. Uh-huh.

22 Q. Yes. What I'm talking about has to do more
23 specifically with the generation fleet itself, and if
24 there's something discovered by an employee that relates
25 to safety of that plant, whether there's a written

1 protocol about what they are to do if they discover it.

2 A. Oh, yes. If they see there's a safety
3 violation?

4 Q. Yes.

5 A. You bet.

6 Q. Now, when you say safety violation, what do
7 you mean?

8 A. Well, if you see somebody doing an unsafe
9 act, you're supposed to go to your supervisor and report
10 it.

11 Q. All right. And is that a part of the
12 protocol that you're talking about, the written protocol?

13 A. Yes.

14 Q. What if you see something, an unsafe
15 condition that exists?

16 A. Same thing, you need to report it.

17 Q. Who do you report it to?

18 A. To your supervisor.

19 Q. And again, do you receive any training in
20 regard to those safety protocols?

21 A. I do believe we have computer-based
22 training on those subjects.

23 Q. Okay. And that was in effect in '04 and
24 '05?

25 A. I do believe so.

1 Q. Okay. And how is it -- do you know how
2 it's checked to determine whether employees have actually
3 done the program?

4 A. There is a -- you actually sign in and it
5 records it. That's how usually computer-based training is
6 documented.

7 Q. Yes. Okay. Do you know whether any of
8 those protocols were followed in regard to any of the
9 matters that occurred at Taum Sauk between '04 and the end
10 of '05?

11 A. I can't answer that. I'm not sure.

12 Q. Did you personally follow any of those
13 protocols in that time frame in regard to Taum Sauk?

14 A. I did not.

15 Q. Were there any particular protocols
16 specially affiliated with Taum Sauk that you're aware of
17 that would have been different than the general protocols?

18 A. Well, basically on a breach of the
19 reservoir, there was a series of numbers to call, the
20 proper people to call when they need to be evaluated.

21 Q. Was that the emergency action plan?

22 A. Yes.

23 Q. And that's required by FERC; is that
24 correct?

25 A. I'm not sure who it's required by.

1 Q. In fact, on the day of the breach, there
2 was a scheduled practice run of the emergency action plan;
3 is that not correct?

4 A. I'm not aware of that.

5 Q. But that is -- but as far as there being
6 something particular if you discover a safety issue prior
7 to something like a breach incident, do you know if there
8 were anything -- any special protocols for Taum Sauk?

9 A. That I'm not aware of.

10 Q. Do you know whether any of that has changed
11 since the breach?

12 A. I'm not in generation engineering or part
13 of dam safety, so I can't answer that.

14 Q. All right. I understand. Are there
15 protocols in effect for Ameren -- well, I'm sorry. Were
16 there protocols in effect for Ameren during '04 and '05
17 regarding changes to designs in an improvement project or
18 a new project?

19 A. Not that I'm aware of.

20 Q. Okay. Are there now?

21 A. They're implementing them.

22 Q. Is that somewhat related to what you
23 testified --

24 A. Yes.

25 Q. -- about earlier?

1 A. Uh-huh.

2 Q. Are you familiar with those protocols, the
3 new ones?

4 A. I reviewed some, but not all of them.

5 Q. Of those that you read, do you recall any
6 that would have had a direct bearing on what occurred at
7 Taum Sauk in '04 and '05?

8 A. Not that I can recall.

9 Q. So at least so far you don't -- to the
10 extent that you've read, none of those protocols would
11 have caused anything different to have occurred?

12 A. I don't think my focus was then on trying
13 to tie it with Taum Sauk and how these could have
14 prevented it. Again, I reviewed them probably a couple
15 months, three, four months ago. Again, there's so much
16 information in a day, it's pretty hard to keep track.

17 Q. But did you say you did review them with
18 that in mind or did not?

19 A. Did not.

20 Q. Did not.

21 A. No.

22 Q. Okay. Do you know whether there are any
23 notes that -- or recordings of any kind taken with regard
24 to any of the meetings that you would have had during your
25 experience with the Taum Sauk improvements or subsequent

1 to that?

2 A. Are there any meeting notes?

3 Q. Yes.

4 A. As for as design review and what have you?

5 Q. Just anything in regard to --

6 A. There are some meeting notes out there that

7 Tony put together for several meetings.

8 Q. Now, are these post breach or previous?

9 A. Pre-breach.

10 Q. Who has those?

11 A. I do believe they're in the project file.

12 Q. And who has the project file?

13 A. Should be with generation engineering.

14 Q. And who would -- who would be in control of

15 those documents?

