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TRANSCRIPT OF PROCEEDINGS

Hearing

August 13, 2007
Jefferson City, Missouri
Volume 9

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

COLLEEN M. DALE, Presiding
CHIEF REGULATORY LAW JUDGE

STEVE GAW,
ROBERT M. CLAYTON, III,
LINWARD "LIN" APPLING,
COMMISSIONERS

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P R O C E E D I N G S

JUDGE DALE: Okay. Back on the record. Welcome back, everyone, for the continuation of ES-2007-0474 August 13th, 2007. One of the things I would like to remind everyone before we begin, along with the -- please turn off all electronic devices, including Blackberries, cell phones, et cetera.

I would like everyone to be mindful of the fact that this proceeding pertains to the Commission's jurisdiction. Questions about damages, consequential, direct and otherwise are not part of this proceeding.

Having said that, Mr. Thompson?

MR. THOMPSON: Thank you. We would call James E. Bolding.

JUDGE DALE: Okay. Thank you. Mr. Bolding, will you raise your right hand?

JAMES BOLDING,

being first duly sworn to testify the truth, the whole truth, and nothing but the truth, testified as follows:

DIRECT EXAMINATION

BY MR. THOMPSON:

JUDGE DALE: Thank you. Please proceed.

MR BOLDING: Thank you.

JUDGE DALE: You may inquire.

MR. THOMPSON: Thank you, your Honor.

Q (By Mr. Thompson) Good morning, Mr. Bolding.
A Good morning, sir.
Q How are you employed, sir?
A I'm sorry?
Q How are you employed?
A I'm presently employed by Ameren Energy Marketing.
Q In what capacity?
A Power Trader Dispatcher.
Q And how were you employed in December of 2005?
A I was with AmerenUE as a Power Dispatcher.
Q So you're with a different company now?
A I'm with the unregulated side of Ameren, yes, sir.
Q And you were formerly with the regulated side?
A Yes, sir.
Q Okay. And does that mean you're working in a different location?
A Yes, sir. I'm in --
Q And are you doing different things?
A A little different.
Q A little different?
A Primarily, the same, but a little different.
Q What exactly does a Power Dispatcher do?
A On a day-to-day basis, we communicate with the

individual plants as to loading, where the loads need to be on the units. Some of the units are manually operated, and we must communicate to operators any time there's a change in the load.

Some of the units are automatically controlled, so we monitor those and ensure that they're moving within their designated ranges and communicate with the plants when they need to -- excuse me -- change the ranges for the automatic control.

We deal with the plants, work with the plants issues, problems that they're having that might prevent them from achieving the desired generation for the particular unit at that time.

We also work with MISO, the Midwest Independent System Operator. They send us dispatches every five minutes. Occasionally, we have problems with the unit and can't achieve the generation they require or request, so we communicate with them the problem with the unit and why we can't reach the particular load they've requested on that unit and keep them informed on that situation.

Q Okay. Now, in December 2005 when you were working on the regulated side, your particular physical location was in St. Louis city; is that correct?

A That is correct.

Q And did you have gauges and printouts or

read-outs telling you what each unit that you were dispatching was doing?

A Yes, sir.

Q But you did not actually control the units from there?

A Well, sir, in -- in AGC, Automatic Generation Control, I -- I did have certain control over those units.

Q Okay.

A Within a parameter, within ranges. The plant would give me a certain range of maybe 50 to 75 megawatts, which the unit would automatically move in that range. And -- and I could bump that up or down with some limits that I had.

So a little control, but -- but did I actually push the buttons at the plant or cause the buttons to be pushed at the plant? No.

Q Okay. And was Taum Sauk one of the automatic generation control plants?

A No, sir.

Q Okay. So your job included dispatching the Taum Sauk unit, did it not?

A That is correct, sir.

Q So what exactly -- what steps did you go through to do that?

A When we had a start for Taum Sauk facility, one

of the generating units, being a large unit and come on around 200 megawatts, I would usually start about 15, 20 minutes to the hour starting -- in my preparation for starting the unit because, at that time, with MISO, we would put in an offset to their system, which they saw as a negative number -- say I'm bringing on 200 megawatts of generation.

I would put in an offset in the MISO system of a negative 200 so that -- to time -- to correspond in time at the same time my 200 megawatts came on, that 200 negative I put into their system came into play and kept my ACE from going haywire.

Q Okay.

A So I would start about 20 minutes till. I would call MISO and let them know that I was putting in this negative number.

Q How actually did you put it in?

A Through the computer.

Q Okay.

A Into MISO system. We have a page where we can go in and put in an offset to their system. And it goes into their calculator, which is calculating the generation for their footprint. Has nothing to do with -- the -- the plant has nothing to do with -- with actual megawatts generated. It's just to protect my ACE from being knocked

off by 200 megawatts at one time.

Q When you say ACE, what --

A My area, control area.

Q Okay.

A We're required to maintain certain parameters. And if I wouldn't do this, I wouldn't be able to maintain those parameters.

Q Now, in December 2005, were you part of the MISO system at that time?

A Yes, sir, we were.

Q Now, you understand what the term "native load" means?

A Yes, sir.

Q And when you were working at that time on the regulated side, you were primarily concerned with AmerenUE's native load; is that correct?

A Well, sir, I was in the MISO grid, the MISO footprint. And my instructions for generation came from MISO. Now, they included our native load into that, but I was given dispatch signals by MISO in control of those.

Q Okay. So, effectively, MISO was controlling AmerenUE's generation?

A Yes, sir.

Q Okay. And part of that generation was serving UE's native load; is that correct?

A I assume so, sir.
Q Okay. As far as you know?
A As far as I know.
Q And as far as you know, some other part of that was -- was being used elsewhere?
A That is a possibility.
Q Okay. Now, at the -- in December of 2005, UE was subject to a Joint Dispatch Agreement, was it not?
A Yes, sir, it was.
Q And did that have any effect on the way you dispatched power?
A No, sir.
Q So how would you receive instructions from MISO?
A In the afternoons, anywhere from 3:30 till five in the afternoon, we receive what we call day ahead awards from MISO. And those day ahead awards tell us which units they want us to continue operating the next 24 hours.

They tell us which units they want us to stop. They tell us which units they want us to stop. They give us a time schedule of starting a particular unit at this time or shut this one down at this time.

And we also get what we call -- the day ahead award also has the megawatt loading for the unit for the day ahead award and the pricing per hour.
Q And would those day ahead instructions from

MISO, would they include the Taum Sauk facility?

A Yes, sir, they do.

Q So if the facility was operated at that time, it was because of instructions from MISO?

A In most cases.

Q Was it sometimes operated where there were no instructions from MISO?

A Yes, it was.

Q And what would those circumstances be?

A Well, sir, if our marketers determined that there was a need for the units at a particular time, we have put them on ourself as price takers in the market.

Q Now, you were operating, were you not, on the night of December 14th, 2005?

A Yes, sir.

Q Or dispatching?

A Yes, sir.

Q Okay. And that's the -- the night when the breach at Taum Sauk occurred; isn't that correct?

A Yes, sir.

Q And were you aware of anything unusual in your dispatching function?

A No, sir.

Q So you didn't see anything on any gauges or any reports that suggested that anything unusual was

occurring?

A No, sir.

Q Okay. Now, in the course of your dispatching work, would you be actually aware of the level of the water in the upper reservoir at Taum Sauk?

A At all times, sir.

Q Okay. And you had a gauge or meter that told you that?

A I had a 3 foot by 5 foot plasma screen just to my left about 8 feet from me that had the levels of the upper reservoir, the lower reservoir and the graph of the levels.

Q Okay. And at that time, would you agree with me that the operating level was 1594?

A Yes, sir.

Q And that was a reduction of 2 feet from the previous operating level; isn't that correct?

A That's correct, sir.

Q And if you remember, how long had that 2 foot reduction been in effect?

A It started in October.

Q In October?

A Yes, sir.

Q And how was that communicated to you?

A Through an e-mail.

Q Through an e-mail. Do you remember who it was from?

A The e-mail was forwarded to me from Steve -- Steve Schoolcraft, our Generation Coordinator.

Q Was he your supervisor?

A No, sir.

Q Who was your supervisor?

A Tim Lafser.

Q Now, when you gave instructions to the Taum Sauk plant, you actually would communicate with someone at the Osage plant; isn't that correct?

A That is correct, sir.

Q And the plant was operated from Osage?

A Yes, sir.

Q So would you do that by telephone call or --

A Yes, sir. Telephone.

Q Okay. I think you told us you would -- you would prepare to operate the Taum Sauk plant about 20 minutes in advance. You would put a negative 200 megawatts into the MISO system, correct?

A That is correct, sir.

Q And then what did you do next?

A Okay. It takes -- once I put the negative number in to MISO, it takes about 12 minutes for that to become active. I would time that in about -- let's say I

needed the unit at 7:00. I would start like 20 till. And I would put in my -- my negative number. I'd notify MISO.

And then about five minutes before the hour, I would call the operator at Osage to start the unit. His unit would start up just as if -- if everything timed out correctly just as the negative number hit the MISO system. And the 200 negative output and the 200 plus coming into system just canceled each other out.

Q And did everything time correctly most of the time?

A Most of the time, sir.

Q There were two units at Taum Sauk; is that correct?

A That's correct, sir.

Q And as I understand, the first unit would typically be stopped at 1592. Is that your memory?

A That is correct, sir. That is its upper level cut-off.

Q And then the second unit, after October 2005, would be stopped at 1594; is that correct?

A That is correct, sir.

Q Now, on the night of December 14th, 2005, in fact, you stopped the second unit a little early; isn't that correct?

A That is correct.

Q Do you remember the level you stopped it at?
A On the gauge, when I -- when it stopped, I was showing like 1593.9. And then it settled to about 1593.6.
Q And that -- that settling was due to turbulence from the pumps; is that correct?
A I believe that's what's causing it.
Q Okay. And why did you stop it early that night?
A There was a generation scheduled for, I believe, 6:00 that morning. It takes 20, 30 minutes to turn around from a pumping mode to a generation mode.
I wanted to be sure and allow my relief enough time that -- that preparations could be made to switch from a pumping mode to a generation mode.
Q Okay. And you would overlap with your relief for a certain period of time?
A Yes, sir.
Q How long, typically?
A I've -- I've done it in five, ten minutes. Sometimes it's taken a half-hour, 45 minutes. It varies, sir.
Q Okay. And you would just fill them in, him or her in on what was going on?
A That is correct.
Q What about outages? Did you have anything to do with scheduling outages?