16 A. Bob Ferguson could definitely locate them.

17 Q. Did you keep any notes?

18 A. Just in my e-mails.

19 Q. And we have all of those?

20 A. You have all of those.

21 Q. Okay.

22 A. I would think those would have been

23 included, meeting minutes would have been included with

24 those files. If you have the e-mails, I'm pretty sure you

25 probably have the meeting notes, too, meeting minutes.

1 Q. I apologize about the e-mail question, but
2 just to explain, I think that there have been data
3 requests that have been issued maybe by Staff that the
4 Commissioners would not have seen those at this point in
5 time. So I'm working a little in the dark on that
6 subject. So at some point in time I'm assuming we will.
7 But I apologize for some of those questions if they appear
8 to be duplications of something you've already taken care
9 of.

10 A. Okay.

11 Q. Without telling me what the conversations
12 were, subsequent to the breach, did you have any
13 conversations with Tony Zamberlan about this incident?

14 A. After the breach?

15 Q. Yes.

16 A. Yes. He came down to help with the
17 investigation.

18 Q. Do you recall when that was?

19 A. Must have been on the -- I don't know if he
20 was there on the 15th of December, but I'm sure he was on
21 the 16th. He was there a couple of days, 16th, 17th.

22 Q. Did you have any -- okay. I need somebody
23 to tell me when that agreement was entered into with
24 Zamberlan's firm that requires confidentiality, if someone
25 has that date, because I have it, but I don't have it in

1 front of me.

2 MR. BYRNE: Give us a second.

3 COMMISSIONER GAW: Yes. I understand.

4 MR. BYRNE: My understanding is that the
5 post-breach contract with Mr. Zamberlan, he was retained
6 by attorneys for purposes of preparing our legal position
7 in various proceedings, and so there's an element of, you
8 know --

9 COMMISSIONER GAW: Keep going, Tom. I know
10 where you're trying to head to.

11 MR. BYRNE: -- attorney work product. So I
12 think that's the issue.

13 COMMISSIONER GAW: I understand. What I
14 need to know from you is whether or not that -- you are
15 going to argue that that issue predates the agreement.
16 That's why I'm asking the question about when the
17 agreement's dated.

18 MR. BYRNE: Yes.

19 COMMISSIONER GAW: You're going to argue
20 that?

21 MR. BYRNE: We will argue that, yes.

22 MS. HOUSE: I think the position now, at
23 least our understanding as to when that was entered into
24 is the whole purpose of engaging the outside consultants,
25 whether it be Mr. Zamberlan or others that were retained

1 for purposes of the investigation that was done under
2 consultation with guidance of counsel. So whether the
3 agreement was memorialized even after he started his work,
4 but that was the purpose of the agreement.

5 And I think that this is obviously an issue
6 that to the extent the Commission has questions about it
7 or wants to look into it, I think Ameren needs to evaluate
8 that in full in order to give you a final full position on
9 what the date of that is and what the coverage is.

10 COMMISSIONER GAW: I will -- I know that
11 this is an issue that has ramifications to it. I don't
12 want to push us into a decision on that at this moment.

13 MS. HOUSE: And that's my only point.

14 COMMISSIONER GAW: But I do -- I am
15 interested in understanding the position completely in
16 regard to whether or not there is a pre -- whether or not
17 the confidentiality matter predates the agreement. And
18 then straight up I'm going to have a lot more questions
19 about whether the darn agreement has any validity in
20 regard to what we may be able to ask.

21 But if there was a distinction being drawn,
22 I wanted to pursue these questions now. If you-all are
23 making the argument, I will just have to wait until we
24 have the appropriate amount of study done to decide
25 whether or not we do or do not --

1 MR. BYRNE: I don't think the date of the
2 agreement is the demarcation, you know, and it may be
3 that -- I don't know what we might do depending on what
4 questions you have.

5 COMMISSIONER GAW: If you told me it was,
6 though, I was going to ask these questions.

7 MR. BYRNE: Sure.

8 COMMISSIONER GAW: I'm not going to ask
9 these questions right now, Mr. Pierie, but I may get back
10 to them. Unfortunately, that may mean that I may have to
11 get back with you at another time. I apologize for that.