A No, sir. I did not schedule outages.
Q So if an outage was scheduled, how would you learn of it?
A The Generation Coordinator sends out a notice for us each day -- well, excuse me. Let me rephrase that. We have an outage scheduling program of which the Generation Coordinator puts that data into the system.
And we pull it up every shift and look at the outages that are scheduled for that day or that night. Or we can look 30 days ahead or -- some of them are in there a years or two, I guess.
Q Okay. Now, you were also dispatching, were you not, in September of 2005, when an overtopping occurred at Taum Sauk?
A That is correct, sir.
Q And tell us about that.
A Well, at the dispatch center, we received a call from Taum Sauk that high winds in the area were causing waves in the upper reservoir, and it was overlapping and requested that we pull the level down a couple of feet.
We started up one of the generating units. I do not recall how far down we pulled it. But we generated for a little while and pulled a couple of feet out of the upper reservoir. And that was all the situation.
Q Now, did you have to coordinate that with MISO?

A I did call MISO and tell them I was starting the unit because it was 200 megawatts going into the system. So, yes, sir, I did tell MISO I was starting the unit.

Q But you were able to start it quickly after the request?

A Yes, sir.

Q Do you know how long?

A No, sir, not without going back and looking at the chart. I always logged the start and stop times in the operator log book or dispatcher's log. But I don't remember exactly.

Q And so there is a record of that somewhere at Ameren?

A Yes, sir, there is.

Q Okay. Do you know if those records are maintained?

A Yes, sir.

Q Okay. Do you remember being interviewed by the Missouri Highway Patrol?

A Yes, sir.

Q And I think you were interviewed the first time on January 9th, 2006?

A Yes, sir.

Q Have you had an opportunity to review the Highway Patrol notes of that interview?

A Yes, sir.
Q Have you reviewed it fairly recently?
A Yes, sir.
Q Do you have any changes you'd like to make?
A No, sir.
MR. THOMPSON: Okay. If I may approach, your Honor.
JUDGE DALE: Yes, you may.
Q (By Mr. Thompson) I'm going to hand you a copy of the Highway Patrol notes of that first interview. And I have redacted from there your birthdate, home address and telephone number, and I have no idea what exhibit number we're on.
MS. PAKE: 45.
MR. THOMPSON: 45?
JUDGE DALE: Yes. That should be marked as Exhibit 45. And, also, let me take a moment to say that all of the exhibits from the previous portions of the hearing are not available as they have been taken to the Data Center to be entered into EFIS.
MR. THOMPSON: I think they are actually in EFIS already, your Honor.
JUDGE DALE: Okay.
Q (By Mr. Thompson) Based on your review of the notes of this interview, do you agree that the statements

here are true and correct to the best of your knowledge and belief?

A I do, sir.

MR. THOMPSON: Okay. I would move that Exhibit 45 be received.

JUDGE DALE: Are there any objections?

MR. BYRNE: The -- the same continuing objection we've had, your Honor. Hearsay, not a complete transcript.

JUDGE DALE: Subject to that objection, it will be admitted into evidence.

(Exhibit No. 45 was offered and admitted into evidence.)

Q (By Mr. Thompson) And you were interviewed again on January 19th, 2006; isn't that correct?

A That is correct, sir.

Q And do you remember that interview?

A Yes, sir, I do.

Q Have you had a chance to look over the notes of that interview?

A Yes, sir.

Q Do you have any changes you'd like to make?

A No, sir.

Q Let me hand you a copy of that. Sorry about that. This is 45.

MR. THOMPSON: And this would be Exhibit 46, I assume?

JUDGE DALE: Yes.

Q (By Mr. Thompson) So based on your review of that interview, would you agree that the contents of that transcription or those notes are true and correct to the best of your knowledge and belief?

A Yes, sir.

MR. THOMPSON: I move the admission of Exhibit 46.

MR. BYRNE: Subject to the same continuing objection.

JUDGE DALE: Thanks. Then subject to that objection, it will be admitted into evidence.

(Exhibit No. 46 was offered and admitted into evidence)

MR. THOMPSON: Thank you, your Honor. I have no further questions.

JUDGE DALE: Mr. Mills?

MR. MILLS: Just a few, your Honor. Thanks.

CROSS-EXAMINATION

BY MR. MILLS:

Q Mr. Bolding, my name is Lewis Mills. I'm the Public Counsel from the Public Counsel's office. I just have some general questions and then maybe some more

specific questions after that.

You -- you testified earlier that you've got a large plasma screen that displays information from Taum Sauk; is that correct?

A That is correct.

Q Is -- is it user selectable so that you can decide what sort of information you want to -- to display on that screen from Taum Sauk?

A No, sir.

Q Okay. So it's always the same information?

A Yes, sir.

Q And the only information that you see is the level of the upper reservoir or the level of the lower reservoir; is that correct?

A Yes, sir.

Q Is there any sort of a graph that shows the -- the -- the rate of fill or the rate of emptying?

A There's a graph that shows the filling -- as you're filling the upper level, you see the graph going up and the lower reservoir going down, and, vice versa, generating.

Q Sort of a sloping line, one going up, one going down?

A That is correct, sir.

Q And is that information captured at any

particular time, or is it displayed on the screen and then gone forever?

A I can -- whenever I start or stop Taum Sauk, I always record in the dispatcher's log the level -- the time and the level. When I start it, I record the level of the upper reservoir. When I stop a pump, I record the level of the upper reservoir.

Q Okay. Now, how do you record that? Is that a handwritten note?

A Electronic log.

Q Okay. So you type it in, and it's a note that's electronically typed in and kept that way?

A That's correct. It's dated and timed.

Q So it's not captured directly from the screen. You -- you -- you transfer the information from the screen and you type it in somewhere else?

A That is correct, sir.

Q Now, on the -- the sloping lines that show the fill rate or the empty rate, are those always nice, smooth curves? Are they ever jagged?

A Always been nice, slow --

Q You've never seen any irregularities on those?

A No, sir. You could lay a ruler on it and have a straight line.

Q And -- and how accurate -- how detailed is that

-- is that line? Does it -- does it show the rate of movement by inches or yards or feet?

A We -- we see it -- it's measured in sea level, feet above sea level.

Q Okay.

A And we see every tenth of a foot. I have a display reading that may be like 1590.1, and then .2, .3 till --

Q Okay. And -- and does it ever jump around? Does it always smoothly progress a tenth of a foot, a tenth of a foot, a tenth of a foot and never drops back down if there's waves or anything like that?

A The only time I've seen it drop back down is at the end when we complete pumping. And like I said, it will usually settle a couple of inches -- excuse me -- a couple tenths of an inch.

Q During the fill, it's always a steady regression up. Never drops back at all?

A That's all I've ever seen, sir.

Q Now, have you -- have you ever been to Taum Sauk?

A No, sir.

Q Okay. On what do you base your understanding that the -- the -- the settling -- once the pump stops, do you do a search or a -- that's due to the turbulence from

the pump itself?

A Well, we're putting a tremendous amount of water in there at one time. And then you shut those pumps down, so that's surely got to make a little wave in the -- in the pond. That's just my assumption.

Q So you never actually observed that?

A No, sir.

Q Now, in -- in terms of the call that you got on that night in September when -- or was it October when -- when the overtopping -- do you recall what the date of that was?

A Around the 25th of September.

Q And -- and you took the call from -- from someone at -- at the plant personally?

A No, sir. The Power Supply Supervisor received the call.

Q Okay. And who was that?

A John Poyser (ph.).

Q Okay. Now, that -- that would be your supervisor at that time?

A We worked -- we worked together on shift dispatching the unit. I'm the Dispatcher. He's the Power Supply Supervisor.

Q Okay. And would detail -- would that person also keep a log?

A Yes, sir. They have a -- a log, also.
Q Okay. Do you know whether details of that call were entered into his log?
A No, sir, I do not.
Q Okay. Did you enter details of that call into your log?
A I cannot recall at this time.
Q Is that the sort of call that you would normally log?
A Yes, sir. Without looking at the log, I can't say, but when I -- when I logged the start times, I -- I don't recall if I made an entry as to why I started or not.
Q So your log wouldn't necessarily show the -- the amount of time that lapsed from when the call came in to when generation started?
A No, sir. My log would not show that.
Q Okay. Now, do you frequently get calls from operators of plants that -- to tell you something's amiss and you need to do something quickly to address it?
A Yes, sir.
Q And do you typically log those calls?
A Yes, sir.
Q And what level of detail did you put in your log?

A Enough that someone looking at the log and not familiar with -- with the particular incident would have a general idea of what was going on.

Q Okay. So if you had logged the call from Taum Sauk, it would say something about -- it wouldn't just say, Call came in, started generation. It would say, Call came in and said some detail about the overtopping?

A That is correct.

Q Now, on the -- December 14th, the night of December 14th, you manually shut down Pump 2 just a few inches before it would have automatically shut down, or should have automatically shut down; is that correct?

A That is correct.

Q Had you ever done that before?

A I don't recall.

Q Okay. The -- on -- on the night of December 14th, if -- what height above sea level should automatically shut down Pump 2?

A That's the second pump?

Q Right.

A At 1594.

Q And you manually shut it down at 1593.9?

A That is correct, sir.

Q And if you had ever done that before, done that -- first of all, would your logs show that you manually

shut it off at that point?

A I don't think so. It would have just shown a stop time. I usually didn't note whether -- whether automatic shut down or the operator at Osage shut it down. Just stop time and level at the reservoir.

Q Okay. On the night of December 14, did you shut it down, or did you call Osage and have them shut it down?

A I do not have control. I have to call Osage to start and stop the equipment.

Q Okay. So you called Osage at -- would your logs show that call to Osage?

A No, sir, I don't believe it would show the call to Osage.

Q Okay. So at some point, approximately five in the morning, you called Osage and asked them to shut it down?

A That is correct, sir.

Q And the -- the -- the Taum Sauk plant was scheduled to begin generation at 6 a.m, approximately an hour from that, correct?

A That is correct, sir.

Q Is that -- is that a typical start time for Osage that time of year -- I mean, for Taum Sauk that time of year?

A It was my first year at -- excuse me -- power

dispatching. So I'm not sure if this was a September, October or December run or not.

Q During -- during that -- say, the first part of December up until the 14th, had it -- had it typically run beginning at 6 a.m.?

A I don't recall, sir.

Q But your logs would show if it had?

A Yes, it would.

Q Now, in -- in -- how long had you been a Dispatcher?

A I started in April of 2005.

Q And what were you -- were you with Ameren before that?

A Yes, sir.

Q And what was your job duties then?

A Shift Supervisor at Rush Island, Rush Island power plant.

Q Okay. And what were your duties there?

A On a 12-hour, rotating shift, I was in charge of the safe, efficient operation of the plant and personnel.

Q So, really, more of the operating side rather than dispatching?

A That is correct, sir.

MR. MILLS: I think that's all I have. Thank you.

JUDGE DALE: DNR?

CROSS-EXAMINATION

BY MR. SCHAEFER:

Q Mr. Bolding, I believe you stated that your normal shift end at about 5:00 in the morning?