12 All right. Pardon me, Judge. I'm going to
13 read some of my questions to see what's already been
14 asked.

15 BY COMMISSIONER GAW:

16 Q. Post breach, besides Mr. Zamberlan, who
17 else have you had conversations with, other than
18 attorneys?

19 A. Post breach?

20 Q. Yes. About the Taum Sauk incident, series
21 of incidents.

22 A. Every person I've talked to since post
23 breach?

24 Q. Let's confine it first of all to who you
25 talked to in the first couple of weeks while you were --

1 while you were going down to see the incident, what
2 occurred and the general work that you were doing in that
3 regard. I'll ask you a pre-question to that. How long
4 were you involved in working on the aftermath of the
5 breach?

6 A. At the plant, I was down there for three
7 days after the breach.

8 Q. All right. And then subsequent to that,
9 did you have any additional work that you did in regard to
10 it?

11 A. I worked with a group on the chronology.

12 Q. Okay.

13 A. That was for about a week or two, and then
14 they -- then I left the group and went to my new
15 assignment.

16 Q. All right. Who was in that group?

17 A. Chris Hawkins, Ernie -- I don't know how to
18 pronounce his last name -- Hershelow, Bob Ferguson, James
19 Witges. There's a couple other guys. I cannot recollect
20 their names. They were from Callaway. I can't recollect
21 their names.

22 Q. And did that group meet several times?

23 A. They met continuously for days.

24 Q. For days. In different locations or --

25 A. No, same location.

1 Q. Where was that?

2 A. In the general office.

3 Q. Okay. Who was in charge of that group?

4 A. James Witges.

5 Q. Okay. Were they gathering information

6 or --

7 A. Yes.

8 Q. Okay.

9 A. Trying to figure out, put the timeline

10 together, sequence of events.

11 Q. Do you know what the purpose was for that

12 information?

13 A. Figure out -- kind of go through the

14 details of how things got to where they got.

15 Q. And after that information was gathered and

16 trying to find that out, was it to be delivered to

17 someone --

18 A. Yeah.

19 Q. -- in-house or was it for an outside

20 source?

21 A. I believe it was for FERC.

22 Q. Okay. There is, I think, a timeline in the

23 FERC report. Have you seen that?

24 A. Yes.

25 Q. Is that timeline based at least in part

1 upon that work that you're discussing?

2 A. Correct.

3 Q. Did you read that timeline in the FERC
4 report?

5 A. Correct.

6 Q. Did you see any errors or discrepancies in
7 it?

8 A. Not that I recall.

9 Q. Did you have other conversations about
10 Taum Sauk just generally speaking post breach besides
11 within that group?

12 A. Plant personnel, I mean, the guys that were
13 there at the plant.

14 Q. Okay.

15 A. My wife.

16 Q. Well, I'm not going to get into those
17 conversations. Go ahead.

18 A. People that are -- guys that work in
19 generation engineering.

20 Q. Okay. We could be at this a long time if I
21 go down the road of asking you about each one of those
22 conversations. I want to ask you whether there were any
23 of those conversations that particularly stand out in your
24 mind, not talking about any conversations that you had
25 with counsel?

1 A. No. None that stand out in my mind, no.

2 Q. Were there any of those conversations that
3 disclosed information to you that you were not aware of
4 prior to the conversation?

5 A. No, not that I'm aware of.

6 Q. Is there anyone, other than the individuals
7 you've already named, that you conversed with regarding
8 the -- regarding Taum Sauk subsequent to the
9 September 27th, '05 overtopping and prior to the breach?

10 A. No, other than the people that were on the
11 e-mail.

12 Q. Yes.

13 A. So it would be Chris Hawkins and Bob
14 Ferguson, yes.

15 Q. You've already talked about those, right?

16 A. Yes.

17 Q. So we've pretty much covered that universe?

18 A. Correct.

19 Q. During your work on Taum Sauk and prior to
20 the breach, describe for me the level of concern that you
21 had, first of all, in regard to the potential of a breach
22 of the upper reservoir.

23 A. Prior to?

24 Q. Prior to the breach.

25 A. I did not have any -- I mean, I was not

1 aware of any potential problem that there could be a
2 breach. You're saying before?

3 Q. Prior to the breach. I'm asking you the
4 level of concern that you had to ensure the prevention of
5 a breach.

6 A. I mean, we had the high level backup probes
7 in. We added three transducers. I mean, it was more than
8 was there originally. So we were adding to the safety of
9 the dam.

10 Q. And once again, that's assuming all of them
11 are working according to plan?

12 A. Correct.

13 Q. But again, your level of concern, it sounds
14 like, was not very high because of your reliance on that
15 safety system?

16 A. Well, again, I didn't have much experience
17 down there as far as operation of that plant, so I really
18 didn't have a very good feel for the real potential danger
19 there.

20 Q. Who should have been -- if we're going to
21 name an individual or individuals that it was their
22 responsibility to put all of these pieces together and
23 ensure the safety of that system, who would that have
24 been?

25 A. I would say operations. I mean, as far as

1 you're saying operating the plant, to make sure it's
2 operated in a safe manner?

3 Q. Well, considering things like these two
4 Warrick probes are going to work properly, considering
5 things like the piezometers are going to be in a position
6 where they give us an accurate measurement, considering
7 things like what is the water level in comparison with the
8 lowest point on the parapet wall, considering all of the
9 other hedges that you might be getting to -- giving to
10 ensure you're not pushing the envelope on safety, all of
11 that package, who was responsible for that?

12 A. Well, as far as installation of it and
13 making sure that it was installed properly, that would
14 have been my responsibility as far as for the electrical
15 side. Now, once it was installed and was operational, I
16 would say it would be the plant's responsibility to
17 maintain that system.

18 Q. Mr. Pierie, I'm not trying to shoulder you
19 with this in regard to this next question, but I want to
20 understand in your view of what did occur, knowing what
21 did occur, relate that to your portion of the
22 responsibility that you just described for me, if you
23 could.

24 A. I must be getting tired.

25 Q. I know, it's a bad question. I'm asking

1 you to tell me in regard to what -- we know what went
2 wrong, right?

3 A. Correct.

4 Q. How much of that fell within your -- that
5 went wrong fell within your sphere of responsibility?

6 A. Well, the gauge piping, I didn't design it
7 as far as that falling apart.

8 Q. Yes.

9 A. The probes being moved up to a level where
10 they weren't protecting, I didn't do that.

11 Q. Yes.

12 A. So I didn't -- I don't know.

13 Q. Okay. I understand what you're telling me,
14 but I'm looking for who is it that's supposed to ensure
15 that all of these things are --

16 A. Are safe in an operational manner, I would
17 say it's a possibility the plant.

18 Q. Who is that? The plant is not a person.

19 A. The plant as a whole, from the technicians
20 to the plant manager to the engineer.

21 Q. Well, I can -- I can look at the
22 information that was available at least -- at least as
23 late as the first week in October of '05 and I think
24 pretty clearly say all of the things that needed to be
25 known in regard to this plant being a hazard were known by

1 individuals that worked for Ameren. Wouldn't you agree?

2 A. I can't be -- in the beginning of October?

3 I'm sorry. Yes.

4 Q. By the time it was --

5 A. I'm sorry. I lost my timeline there.

6 Q. That's all right.

7 A. Yeah. That's -- as far as being -- but
8 there's actions taken to prevent, you know, by lowering
9 the level two feet. Now, obviously you don't think that
10 was significant action that was taking place.

11 Q. You've already agreed with me that you have
12 no idea how that lowering in the software relates to the
13 actual level of operation of the water level on the
14 parapet wall.

15 A. I mean, if the failure as a pipe is
16 initially failing, I think they were getting a four or
17 six-inch raise from the failure of the piping, right? So
18 you take that into account.

19 Q. What makes you say that?

20 A. Because from when Rick, what he found on
21 his -- when he walked around the reservoir and
22 determined --

23 Q. Go ahead.

24 A. -- determined where the elevation was.

25 Q. And that was with the turbines shut down,

1 wasn't it?

2 A. Correct.

3 Q. And it is entirely logical that when water
4 is being pumped into that reservoir by those very same
5 turbines that are used to generate electricity but can be
6 used as pumps --

7 A. Correct.

8 Q. -- that it will create a circulation inside
9 of that reservoir that would further displace those
10 conduits; would you not agree?

11 A. I can't answer that because I don't know.

12 Q. I didn't ask you if you knew. I said it's
13 very possible, isn't it?

14 A. It is possible.

15 Q. And, in fact, viewing the level of the
16 water while those pumps are not running is not a good test
17 of what those readings might be when the water is pouring
18 in those pumps?