A A little after five. Maybe, you know, 5:20. Depends -- we relieve each other starting anywhere from 5:10 or 15 after.

Q Okay. And approximately what time did you actually leave work on the morning of December 14th, 2005?

A I think around 20, 25 after.

Q After five?

A After five. Yes, sir.

Q Okay. When would have been the last time before you left that morning that you actually looked at the plasma screen that showed you information on the upper reservoir?

A When my relief came in and we were discussing shift turnover. Excuse me. Because I just told him I just shut down the second Taum Sauk pump, that he had a generation at 6:00.

We looked at -- excuse me. We looked at the plasma screen at the level, and he commented at that time that -- that I shorted him a little bit, didn't give him a full pond because it was not to the 1594 normal level. It

was about -- well, it was -- it was 1593.6.

Q Okay. So approximately what time was that that you and he looked at that screen?

A Approximately ten after five.

Q So when you actually left work, then, Pump 2 had shut off, correct?

A That is correct, sir.

Q At the time that you actually shut off the first pump that you shut off that morning, what time was that?

A I don't recall at this time, sir.

Q Okay. When you shut that pump off, were you looking at the information on the screen?

A Yes, sir.

Q Was the water level still rising or was it plained off at that point?

A Still rising.

Q When you turned off the second pump that morning, were you looking at the information on the plasma screen?

A Yes, sir.

Q And when you turned o the second pump, was the information showing the water level still rising, or it was plained off at that point?

A Still rising.

Q Are you familiar with the FERC Independent Panel

of Consultants that did an investigation into -- partial investigation into why the breach occurred?

A Yes, sir.

Q Have you seen the report?

A Yes, sir.

Q Are you aware that they concluded that shortly after you started the second -- the start sequence for the second pump there was approximately a 12-minute period where the water level was filling in the reservoir in the same rate approximately that it was filling?

A Would you --

Q Let me -- let me restate the question. I got that backwards. Are you aware that shortly after you finished the start sequence, at least according to the FERC Independent Panel, that the water was pumping in from both pumps and, also, the gauges were showing that there was no increase in the reservoir occurring? Are you aware of that?

A No, sir.

Q You're not aware of that?

A No, sir.

Q When you were watching those gauges -- first of all, let me ask you this: At the time that you finished the completion of the start-up process for the second pump that morning, were you watching the information on the

plasma screen?

A I occasionally glance at it. Not just focused entirely on that.

Q Okay. And let me -- let me re-ask the question. Are you aware that FERC determined that there was a 12-minute period when, if you would have been watching that screen, you would have seen no increase in the rise of the level in the reservoir even though both pumps were on?

A I'm not aware of that much.

Q Okay. Is that possible?

A I don't know, sir.

Q Okay. But you don't recall ever seeing a period where the gauges weren't showing an appropriate rise in level with both pumps being on?

A No, sir, I don't.

Q Are you aware -- are you aware that according to the FERC Independent Panel conclusion that the reservoir was actually overtopping before -- for some period before you turned off the final pump that morning on December 14th?

A That is my understanding.

Q Did you see anything on those gauges that you were watching or you were supposed to be watching that indicated that the reservoir was overtopping?

A No, sir.

Q Have you ever operated the upper reservoir in a fashion where you turn off the final pump during the pump-back sequence based upon your seeing the information on the screen showing the rise level plain off?

A I have never seen -- to answer your question, no, I've never seen the level plain off during filling other than when I stop the pump.

Q I think you stated on September 25th when the reservoir was overtopping that you had gotten a call from somebody saying water is coming over the top; is that correct?

A We received a call at the Dispatch Center that wind was causing waves -- high winds in the area were causing waves in the reservoir and tat it was splashing over.

Q Okay. But regardless of why water may have been coming over, you received a call on September 25th that water was coming over the top, correct?

A Correct.

Q Do you have any personal knowledge that water was coming over because of wind -- because of wind action?

A Only what we were told by the plant.

Q Somebody told you. But you don't know that yourself, do you?

A No.
Q Okay. And who actually called you from the plant?
A I don't recall, sir.
Q Would you have a record or log showing who called you?
A There's a voice recording.
Q Okay. When was the last time you listened to that voice recording?
A Right after my first interview with the Highway Patrol.
Q Do you speak to people at the plant -- did you speak to people at the plant on a fairly frequent basis?
A In all the plants or one specific --
Q No. In Taum Sauk. In Taum Sauk.
A I rarely talk to Taum Sauk.
Q So even after listening to the -- to the recording of the phone conversation, you didn't recognize whose voice that was?
A I don't recall, sir.
Q You don't know whose voice it was, or you don't recall --
A I don't recall who it was.
Q Okay. Even after listening to the voice recording?

MR. BYRNE: I'm going to object. The question's been asked and answered.

JUDGE DALE: Sustained. It's been asked and answered at least twice.

Q (By Mr. Schaefer) Mr. Bolding, are you aware of the -- the devices that are used to measure the water level in the upper reservoir, the actual pressure transducers themselves? Are you aware of that system?

A I'm aware of that system, yes, sir.

Q Do you know how that system works?

A Not entirely, sir.

Q Okay. But you became aware at some point, I believe in October, was it, that the pressure transducers were malfunctioning at the upper reservoir?

A I became aware in October that the level indicator stabilizer bracket -- that the tube come loose from one of the brackets. Now, that's what I was aware of.

Q Okay. What was your understanding what that meant for the information that you were seeing on the screen that you were monitoring?

A It meant that there might be a slight error in the level indications.

Q Okay. You say slight. What is the basis for you using the term there might be a "slight" difference?

A Well, I was -- at that time, it was unknown to me how far error there was.

Q Okay. But you knew that there was some error in the information that you were seeing on the -- on the monitor that you were watching, correct?

A Only from the e-mail.

Q That would be from the October e-mail?

A Yes, sir.

Q What did you do, if anything, to satisfy yourself that the information that you were looking at on that screen was reasonably reliable enough for you to do your job?

A I was comfortable with our level because we dropped it 2 feet to give us a cushion, coupled with the fact that knowing that there were people at the plant that monitored the level there and if there were any various or deviations in the level that they would notify us.

Q Was there some protocol that you were aware of that would cause them to notify you of that if that were the case?

A Well, they had called us once before when the wind was -- was lapping the waves over. So they would call us if water were running over and they observed it.

Q Now, you had no -- you had no knowledge, did you, how far or how much in error those sensors may be,

did you?

A No.

Q What did you do, if anything, to satisfy yourself that this 2-foot cushion was enough to compensate for the problem of those transducers?

A As I said, I felt comfortable in our routine of filling and lowering the level and not getting any calls that water was coming over that it was well within the boundaries.

Q Okay. But did you -- did you look at -- at how that 2-foot cushion was arrived at?

A No, sir.

Q And you did get a call at least on the 25th of September that water was coming over, correct?

A Yes.

Q Did you ever get any other calls, other than that September 25th call, that there was water coming over the top?

A No, sir.

Q Were you aware of the -- of the devices that were used as the safety shut-offs on the upper reservoir? They've been referred to as warrick probes.

A No, sir.

Q Do you -- were you aware that there actually was a safety -- or there was supposed to be a safety shut-off

system to the upper reservoir?

A Yes, sir.

Q What was your understanding of what that was?

A Just that there were upper probes that would shut off the pump before an overflow.

Q In operating the system as you did, knowing that there was an error in the readings from the pressure transducers, were you relying on the fact that there was supposed to be a safety shut-off on the upper reservoir?

A Would you repeat that, please?

Q Yeah. In your operation of the upper reservoir, knowing that there was an error in the information you were seeing on your screen from the pressure transducers -- and that is correct, right?

A That is correct.

Q And you're operating under those conditions. Did you, in part, rely on the fact that you thought there was a safety shut-off on the upper reservoir?

A I'm not sure what you're looking for here. Did -- did I --

Q Let me -- I'm sorry. It's a bad question from me, and I'll restate it. You've already said you continued to operate the system. You knew that there was an error in the information you were getting, correct?

A Correct.

Q And I'm just trying to ask you, were -- in your decision to keep operating under those conditions, did you in -- was part of your consideration to keep operating that you knew that there was a safety shut-off on the upper reservoir in case the error was greater that you thought it might be in the information?

A In my day-to-day operations, I never thought about those upper probes. I always controlled it below those. I mean, I knew they were there and they would stop it in case of an overfill, but I did not rely on those.

I did not let it get to those points. So they -- they never really came into my determination and my operation as to like, I don't have to worry about it, I've got back-up trips.

Q How did you know that they would be there to shut the system off if there were an overfill?

A Well, I knew they were there, sir. I had no knowledge whether they would function or not, but I knew that they were there.

Q Okay. Do you know now that they did not function?

A Yes, sir.

Q So when you were operating the facility before the failure on December 14th, did you know what level those probes were set at in order to work properly?

A No, sir.

Q Were you aware that there was fluctuation in the wall height on the top of the parapet wall around the upper reservoir?

A No, sir.

Q Was there any procedure or protocol that you were supposed to follow when you were refilling the upper reservoir as to -- as to what information you were to monitor while the refill was taking place?

A I can't think of a written protocol, sir.

Q Okay. And so you already said that you had this plasma monitor and the reservoir levels and some other things, correct?

A That's correct, sir.

Q What I'm trying to get at here is, did you -- did you look at that information just as much as you thought you needed to, or was there some requirement that you watched that information constantly while that refill was taking place?

A There's nothing that states that I have to watch it constantly. It's there. It's a visual indication. It's in front of me. I'm aware of what's going on. We used a timer, kind of like a -- you know, a baking timer that we would set because we knew how fast the reservoir would rise with one pump or two pumps.

We'd set the timer well ahead of that to be sure that we had time to -- to make our all set to shut down the pumps. It's -- excuse me. It's a large plasma screen there practically in front of me that I'm constantly looking it, and I'm constantly monitoring it, but I'm not standing there the entire time I'm doing it.

Q Let me ask you this: The information that you see on that screen, it shows -- does it show in graph form the level of the reservoir as the water is being pumped in?

A That is correct, sir.

Q Does it also have on that graph a time indicator to show what time it is?

A I believe so, sir.

Q Okay. If that's the case, why did you have to use a baking timer?

A To -- as I said earlier, sir, to put in our offset, we had to time it about 20 minutes ahead of time. It was just to ensure. And I've used this as just kind of a back-up for me because there was other responsibilities I had besides filling the Taum Sauk reservoir, and I didn't want to forget about it. So it was just a reminder for me.

Q So you didn't feel comfortable relying on the information alone that you were seeing on the monitor in

front of you?

A I was concerned -- I was concerned I might get busy doing other things and miss my 20 minutes in advance to notify MISO, to put in my offset for MISO.