19 A. I can't answer that. I mean, I --

20 Q. I understand you can't answer. I
21 understand. But you did agree, I think, that it's very
22 possible the readings would be different?

23 A. Yes.

24 Q. And, in fact, we know that those
25 piezometers were, at least on the date of the breach, not

1 four to six inches off but something greater than that?

2 A. Correct.

3 Q. Not only is it possible that they could
4 have been off more than that, they, in fact, were at least
5 on the 14th of December of 2005, correct?

6 A. Correct.

7 Q. And I think you said that you had not seen
8 the particular report that suggested that the actual
9 variation of the level could have been four feet or more.
10 You didn't see that, right?

11 A. No, I didn't.

12 Q. I'm trying to see if I can find that.

13 A. Okay.

14 Q. But I don't know if I can. I had it open a
15 while ago, but -- well, I'll spare you that.

16 Do you have an opinion as to the
17 appropriate level that the reservoir should have been
18 operated at, the actual level, not the reading on the
19 piezometer?

20 A. After doing the --

21 Q. After you knew what they did in October of
22 '05 about the transducers?

23 A. After the -- the breach and the
24 investigation?

25 Q. No. Before that.

1 A. When they were still in operation?

2 Q. Yeah. Did you have an opinion then?

3 A. No.

4 Q. Did you have an opinion after the breach?

5 A. I do have an opinion after the breach.

6 Q. What do you think it should have been?

7 A. Well, it should have been three foot of

8 freeboard.

9 Q. Three foot. How do you come to that

10 conclusion?

11 A. Well, that's what I'm hearing, that's what

12 they normally operate hydro plants at.

13 Q. Where did you discover that?

14 A. Just in conversation with the dam safety

15 folks.

16 Q. Can you name names for me?

17 A. I don't know if it was Tom Hollenkamp or

18 Steve Bluemner. They said between two and three foot of

19 freeboard is normal operating levels.

20 Q. Okay. We know that 1596 as an operating

21 level was normal operating level, supposedly, right?

22 A. Uh-huh.

23 Q. We also know that that's a lot closer to

24 the top of the lowest point of the parapet wall than three

25 feet?

1 A. Yes, it is.

2 Q. I must have stayed up too late writing some
3 of these questions as I'm reading them now.

4 Are you aware of a portion of any of the
5 reports that were by FERC or to FERC that suggested it was
6 unprecedented to have the water levels running up against
7 a parapet wall?

8 A. No, I was not aware of that.

9 Q. In '04, the end of '04, the discussion of
10 the trips that I think you made earlier, was that from a
11 trip of the high or the high-high probes or the low?

12 A. From the high probe. They had trips of the
13 low, but the trip that's generated Tony's e-mail moving
14 the Warrick probes up was a trip of the high level.

15 Q. Do you know how many times that occurred
16 prior to that e-mail?

17 A. I believe just once.

18 Q. There is a place in one of your -- that's
19 attributed to you in one of the Highway Patrol statements
20 about you -- it not being unusual for you not to be in the
21 loop. Do you remember that?

22 A. Yes, I do.

23 Q. What do you mean by that?

24 A. Once I leave the -- after an outage and I
25 left the plant, then pretty much the interface is with the

1 operations or plant personnel.

2 Q. Okay. And the reason you were brought back
3 into the loop in the fall of '05 was because of the
4 overtopping?

5 A. Yes. They wanted some help.

6 Q. Did you say something in one of the -- to
7 one of the Highway Patrolmen when you were giving a
8 statement that something about a change in a wiring not
9 necessarily made a difference? Do you remember anything
10 about that? I'm taking that out of context and I
11 apologize.

12 A. I think when they went from parallel to
13 series, that the -- I don't know if that's necessarily
14 true because I think they thought if it was originally set
15 up the way it was, that the reservoir might not have
16 failed because the eight-inch probe -- or seven-inch
17 location would have taken them out before the failure.

18 Q. Can you first of all tell me who you mean
19 by they?

20 A. I think I heard that again in the
21 discussion of the chronology, a group of people sitting at
22 a table.

23 Q. You don't remember who specifically?

24 A. No, I do not.

25 Q. But this would have been the chronology

1 that you referred to earlier with the group that worked
2 post breach?