Q But wasn't there an alarm system on the -- on the information you were getting on the monitor that if you missed your time, it would have -- something would have gone off to tell you that it's time to turn it off?

A No, sir. The pump just shuts down.

Q That is, if you watch the baking timer correctly?

A No, sir.

MR. SCHAEFER: I don't have any further questions.

JUDGE DALE: Thank you. Commissioner Gaw?

CROSS-EXAMINATION

BY COMMISSIONER GAW:

Q Good morning, Mr. Bolding.

A Good morning, sir.

Q Sorry. Over in this direction. Would you -- would you give me a short synopsis of what it is you do?

A Now or back at the time of the incident?

Q What do you do now?

A Today, I'm with Ameren Energy Marketing, Power Trader Dispatcher. The only thing that changed in my job

since moving to Ameren Energy Marketing is now that I -- I trained and do training as well as dispatching the units.

Q Okay. When did you -- when did you take that position?

A December of last year.

Q And was that your -- your decision, or was it a reorganization?

A It was my decision when the JDA was ending and we were splitting. I made the decision to go with the unregulated side.

Q Did you have a choice?

A Yes, sir. It was my choice. I requested it.

Q What was the other choice -- or what were the other choices that you had?

A Oh, I could have stayed where I was with AmerenUE.

Q Okay. And why did you -- why did you decide to go with Ameren Energy Marketing?

A Because that -- at that time, I knew that on the other side, Ameren Energy Marketing, I'd talked with the supervisor over there and that things were going to be different in the job.

I felt that I could help them with my experience of operating those units because when we were under the JDA, I dispatched all the units with AmerenUE.

The people that were presently on the Ameren unregulated side had not dispatched some of the larger coal-fired units. And I felt that I could help that group by going over with there with my expertise from dispatching units in the past.

I knew the responsibilities would be somewhat different on the other side, and I looked forward to that challenge and felt I could help Ameren.

Q Okay. So the -- the -- the work that you did prior to the move included dispatch of which units within AmerenUE?

A All of them.

Q All of them. Okay.

A Ex -- except when I was with AmerenUE, dispatched all AmerenUE units except for the Silco -- the Edwards unit, the Duck Creek unit.

Q Why would that be?

A They were under a separate control. They were -- they were controlled by the Illinois side at that time.

Q Okay. And your -- your expertise that Ameren Energy Marketing, as I understand you to say, did not have -- why did they need it after the expiration of the JDA?

A They were going from dispatching four units to dispatching maybe 20 units, quite a bit more dispatching.

Q What units were they dispatching?

A They were dispatching the Edwards and the Duck Creek units.

Q And afterwards?

A Afterwards, they retained the Edwards and the Duck Creek units, the two Coffine units, the two -- let's see -- the two Newton units, the four units at Meramec, some additional CTGs, the Grand Tower units.

Q Okay. What are the Grand Tower units?

A The Grand Towers are combined cycle combustion gas turbines.

Q Okay. This is after you went to work for them?

A I'm sorry?

Q Is this after you went to work for them?

A Yes. I went over there in late December. And at midnight, January 1st, the JDA ended, and those units became Ameren Energy Marketing.

Q Okay. What coal units were you -- are you dispatching currently?

A The Edwards unit.

Q All right. I don't know what all are the coal units. You'll have to say that.

A Oh, okay. The Edwards unit, the Duck Creek, Coffine, Newton. Maridocia has three coal-fired and one, I believe, oil-fired.

Q Okay. All right. Now, you say you're also

doing trading now?

A Yes, sir.

Q What -- what are you doing in regard to trading?

A Well, we have the authority to buy and sell power on our shift with -- with other utilities.

Q Okay. How do you do that?

A Well, sir, you have to work up a deal that both parties agree to on buying and selling the power instead of transmission to transmit the power from one entity to other the other.

Q All right. Give me -- describe the transaction for me without it being a specific transaction.

A We may get a call from NRG Energy that they need 50 megawatts for -- it's almost 10:00 now. They may need it for 1:00 this afternoon. I'll get a call ahead of time so we can get everything set up and approved because there are deadline schedules.

So we'll agree on a price for this 50 megawatts that I'm going to sell for Hour Ending 1, which would start at noon. We would set up a transmission, both our side to send it to them. They'd set up transmission to receive it.

That's put into an Oasis tag which we send in for submittal and has to be approved by both parties, transmission providers, and MISO is ours.

Q Say that again, what you just said.
A It would have to be approved by the transmission providers, both -- both parties, MISO being ours.
Q Okay.
A They would approve the tag. The counter party's transmission people would see it and approve the tag. And then with everything approved, then it's -- starting at noon till 1:00 would be selling them 50 megawatts of power at an agreed upon price.
Q Okay. Now, that sounds almost like a transaction that might have occurred prior to the MISO Day 2 market.
A It still happens.
Q Those kind of transactions still go on, correct?
A Yes.
Q That is -- now, do you also deal with -- at all with transactions that take place through the MISO Day 2 market?
A Yes, sir.
Q Okay. Describe how that is different.
A Well, that power is coming out of MISO. What I just described, sir, is coming out of MISO 2 energy.
Q Right. But the specific -- but the specific bilateral transaction, correct?
A Correct. Yeah.

Q I want to understand the difference between that and the transaction that took place in regard to taking the energy off the market itself. Is there a difference?

A I don't know, sir.

Q Do you deal with that?

A Very little.

Q All right. Now, that's fair. Now, when you get to -- did you know how to deal with these trades prior to going to Ameren Energy Market?

A No, sir.

Q Did you get training for that?

A Yes, sir.

Q What kind of training did you have?

A On-the-job trading with a trader.

Q How long did that last?

A Over about a six-month period.

Q Six months. And how much -- were there books or other things for you to read or manuals or instructions?

A We've had some training on trading. There's the risk management policy. And there are limitations on -- on how much we can trade and how we can trade and things like that.

Q But are there -- are there training manuals or other things that you were reading as part of your training? Was there a -- a specific training program?

A No, sir.
Q Okay. So the trader that -- was there one trader assigned to train you?
A The one I worked with on shift, yes, sir.
Q Okay. Did -- how did this training take place? Describe it for me.
A Well, sir, over a six-month period --
Q Yes.
A -- it -- it happened on the job --
Q All right.
A -- as time permitted. If he was doing a trade, we sat down -- I would move on over to his desk, and he would go through the steps with me and requirements, show how to set up the tags, how to set up the transmission, how to set up the deals, how to enter the deals on the blotter and design it, which is our trading tracking system.
Q Okay. And in regard to that training that -- that you received, was -- did you have to pass any tests or anything like that?
A No, sir.
Q All right. Were there any -- how did you know when a trade was -- should be made? How did you know how to price the electricity, for instance?
A You -- we have sheets that we look at and

programs set up that's showing us current prices and predictive prices, hour by hour. It's just a best guess when you're pricing. Sometimes you win. Sometimes you lose.

Q Well, how do you know -- how do you know how to judge, first of all, whether or not there would be a profit in making the transaction?

A You don't, sir.

Q You don't know what -- you don't know if there's a profit or not when you make a transaction?

A No, sir.

Q Why would you make it if there wasn't a profit? Forgive my ignorance?

A Why would you make it when you don't know?

Q Yes.

A Because the information you have to go on, at that time, you're not guaranteed if it's a profit.

Q I didn't ask you if you were guaranteed. I asked you how do you determine whether to make a transaction financial? What factors go into making that decision?

A You looking at your five-minute power costs. You're looking at --

Q Where are you seeing that?

A On the summary sheet that we have.

Q Where does that come --

A From MISO. We're getting a MISO five-minute dispatch that gives the pricing.

Q That's a real-time price?

A That's real-time price.

Q Keep going. And --

A We're also looking at past data, was what was it the same hour yesterday and the week before. We're looking at the market, you know, did it shoot up sharply? We look at MISO. We look at the ramp in and out of MISO that can impact this.

We really don't -- they have a big impact on it. You know, sometimes they're very small, and sometimes they're large. And you don't know until they finally come in whether you actually made money or not on the trade.

Q How do you gauge whether you made money or not? How do you determine that after the fact?

A After the fact after all the charges are in.

Q How? Describe how you determine that after the fact.

A Well, we run a P&L sheet. And we --

Q What's that mean?

A It's a pricing sheet that we list on there the amount of megawatts we sold, the class we sold them at. And then we can come back later and within that hour, we

put in the actual cost for that hour, and then we get the RSD charges for MISO, and put them in. And, bam, then you know if you made a profit or not.

Q What are you comparing -- what -- when you're looking at your gross sales, what do you subtract off to determine what your profit margin was? You described a few things. You said RSD charges. What else?

A The cost of the energy for that hour.

Q The cost of the energy for that hour. How do you determine that?

A By MISO pricing.

Q Is your objective to try to beat the -- the MISO price at a particular node?

A Yes, sir.

Q Okay. I'm starting to get a little better understanding, then. So you're not necessarily concerned, or are you concerned, with the incremental cost or some percentage of -- of fixed costs plus incremental costs of running your units?

A Yes, sir. I'm concerned with that.

Q How does that fit into your analysis in regard to whether or not you made a profit?

A Well, we always -- well, would you repeat the question, please?

Q I can try.

A Okay.

Q I'm trying to understand how the -- the cost of running the generation unit from which you're making the sale, how that factors in to determining whether you've made a profit or not.

A Particularly, which unit I'm running does not factor in to me. It's the price of the MISO grid at the time.

Q Well, okay, let's -- I think I'm following you, but I -- I want to make sure. Your concern, then, is beating that MISO market price with this bilateral transaction price. Am I following that? Is that -- is that your basic analysis when you're deciding when to make a trade?

A Yes.

Q So you're tying to get a better price than what the MISO set price was for that node for that period of time?

A Yes, sir.

Q Is it your assumption that that price is going to cover the incremental price of running that particular generation unit that you're selling from?

A Yes, sir.

Q Why do you make that assumption?

A Well, I'm hoping to -- to beat the MISO node to

make a profit.

Q Let me make this clearer. Let's -- let's assume we've got a gas peaking unit, but your MISO node price for that unit is less than it costs to run that peaking unit at the time plant. Would you make that transaction if you thought you could get a little bit more than the MISO price, but it still wouldn't cover the cost of running the unit?

A I'm not basing any sales on that particular high-priced -- that particular high-priced unit, sir.

Q Are you making a sale from a particular unit when you make it?

A I'm making it from the MISO footprint.

Q And from your generation mix?

A From MISO.

Q Are you making a sale from a particular unit, or are you making it from the units that are already running that you have running in the MISO market? Or is it related at all to your units?

A It's really -- it's really not related specifically to my units. I'm buying the power out of the MISO grid for whatever it settles at.

Q Okay. How, if at all, then, does that relate to the dispatch of your units that you have control over?

A It doesn't.

Q It doesn't. Okay. All right. Now, from that standpoint, when do you do your dispatch work now?

A Continuously. I mean, I'm continuously dispatching -- my main priority is dispatching.

Q And then secondarily, you're doing some trading?

A If I have an opportunity. If I do, my primary function is dispatching.

Q Okay. As a dispatcher, are you -- are you monitoring all of the units while you're on duty?

A Yes, sir.

Q And while you're doing that, you have some free time, you may be able to do some trading?

A Possibly.

Q Okay. Now, how similar is what you're doing now in regard to dispatch to what you were doing prior to UE?

A When I was with UE, my function was dispatching.

Q I -- I -- I understand that. But in regard to the amount that the -- the work load and what you have to do to watch -- the units that you're dispatching, how much difference is there?

A Very little.

Q Very little. Okay. Well, you -- you seem to have more time currently to not be watching the units that you're dispatching. Is that a bad assumption?

A That's a very bad assumption.

Q All right. Now, explain why.
A Because I have a -- a monitor right here. I -- it's virtually right here with the unit generation on it.
Q All right.
A Okay? Right beside it, I have another screen that gives me the MISO five-minute dispatch that shows me where the unit is supposed to be.
Q Okay.
A It's right here. It's never out of my face. I'm constantly looking at that, constantly looking at the unit, dispatching where it's supposed to be. I'm constantly looking at the units where they should be in relation to -- where they are in relation to where they should be. Any discrepancies, I'm calling the plant to find out why.
Q Okay.
A Then I'm relaying that information to MISO.
Q All right.
A I -- I'm not sure where you draw the assumption that I have less time to dispatch the units.
Q Okay. So you would say that the amount of attention that you pay currently to the dispatch of those units is at -- is at least an equal level to what you were doing prior to go AEM?
A That's correct.

Q Were you doing anything other than -- than watching -- and dealing with the dispatch at the time prior to going to AEM while you were with UE?

A No, sir. I was dispatching.

Q All right. So when you're doing trading currently, does someone else watch the screens for you while you're doing the trading?

A No, sir.

Q Can you watch the screens and do the trading at the same time?

A Yes, sir.

Q Okay. What -- what else were you doing -- you've already answered that question. How do you -- how do you -- describe for me what you would be doing while you were with UE in dispatching units. Describe what occurred there from your standpoint.

A Okay. I'm monitoring the generation of the unit. I'm monitoring the five-minute MISO dispatches. I'm ensuring that our units are within their tolerance range for their dispatch points.

If they're not on their -- or within their range or if they've having a problem, I contact the plant to find out why they're not reaching the desired generation or why they can't maintain the desired generation or why they're generating more than the desired generation.

I take that information. I then talk to MISO. If necessary, I can get some -- some -- I call them Band-Aids from MISO. There's legitimate reasons sometimes why the units aren't on their designated dispatch. I'll discuss that with MISO. And they'll sometimes give me deviation exemptions as to why the unit is not where it's -- dispatch is requesting it to be.

I talk with the shift supervisors at the plants about problems they're having about upcoming D rates, outages. I talk to the operators about the D rates and outages.

Q What is a D rate, for the record?

A A D rate, we've got a unit that maybe, you know, once a week they want to come down and back wash the condenser. So we consider that a D rate. They need to lower the generation on the unit from full load maybe to half load or for an hour or so to accomplish this. And we refer to those as D rates.

Q Okay. Keep going. I'm sorry. I interrupted you.

A Okay. I coordinate those with the plants. I'm also reviewing the data that goes in for the day ahead market. The Generation Coordinator establishes that. Oh, wait a minute. I'm sorry. You wanted the UE side.

Q Yes. On the UE now.

A Dispatching units, I have on occasion helped the Power Supply Supervisor. If he's on the line and a call comes in, I'll take the call for him. I take a message. Sometimes I can help them with what they need.

Q Who is that, by the way?

A On my shift?

Q Yes.

A At that time, it was Darin Ferguson.

Q All right. Now, how -- okay. Keep going. Did you have anything else?

A No, sir. That's pretty much it.

Q Okay. Now, while you -- how many minutes would you be watching this while you were on shift?

A Well, I haven't counted them. But there's --

Q Okay. Again, UE is what I'm asking about.

A Yeah. Well, the -- see, the -- the two Rush Island plants, the four Labadie units, the -- Meramec, four units. The Sioux units. Let's see. The Newton units. The Coffine units. They're not -- they're not coal-fired.

Q It's okay. I'm asking for all of the units that you were --

A I'm trying to think of them, sir.

Q Okay. That's --

A You know, it's --

Q Well, there's a lot of units there.
A That's pretty much our base load units.
Q Are you -- are you looking at -- you were also watching Taum Sauk?
A If they were operating, yes, sir.
Q Okay. If they were operating. The other hydros, would you be watching them if they were operating, also?
A I could see Osage, yes, sir.
Q How about Callaway?
A Yes, sir. I can see Callaway.
Q When you say you can see it, is that -- are you able to draw a distinction in being able to see something and control it?
A When I say see it, sir, it's on my screen. When I see it, it's megawatt generation, and I see its -- its MISO base point, which is where they're requesting that the unit generation be.
So when I say I see it, I'm seeing the actual generation of the units and the MISO base point, which is the requested generation from MISO.
Q Okay. You compare those two?
A Constantly.
Q Yeah. Because you want them to be -- the ideal is to be the same, I assume?

A Yes, sir.

Q So what is it, then -- are you the only one -- how many people are there that are doing what you're doing and what you're describing at the -- at the same time on duty.

A Actually, there's myself, the dispatcher and there's the Power Supply Supervisor. Now, he also has the same screens I have. And he's a second set of eyes. I get busy at times, and he can catch things. I mean, he looks at it, too.

Q Okay. Is that similar to AEM now?

A No, sir.

Q Do you have a second set of eyes there?

A Right now, no.

Q Okay. Now, in regard to -- to that question -- let's -- I'm trying to, without being able to see this, visualize a little bit about what you've got in front of you. You were talking about that plasma screen earlier. Are there a number of those around where you're sitting? Tell -- describe that for me.

A There was probably 16 of them.

Q Sixteen?

A Along the wall. Yes, sir. There are two rows on the wall in front of us.

Q Okay. And on -- do you control what's on those

screens?

A Some of them.

Q Okay. Describe that for me.

A Well, we -- we can select what we pull up to a certain extent. Now, the -- the plasma with the Taum Sauk levels, that's the only thing it has. It's never changed. It's constantly there.

Q Okay.

A That one will never change. A couple of other plasmas we do change what we're looking at there. We can go into some of the detail on the plants and -- and look to see some of the detail of the -- of the units that are operating.

If the plant's reporting a problem, we can go into our pi (ph.) system and get a better look at -- at what their problem is.

Q You can't do that with the Taum Sauk screen?

A No.

Q And when you say you can't, that means it's physically not possible or it's just not something that's done as a matter of practice?

A We don't do it. We keep it up there continuously. We do not change that one. We never shut that one down. We could change it, that plasma to a different reading. We never did.

Q What other readings would be available? Do you know?

A I can put about anything in our price system up on that plasma. But we don't change that one. We keep that there on the Taum Sauk readings all the time.

Q Okay. That's fine. But I'm -- I want to ask you what else -- you say there are other pie readings. I need you to tell me first what a pie reading is.

A Well, that's our system -- kind of a plant monitoring system that gives us the ability to go into some of the plants and look at further detail.

Q Okay.

A I could pull up a pulverizer, and I could look at the temperature of the pulverizer, the bearing pressure, the oil temperatures, the pressure. I could look at the feed rates of how fast they're feeding coal into their feeder. I could look at the turbine. I could look at the bearings and then look at bearing temperatures on some of the turbines, any vibration, oil temperatures, control valve positions.

I mean, it just goes on and on and on, sir, the things that we could possibly look at.

Q And with the operating units, you say sometimes you do look at some other things?

A Yes, sir.

Q Why would you do that, first of all?
A I have 30 -- let's see. This October will be 35 years on plant experience.
Q Yes, sir.
A Some of the -- some of the people I work with -- some of the shift supervisors and operators, some have more, some have less experience.
Q Okay.
A Possibly, if I can look at their problem, I might be able to help the plant with suggestions about what we need to do.
Q Okay.
A Suggestions only, not directives. But -- so I'll go in and look. Maybe I can help them.
Q Is that -- what generates you doing that? Is that somebody asking you for assistance or you noticing something that seems to be awry and looking at some other screen?
A Sometimes we notice it ourselves. Sometimes it's from the plant saying, Hey, I'm having a problem, I've got some turbine vibration on such and such a turbine.
Q Okay.
A If I can, I'll go to that turbine generator scene, and I'll pull it up, and I'll look. And maybe I'll

see if there's a difference in temperature problem, maybe it's a different problem see. Maybe I can see something or come to the conclusion as him that, yeah, there's some vibration going on, but we're not sure why. The oil temperature is too cold, too hot. I mean --

Q When that -- when that happens, are they -- who would you be talking to, first of all? Somebody at the plant? Would that be --

A Yes, sir. The Shift Supervisor more likely in those situations.

Q All right. And would they have access to the same screens that you were looking at?

A They have that and more.

Q And more. Okay.

A Yes, sir.

Q From the standpoint of -- of them looking through those screens, you said that -- that kind of a thing normally did not, you tell me, happen at -- with the Taum Sauk plant?

A Did not.

Q Okay. Do you know why?

A I don't -- I've never accessed Taum Sauk. I'm not even sure if it's in the system where I can access it.

Q Okay. Do you -- do you have any idea why that is?

A No, sir.
Q Did you ever ask anybody?
A No, sir.
Q Is there any other plant that you would say was handled in that fashion in regard to screens?
A We don't have the data on or the ability to --
Q That you -- that you normally, as a matter of practice would only have one -- one picture up there, and that would be all that would be normally looked at by you?
A Well, I -- I'm not really sure how to answer your question, so I'll give you an answer. And if you don't like it, you can make it different.
Q Well, it's --
A I had the data up there on Taum Sauk that I'm comfortable with operating or giving instructions to the operator at Osage to start and stop the facility.
Q In other words -- okay. So is it your decision to not look at anything else except that screen, or is -- is that something that has been the practice? Or is it something that has been directed? Give me -- can you put it into one of those categories?
A That's the practice.
Q The practice. Okay. And you know it's the practice because of what?
A The way they've been doing it since I got

there --

Q All right.

A -- in April of '05.

Q Okay. When you say they, who do you mean?

A The way I was trained by the other power dispatchers --

Q Okay.

A -- as to what to monitor for Taum Sauk in starting and stopping.

Q Okay. Let's touch a bit on the training. I want to come back to what we're talking about. When you were -- when you initially came on board, did you receive specific training for the dispatch of these units?

A Yes, sir, I did.

Q All right. Describe that training for me.