3 A. Correct.

4 Q. And do you know, can you construct for me
5 what that logic would be?

6 A. Well, that would have just been probed that
7 way.

8 Q. Do you believe that the lower probe, the
9 lower of the two high probes did get wet during this --

10 A. They believe that it did, that the seven-
11 inch probe got wet.

12 Q. Do you know what that conclusion is based
13 upon?

14 A. Their surveys.

15 Q. Did you see any indication when you were
16 out there post breach of where the water level actually
17 was in comparison to those lower probes?

18 A. No. When I pulled the probes out, they
19 both seemed to be wet, but it was -- that morning, it was
20 really foggy. So it just could have been condensation for
21 all I know.

22 Q. So you couldn't tell?

23 A. No, I couldn't.

24 Q. Was there ice?

25 A. No, there was no ice.

1 Q. Do you know whether or not the piezometers
2 are impacted by temperature?

3 A. They are.

4 Q. Do you know whether or not they are -- that
5 they are affected by temperature the same?

6 A. That I couldn't answer.

7 Q. In other words, does one probe get the
8 same --

9 A. Right.

10 Q. -- effect from a temperature change?

11 A. Right.

12 COMMISSIONER GAW: I may have questions for
13 you later, but that's all I have right now.

14 THE WITNESS: Thank you.

15 COMMISSIONER GAW: Thank you very much. I
16 appreciate your patience.

17 JUDGE DALE: Ameren, how much will you
18 have?

19 MS. HOUSE: I'm happy to report we have
20 absolutely nothing for Mr. Pierie. I think he's answered
21 everything he could fully and completely, and we're happy
22 to let him get on his way.

23 JUDGE DALE: I couldn't be more delighted
24 by your response. In that case --

25 MS. HOUSE: I'm happy to have provided it.

1 JUDGE DALE: -- we will be in recess until
2 nine o'clock tomorrow morning. Mr. Pierie, you don't have
3 to come back tomorrow. You are subject to recall, but
4 unless you are recalled, you don't have to come.

5 WHEREUPON, the hearing of this case was
6 recessed until August 2, 2007.

7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

1		
2	THOMAS PIERIE	
	Direct Examination by Mr. Thompson	424
3	Cross-Examination by Ms. Baker	580
	Cross-Examination by Mr. Schaefer	587
4	(In-Camera Session - See Index Below)	
	Questions by Commissioner Gaw	694
5		
	THOMAS PIERIE (In-Camera Session - Volume 4)	
6	Cross-Examination by Mr. Schaefer	686
	Questions by Commissioner Gaw	689
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

1	EXHIBITS INDEX		
2		MARKED	RECEIVED
3	EXHIBIT NO. 13	482	503
4	FERC Report		
5	EXHIBIT NO. 14		503
6	FERC Report		
7	EXHIBIT NO. 15		
8	Schematic of Instrument Cabinet	556	559
9	EXHIBIT NO. 16		
10	9/28/05 E-Mail to Jeff Scott from Thomas Pierie	557	559
11	EXHIBIT NO. 17		
12	10/10/05 E-Mail and 10/07/05 E-Mail	559	565
13	EXHIBIT NO. 18		
14	10/07/05, 10/10/05 and 10/11/05 E-Mails	565	
15	EXHIBIT NO. 19		
16	11/30/04 E-Mails	566	578
17	EXHIBIT NO. 20		
18	9/27/05 E-Mail	614	693
19	EXHIBIT NO. 21		
20	Drawing done by Mr. Pierie on the Smartboard		693
21			
22			
23			
24			
25			

1 C E R T I F I C A T E

2 STATE OF MISSOURI)
3) ss.
4 COUNTY OF COLE)

5 I, Kellene K. Feddersen, Certified
6 Shorthand Reporter with the firm of Midwest Litigation
7 Services, and Notary Public within and for the State of
8 Missouri, do hereby certify that I was personally present
9 at the proceedings had in the above-entitled cause at the
10 time and place set forth in the caption sheet thereof;
11 that I then and there took down in Stenotype the
12 proceedings had; and that the foregoing is a full, true
13 and correct transcript of such Stenotype notes so made at
14 such time and place.

15 Given at my office in the City of
16 Jefferson, County of Cole, State of Missouri.

17 Kellene K. Feddersen, RPR, CSR, CCR
18 Notary Public (County of Cole)
19 My commission expires March 28, 2009.
20
21
22
23
24
25