A Excuse me. It was about six weeks of on-the-job training with another qualified power dispatcher before I was released on my own to dispatch.

Q Okay. And what did the training involve?

A The training was all hands-on. It started out with I think the first shift observing the Power Dispatcher, notifying the plants, going through their daily functions and routines to observing to the next shift starting to inject myself into that position with the -- the qualified power dispatcher or trained power

dispatcher standing beside me, observing and watching every step I make.

That went on for six weeks. And with each additional shift, that person became more comfortable that I could perform the duties and had less involvement until I was deemed qualified and put on my own shift.

Q Okay. How long did that take for you?

A About six weeks.

Q I wanted to make sure I was -- that you -- you said six weeks several times. I wanted to make sure that was the same time frame. Now, when -- about when was that?

A That was about late June of 2005.

Q Late June of 2005?

A Yes, sir.

Q Okay. What were you doing before that?

A Okay. I joined ESO, the dispatch group, in April. First, I went through three weeks of training in the NERC exam.

Q Okay.

A Completed that around the 13th of May and immediately went into the training and completed that at the end of June and started carrying my own shift.

Prior to that, I was a supervisor at the Rush Island power plant.

Q And I heard you testifying a little bit about that earlier, but what -- what did those duties involve?

A It's on a 12-hour shift, rotating shifts. We directed the operation of the plant. Nights and weekends, we were the only management people there.

Q Okay.

A And we basically ran the plant.

Q All right. And at some point in time, did you -- did you apply to move into this new position?

A Yes, sir, I did.

Q Was it an advancement for you?

A Pretty much a -- pay-wise, a lateral move.

Q Was it -- was -- okay. Well, was -- how much of what you knew in your previous job transferred over to the dispatch side?

A A lot.

Q Okay. Tell me -- tell me how.

A My -- my knowledge of the operations of the plant. It's -- one of the things Ameren looks for in -- in power dispatchers is knowledge of the plants and the facilities. It makes our -- makes our -- having an understanding of the plants and how they work makes it much easier to understand what's going on with the -- with the units.

Q Okay. Now, tell me why -- why and when that's

important when you're doing dispatch work.

A Because you're constantly dealing with the plants. They call and tell you that they lost a feeder. They had a roller disintegrate. Or they call and tell you they had a exhauster bearing failure. You know exactly what they're talking about. You don't have to try and -- well, what's that?

You know exactly what happened. You know how it's going to impact you. Or the plant. Excuse me. The unit. Sometimes you have a pretty good idea of how long it's going to take to repair this and how long that unit is going to be D rated or -- or delayed because of that.

When they're going through unit start-ups and they call and tell you certain problems they're having, didn't get a permissive on a boiler circulating water pump, you know exactly what -- without that, they can't continue or are in a turbine hold.

So having knowledge of the units and how they operate is a tremendous advantage to me being a power dispatcher.

Q Okay.

A If you look at the power dispatchers we had at AmerenUE at that time, most of us were operators and shift supervisors.

Q Okay. Do you know whether any of the -- of the

dispatchers had previous experience at a hydro plants?

A I do not.

Q Did you?

A No, sir.

Q Now, the training that you received, did it -- were you given documents to -- to study during this training process?

A During the hands-on portion, sir?

Q Yes.

A Official Ameren documents? No.

Q Okay. Go ahead. You -- I'm trying to understand big picture here, so --

A The other dispatchers are accumulated -- you know, made notebooks of, Here's how you do this, and, Here's how you do this, and -- and I was privy to that.

Q Okay. But they weren't official Ameren documents. They were -- they were notes that had been made by the dispatchers?

A Yes.

Q Okay. You said something about taking a test with NERC.

A Yes.

Q That's N-E-R-C, right?

A Yes, sir.

Q Tell me what that was about.

A Well, we have to be certified by NERC to dispatch the units. And -- and I have a Reliability Coordinator certificate from NERC. I took the test and -- and completed that and certified.

Q Okay. But, generally, what did it involve? I don't want you to go into a lot of detail here, but what was it you -- you had to pass the test about?

A Well, there's operation of the unit, ATC control on the units, transmission, some relaying.

Q Okay.

A Dispatching. Gosh, the NERC policies and standards, understanding those policies and standards that govern us.

Q Okay.

A It was on those.

Q Was there anything specific in that training about particular units in AmerenUE?

A No, sir.

Q Okay. It was just generally about keeping the system reliable, correct?

A Yes, sir.

Q All right. Now, let's -- I want to ask a -- about the screen that you're talking about -- describing that Taum Sauk -- where Taum Sauk information was displayed. Describe for me exactly, to the extent that

you can anyway, exactly what's on that screen that you're looking at while you were there?

A There's the level indication for the upper reservoir.

Q Is that a number, or is it a graph?

A Digital indication.

Q All right. So it has a number?

A Yes, sir.

Q And what else?

A There's also a graph that shows the -- visual graph that shows the time and the level.

Q Okay.

A So as you're filling or lowering or stabilized, it's drawing instantaneous or up to the moment graph of where the level is at. It reads in tenths of a foot.

Q Okay.

A There's also --

Q Tenths of a foot. Okay. Keep going.

A Yes, sir. There's also the lower reservoir which shows the level of the reservoir and a graph showing its level as well.

Q All right. Does the graph cover any particular time increments that's up on that screen? Do you know?

A Yes, sir.

Q Tell me what that is.

A I don't recall exactly when it is. It's several hours of data.

Q Several -- that's -- that's helpful. Okay. So if you're looking at that graph, does it show -- if you're filling the upper reservoir, does the upper reservoir show -- I'm doing this backwards. Sorry. Does it show an -- an inclining line --

A -- yes, sir.

Q Up to whatever level you're at currently?

A Yes, sir.

Q Okay. All right. That's helpful. And what was the -- the number on the high level that you're supposed to get to at the upper reservoir, Taum Sauk?

A 1594.

Q 1594?

A Yes, sir.

Q Was that -- and what time frame are you talking about when you say 1594?

A At the time of the failure.

Q At the time of the failure. Okay. What -- had there -- had that been changed prior to that?

A Yes, sir. That was changed in October.

Q Of that '05 year?

A Yes, sir. It was lowered 2 feet from 1596. Or at the time I'd been there, that was the normal pool

level. And it was reduced to 1594.

Q Okay. And what's the earliest you would have been dealing with this on dispatch again?

A May.

Q Of '05?

A Yes, sir.

Q So you wouldn't have seen anything or had any knowledge about what it was before that?

A No, sir.

Q Okay.

COMMISSIONER GAW: Would someone hand him the -- the Independent Panel of Consultants report? FERC?

JUDGE DALE: Does anyone have it?

COMMISSIONER GAW: I can come back to it later.

JUDGE DALE: All the exhibits are gone today to be put into EFIS.

COMMISSIONER GAW: Can they bring them back at some point?

COMMISSIONER CLAYTON: No.

COMMISSIONER GAW: I mean, I've got my copy here, but I can't look at it at the same time.

JUDGE DALE: I'll check on that.

MR. BYRNE: He's got it, Commissioner.

COMMISSIONER GAW: Oh, good. Thanks.

Q (By Commissioner Gaw) I want you to turn in a

minute here -- let's -- let's look first at Figure 7-9. It's toward the back, Mr. Bolding. You can get into those exhibits. They have figures at the bottom. Figure 7 dash -- did you find any of those numbers?

A I found 7-1.

Q Just keep going back from there. You'll get to it.

A Well, then it goes into Section 8. I mean, tell me where to go and --

MR. BYRNE: Your Honor, we've been going for an hour and a half. Could we take a break and find him the doc -- make sure he has the right document and go on?

COMMISSIONER GAW: I don't mind.

JUDGE DALE: That's an excellent suggestion. Off the record.

(Break in proceedings.)

JUDGE DALE: Go back on the record. Commissioner Gaw?

Q (By Commissioner Gaw) Okay. I think we were dealing with the Independent Panel of Consultants report of December 14th, '05. And I was asking, Mr. Bolding, if -- if you could turn to 79. Do you have that now in front of you?

A Yes, sir, I do.

Q Can you tell me what that is?

A Well, it appears to be -- I mean, there's -- the labeling is not there, but it appears to be the graph of the Taum Sauk upper reservoir.

Q Is this similar to what you are seeing on the portion of the plasma screen that you talked about that shows the elevation? Or is it different than this?

A This is one part of it.

Q It's one part?

A Yes, sir.

Q Okay. Would you see more than this on the screen at one time, generally?

A Yes, sir.

Q Okay. Now, this is labeled down there Hurricane Rita Event. Of course, it wasn't a hurricane at the time it passed through Missouri. I suppose you know that.

A Yes.

Q Now, is there anything -- tell me what we're seeing here. Toward the left of the graph, we're seeing a line going up. Can you tell me what that -- what that line represents?

A Well, that line represents that they were at that time filling the upper reservoir.

Q Okay. And then it levels off at some point in time up there. Do you see that?

A Yes, sir.

Q Than -- that's -- leveling off is between 1590 and 1600. Do you see that?
A Yes, sir.
Q Okay. Can you -- is that -- do you have more specific measurements than that on that graph?
A We have a digital indication of the level.
Q So in addition to this graph, you'd also have a number up there that indicated what the level was?
A Yes, sir.
Q Okay. All right. And then -- then after it levels off, then there's a drop down. Do you see that?
A Yes, sir.
Q Okay. Can you tell me what that represents?
A I can assume what that represents.
Q Okay.
A I mean, you know --
Q What do you think it represents?
A That looks like possibly where we pumped it down a couple of feet where we were notified that the wind was causing the water to lap over the top from the waves.
Q Okay. This date is on -- or the date of this -- this graph is what? Can you tell?
A 9/25.
Q All right. And is that the date that there was an overtopping?

A Yes, sir.
Q And then there's -- then it holds steady for -- for a little while, and then it drops down again, correct?
A Yes, sir.
Q There's another leveling off point under 1560. Do you see that?
A Yes, sir.
Q What does that represent?
A Well, to me, sir, it appears that for a period of time, we stopped generating.
Q Okay. Is that unusual or usual?
A I can't say.
Q Okay. All right. Now, it's -- there's some degree of jaggedness to the lines. Would you say that?
A It appears that way.
Q Is that an appearance that you were used to seeing?
A Not on my screen.
Q Would your screen not reflect that? Or did -- do you just not recall?
A I never saw the jaggedness.
Q You never saw it?
A The little wavy kind of lines?
Q Yes.
A The plateaus where you stop generating and you

start generating, those changes. But this little wavy I'm seeing here, I've never seen that on our graph.

Q Okay. Now, your shift was what time frame?

A Five in the afternoon till about five in the morning.

Q Was that -- was that always the case?

A We worked rotating shifts, days and nights.

Q Okay. So sometimes you'd be on in the days?

A Yes, sir.

Q But you were on on the -- on the pump portion of -- of the 9/25/05 date? You were on duty?

A I was not on the pump portion where they -- where they filled it. I was on the generation side.

Q You were on the generation side. Okay. About what time did you come on? Do you know?

A Probably about five in the morning, a little after five.

Q Okay. All right. So you wouldn't have been -- would you have seen on your screen the pumped up portion?

A Yes, sir.

Q Okay. But you don't recall seeing any jaggedness on your screen?

A No, sir.

Q Look at Figure 17, if you would.

A I'm sorry. Excuse me.

Q No problem. Pull that -- pull that a little closer to you. There you go.

A Thank you.

Q Do you see Figure 7-10?

A Yes, sir.

Q Do you know what that represents?

A Once again, I can draw an assumption. But --

Q What did you -- what does it appear to be?

A It appears that someone has honed in on a portion -- blown up and shown me a portion of that seven -- excuse me -- 7-9 graph that we were looking at.

Q Okay. Is that something that would have been -- would have appeared that -- in that fashion on your screen at the time?

A Did not look like this on my screen.

Q Okay. Can you offer any explanation about why there would be a difference, if you -- if you know?

A I don't know. I can make assumptions, but --

Q Well, if you have, you know --

Q If you have any kind of -- of a theory, I'd like to hear about it.

A I -- sure. I've printed before with printers and diagonal lines -- sometimes, you know, you don't get that nice, smooth that you're trying to print off. It comes a little jagged, you know.

Q So -- so you think this could be as a result of -- of the printer, not as a result of what actually was occurring?

A I'll state that I did not see this intensity on my screen. My screen was nice and smooth. You know, how this presented out this way, sir, I'm not sure.

Q Now, what portion of this would -- would you -- assuming that it -- that it's a representation of the right times here, what portion of this would you have been on duty?

A Well, approximately midway through the plateau, the -- I know I was there because that's showing 9:36. The other time mark was at 2400. I wasn't there. So, you know, guesstimating, probably, you know, quarter inch or so into the plateau maybe I was there. I'm, you know, guessing.

Q Okay. Now, if you had seen those jagged features at the time, what -- what, if anything, would that have caused you to believe?

A I would be wondering why -- you know, what's going on with the level because it would have -- had I seen -- had I seen the -- my indicator, my digital indicator more so than this -- the graph --

Q Yes.

A -- and I'd seen it jumping around, I would have

been concerned if we were having maybe a problem with the level indicator.

Q Okay.

A I did not see that.

Q All right. And -- and what would have made you think that there might have been a problem with the level indicator?

A I said I didn't see a problem. I said --.

Q If --

A If I saw it moving around, then I would have been concerned. I didn't see that, sir.

Q Okay. But if you would have seen it as it's represented on Figure 10, that would have given you concern?

A Yes.

Q Okay. Take a look at Figure 7-13 for me.

A Okay, sir.

Q What does that appear to be?

A It appears to be the upper reservoir level from December 1st and 2nd.

Q Okay. And is it -- is it similar to what you have on the plasma screen again?

A No, sir.

Q Okay. Tell me how it varies.

A I've never seen -- when you get up here to the

two pump operation --

Q Yes.

A -- I've never seen the up and down jagged like that while running a pump.

Q Never seen it?

A No, sir.

Q If you would have seen that, what would that have -- what would you have thought?

A I would have thought there was possibly a problem with our level indicator, and I would have asked the Power Supply Supervisor to contact the Transmission Operations Supervisor to get Instrumentation to check it out.

Q Okay.

A At any time, if I'd ever been pumping and saw a drop in the level, I would be very concerned.

Q All right. And you could see, at least what -- according to this graph says 7-13 some drops going on as it's filling, correct?

A I see that, sir, yes.

Q And, again, that's something that would have caused you concern if you would have seen it?

A Yes, it would, sir.

Q Look at 7-14 for me. This appears to be December the 2nd of '05. Again, does that appear to be

the -- the -- a representation of the pump-up and then the generation portion of what happened on that date according to this -- what it appears to be representing?

A Yes, sir. It appears to be a partial of the filling and -- and the pumping in generation on that date.

Q Okay. And is this similar or dissimilar to what you remember seeing on December 2nd, if you recall?

A First of all, sir, I don't even know if I was working December 2nd. I don't recall.

Q That's fair.

A But I will tell you I've never seen -- never seen this type of -- of -- of graphic on this screen before, this erratic lines. Never.

Q Okay. Now, let's look at -- the next figure is 7-15. Do you see that? That appears to represent January of '05, right?

A That's what it says. Yes, sir.

Q All right. Now, would it be fair to say that we don't see the jaggedness that we saw in some of those previous pictures in this picture?

A Yes. You could say that.

Q Does it look anywhere consistent or inconsistent with what you normally would have seen on your screen? I realize you weren't there on January of '05, right?

A Not dispatching. No, sir.

Q Yes.
A It looks different in the fact that the graph I see has always been a nice, smooth, line. No jagged at all.
Q Okay. Do you see much jaggedness to this line?
A Down toward the bottom, there appears to be a little.
Q Okay.
A From -- from beginning to about, I don't know, 1550.
Q Okay.
A Then a little bit after that.
Q All right. Let -- let's scan forward here as we're going. And we'll note the dates, okay? The next figure is 7-16, and it's represented as April of '05. Do you see that one?
A Yes, sir.
Q Okay. And then let's go to the text one, 7-17. It appears to be June of '05, correct?
A Yes, sir.
Q All right. And then July of '05 is in 7-18, according to the representation here, right?
A 7-1?
Q 7-18. Do you have 7-18?
A Yes. I have 7-18.

Q Yes. It's 7-1. I'm sorry. You're talking about the date now, correct?

A Yes, sir.

Q Is that correct, sir?

A Yes, sir. It's the date.

Q You have to answer out loud so she can record it is the only reason I'm asking.

A Okay.

Q Okay. And then go one more, August the 1st of '05 in Figure 7-19, correct?

A Yes, sir.

Q And then August the 10th of '05, Figure 7-20. Do you see that?

A Yes, sir, I do.

Q Do you notice the -- the distinction as you're moving, or the differences as you're moving forward in time in the -- in the amount of jaggedness that appears in that line?

A Yes, sir. I see that.

Q It's progressively getting a little more jagged. Wouldn't you agree?

A Yes, sir.

Q Okay. And go on to August the 17th in Figure 7-21. Do you see that?

A Yes, sir.

Q A little more jagged, right?
A In this graph. Yes, sir. Or this illustration.
Q Yes. That's -- that's what I'm referring to. And then 7-22 is September 1st of '05, right?
A Yes, sir.
Q Little more jagged yet?
A Yes, sir.
Q Okay. And, of course, then we're getting into a little bit of different -- kind of a -- of a thing there on -- on Figure 7-23. Look at 7-24, which is the December 13th date. Do you see that?
A Yes, sir.
Q Again, you see that there's a significant amount of -- of jaggedness on that date, correct?
A That's what this indicates.
Q Yeah. And what does that seem to show there? We may have looked at this a little bit before -- someone did with you. But do you see where it drops down significantly on the Pump 2 start?
A Yes, sir.
Q All right. And were you on duty at that time?
A Yes, sir, I was.
Q Did you see anything that indicated that -- what we're seeing on this graph when you were on duty?
A No, sir.

Q If you would have, what would you have done?
A I would have been very concerned. We would have been trying to find out why we're showing a dropping level while we're filling.
Q Okay. And what would you have done other than be concerned? What would you have done?
A We would have called to have Instrumentation check out the lower indicator level. I would have called the Osage operator and asked him, you know, has he seen anything unusual? Is he seeing the same thing? If it continued, we would have shut pumping down.
Q Okay. Look at this Figure 7-23 for a moment. Do you see that?
A Yes, sir. I see that.
Q Okay. Now, that is a -- that's -- that's blown up somewhat compared to some of the others that we've seen, isn't it?
A Yes, sir.
Q It's a shorter -- it's showing shorter increments of distance on the levels, isn't it?
A Yes, sir.
Q Okay. But do -- do you see the -- can you tell me what that appears to be saying to you?
A It appears the level is moving, the level indication.

Q And -- and even with the -- with the units off, it appears that the level jumps up significantly at some point, doesn't it?

A Yes, sir.

Q Again, would that cause you concern if you had seen that on a screen?

A Yes, sir. A sudden rise in the level and the pumps off, yes, sir.

Q Okay. Are there -- are the records of these -- of these dates on the pump -- pump and generation mode, the graphs showing rising levels, are those kept historically by AmerenUE?

A I don't know, sir.

Q Okay. Can you think any other source for these particular diagrams that we've been going through other than AmerenUE?

A You mean someone else having them besides Ameren?

Q Yes.

A I don't know, sir.

Q Do you normally share this information with any other entity?

A No, sir.

Q Okay. You said -- stated a little earlier about the high level on the upper reservoir. Was there a -- was

there a low level on the lower reservoir while you were pumping up that you would watch?

A Yes, sir.

Q What was that, if you recall?

A I don't recall, sir.

Q Was there a figure, though, that you -- that you would not take the lower reservoir below while you were pumping up?

A Yes, sir.

Q Okay. How did that compare to the upper level that -- that you were filling the reservoir up to? Was it -- was there a consistency between the low point on the lower reservoir during pump-up and the high point on the upper reservoir during pump-up?

A Would you repeat that, please?

Q Yes. Well, you were pumping up to first 1596 and then to a level indicator of 1594, correct?

A Correct, sir.

Q All right. Now, what I'm -- what I'm interested in is whether or not there was any change in what you were doing in regard to the lower reservoir's low level while you were pumping up.

A There was not a change that I'm aware of, sir.

Q When you say you're not aware of it, are you saying that you don't recall or that -- that you don't --

I want to know whether you don't know now or whether you just didn't know in the past.

A I never received any instructions, anything telling me that the lower reservoir level had changed, the low point.

Q Had changed.

A I never received anything saying that it had changed.

Q Okay. Was it your understanding when the -- or did you have an understanding when the level was changed in the upper reservoir from 1596 to 1594 as to whether or not that actually was intended to change the amount -- the actual level of the water as it was compared to the -- to the top of the reservoir wall, if you know?

A My understanding was it was to lower the level 2 feet below our normal operating level. Now --

Q Was it intended that the actual water level come down or just that there be a compensation for a misreading by the level indicators?

A No one ever sat me down and told me. But my assumption was that it was an actual 2 foot drop in the operating level.

Q Okay. But no one ever said that to you?

A No, sir.

Q Okay. Why did you think that?

A Because my indications told me that it was 2 feet lower than where it normally was.

Q So did anyone ever tell you that level indicators were off?

A I saw it in an e-mail, sir.

Q Okay. What -- what did you think when you received that e-mail?

A I knew they were having problems with the level indicators. The -- I took it as we're going to -- as a safety precaution to ensure that we have a cushion and have room, we're going to lower the level, the actual operating reservoir level 2 feet to give us some extra room to compensate for a possible meter error. That's what I took it as.

Q Okay. So you were under the belief, if I'm following you, that the actual reservoir level was being lowered by 2 feet?

A Yes, sir.

Q Were you able to, from your screens, have any indication about the change in the amount of energy being generated after you -- the level was lowered, quote, unquote?

A Well, sir, we have a normal maximum pool level. We can pump it down to a minimum level, and we can generate between there. When that level is 2 feet less to

start with, yes, you have less energy to generate with, so your run times will be shortened.

Q Okay. Did you -- were you able to see the amount of power being generated at Taum Sauk?

A Yes, sir.

Q Okay. Did you notice a difference in the amount of power being generated after you changed the level?

A No, sir.

Q Does that mean that there wasn't a change or that you didn't notice it? I asked the question badly.

A Yes, you did.

Q I --

A I'm sorry, sir.

Q No. That's all right.

A I apologize.

COMMISSIONER CLAYTON: Yeah, yeah, yeah.

A That time of year is what we refer to as a shoulder month --

Q (By Commissioner Gaw) Okay.

A -- where it gets warm sometimes during the day.

Q Yes.

A But, you know, we may not be running them every day. Or it may not be cold enough that we have to run them. The two -- I did not -- from the time we dropped the level 2 feet until the breach, I never myself saw or

participated in a generation where we were limited in our generation because we had lowered the level 2 feet.

The calls from MISO were not that long of a run in duration that it was, you know, Oh, darn, if we'd have had two more feet, we could have run longer. I did not at any time during that situation see that situation on any of my shifts. The runs from MISO were usually pretty short in duration in this period.

Q Okay. So does that mean that the -- the lower -- the upper reservoir was not being taken down to its lower limits?

A That's -- not all the way down. We -- you know, we may not -- we may not run them all the way down.

Q Do you know --

A Not always.

Q And there would be a record of how that was -- how that was done on a daily basis, right?

A Yes.

Q Have you gone -- have you seen the run time that's -- that are contained in any of the FERC reports?

A No, sir.

Q So are you -- are you telling me what -- what you think is generally the case, or do you specifically recall what occurred in regard to run times in the fall and early winter of '05?

A Okay. Once we lowered the level on our reservoir --

Q Yes.

A -- in our daily offers to MISO --

Q Yes.

A -- the trader took into consideration that we only have this much water, so we're not going to offer Taum Sauk to MISO to run longer than we have energy to run it.

So we're getting our daily awards from MISO. They weren't exceeding our pond capacity. It wasn't like we -- we'd pump down and say -- or generate down and then say, Oh, my gosh, we've got to pump up for another couple of hours so we can run another hour or two.

MISO was -- was honoring our day ahead awards where we had reduced our offer to them equivalent to dropping the 2 feet. Basically, we were telling MISO there's only this much energy available here due to the level change in our daily offer.

So they would in turn on their day ahead, based on what we had offered, which was a reduced offer because of the lowering of the level.

Q Now, do you know that to be the case, or you -- or you were thinking that would have been what they would have done?

A I know that's what they did.
Q Who told you?
A I'm on the trade floor. I hear them. I have -- I have the Power Supply Supervisor sitting here. I have the Trader sitting right here. I'm right in between the two.
Q Okay.
A And when we lowered the level of Taum Sauk, that impacted our offer to MISO of how much maximum generation we could get out of the -- Taum Sauk at a given -- for a given pond.
Q Who would have been -- who would have been in charge of putting those bids in at the time to MISO?
A I believe it -- and I'm not actually sure because it kind of -- the responsibility kind of moved a little. I believe it was the Power Supply Supervisor at that time that was setting up the day aheads.
The Traders then would review it before they would submit it to MISO.
Q Who would that have been?
A Dan Ferguson was my Power Supply Supervisor.
Q Okay. So -- so you believed he was the one that would have been putting in the -- the amount of energy available?
A Yes, sir.

Q Now, you were testifying a little earlier about MISO making decisions about dispatching units, correct, just generally speaking?

A General. Giving day ahead awards.

Q Those -- those decisions by MISO in regard to what units it dispatch, those -- are those in regard to units that have been made available?

A Yes, sir. Through our day ahead awards.

Q All right. And it is Ameren's decision, is it not, about what units to make available?

A Yes, sir.

Q And -- and Ameren bids in units for availability, do they not?

A Yes, sir, we do.

Q So the selection of time to -- when these bids are made for units to run, that's done by Ameren itself, correct?

A Would you rephrase that, please, or repeat it?

Q When a -- when a decision -- the decision to bid units for particular times is Ameren's decision, correct?

A I'm -- yes, sir.

Q Okay. And then within those bids, MISO -- if -- if units had been bid in, select orders of dispatch based upon those units being on -- on a -- as -- as the -- as the bid prices rise up until they meet their level of

generation need, correct?

A They start economically, load the cheapest units first. Yes, sir.

Q Yeah. Then the market clearing price is what's actually used for running those units?

A Yes, sir.

Q If you knew that there was a problem with the transducers with the -- with the level gauges, why -- why would you assume that the level indication that you had on your screen was correct?

A I felt comfortable that the people at the facility that were watching the facility and inspecting it and looking at the actual reservoir level because they had not reported a problem with the level we were filling the reservoir to, that our 2-foot compensation was within the allowed tolerances.

Q And you talked to them to verify that; is that correct?

A No, sir.

Q You had no -- what -- what did you base that assumption on?

A Refilling the reservoir to a certain level day after day after day and not hearing that there was a problem.

Q But you knew that the level that you were seeing

on your screen was not -- was not reliable, correct, after that e-mail and -- that you received in September or October?

A That is correct.

Q Did someone tell you that 2 feet was sufficient to cover the error that you were seeing on your screen?

A In the e-mail that came out that said we were lowering it 2 feet that that should be -- I think the term was adequate cushion or sufficient cushion against the meter error.

Q And you -- and you based all of your decisions upon that?

A Yes, sir.

Q Did you have any discussion with anyone around you about that issue, about the level indicator being off?

A Yes, sir.

Q Who?

A Steve Schoolcraft.

Q And tell me about that discussion.

A I heard Steve discussing one day about getting divers in to repair the level indicator at Taum Sauk. And he took the time to draw me a -- a rough picture of what the level indicator looked like and how it had come loose from its stabilizer support --

Q Okay.

A -- and how it had a slight bow in it.
Q Okay.
A And it -- I remember he talked about arranging divers to come in and -- and repair it. And -- and I heard him, you know, discussing with the traders about possible dates and times. That was it.
Q All right. And did he give you any -- any information in regard to the issue of the -- the level adjustment of 2 feet?
A He forwarded me the e-mail --
Q Okay.
A -- that -- and I forget exactly who it was from or who the originator was. But Steve forwarded that e-mail discussing the -- the bow in the level indicator and dropping the level 2 feet to all the Dispatchers and Power Supply Supervisors.
Q Did you ask him any additional questions?
A No, sir.
Q Did he make any statements in regard to getting it fixed?
A As I've said, sir, he -- I did hear him discussing with the traders and the Power Supply Supervisor, you know, looking at potential times when they could get the divers in to make these repairs.
Q Okay. Can you tell me, to the nearest that you

can recall, what he -- what he said?

A No, sir.

Q You have no recollection of any of -- of any of that?

A Sir, he was not directly talking to me about it. He was talking to the Power Supply Supervisor who was on my one side, and the Trader on my other side. Steve sits directly behind me.

Q Okay.

A As I was conducting my duties, I could hear him discussing it. I was not totally tuned in to it, so I do not want to state what was said.

I -- I recall them having a discussion about this. But details, I did not know, sir.

Q Well, I need you to clarify. You said you did not want to say what was said. I'm asking you what you heard. I understand you probably didn't mean it exactly like it came out, but tell me what you recall him saying.

A I recall a discussion between the Power Supply Supervisor, the Generation Coordinator and the Trader about potential dates. Period.

Q Okay. Do you know -- and who else was in that conversation besides Mr. Schoolcraft?

A The Power Supply Supervisor and one of the Traders.

Q Names. I need names?.
A The Power Supply Supervisor I worked with was Darin Ferguson. I'm not sure which Trader he was discussing this with. There are several of them.
Q Okay. Do you know who would have been on duty at the time?
A No, sir.
Q Okay. Let's talk about December the 14th a little bit. I believe you testified earlier that there was a -- that you manually shut down one of the pumps. Tell me which one that was again. Was it -- if you recall?
A It was the last one, I believe. The documentation I've seen said that was Pump 2.
Q And -- and why, again, did you manually shut it down?
A Because we were scheduled to generate that morning at 6:00. I forget the specific time, but about a 20, 30 minute turnaround that it takes the plant to go from pump mode to generation mode.
Q Okay.
A I wanted to allow adequate time, so I shut it off a little -- 2 inches -- two-tenths of an inch -- or excuse me -- a few tenths of a foot early to ensure that there was an adequate time to make the turnaround.

Q Okay.

A So they would be ready to pump at six. Excuse me . Generate at six.

Q And what was -- what, if you recall, was the level indicator at the time you shut it down?

A 1593.9.

Q And you said something about that someone said that you didn't give them a full pool?

A Yes, sir. That was my relief.

Q Who was that again?

A Keith Paulman.

Q All right. And can you describe -- flush that conversation out any more than that?

A I believe he came in just as I was shutting down the second pump, just as it achieved shutdown. And, of course, it's a big plasma screen. You can't miss it. Large digital numbers and the graph.

And I was just telling him that I had just shut down the second pump. And he commented something of, Yeah, you shorted me a little bit, you don't even have a full pond because it settled at 1593.6, which is about 6 inches under our normal fill level.

Q Okay. Which had become your normal fill level after it changed from 1596 to 1594 on the indicator?

A Yes, sir.

Q Now, what time was that, again, approximately?
A Probably five after five, ten after five in the morning.
Q All right. Do you know in relation to -- to that time, that conversation, what was happening at Taum Sauk?
A I had no idea.
Q Do you know now in retrospect?
A Yeah.
Q Was -- was the -- was the reservoir being overtopped at that point?
A Oh, I don't know.
Q Okay. Okay.
A Oh, I -- excuse me. I thought you were asking me if I knew what had happened to the reservoir after we filled it.
Q No. I'm trying to get a time -- time sequence here between this conversation and when -- when the events started becoming more obvious. So at what point in time were you aware that the upper reservoir's level was changing rapidly?
A I wasn't.
Q You left before that --
A Yes.
Q -- before that time, correct?

A Yes, sir. I was relieved and had gone before it started dropping.

Q Do you remember what time you left?

A 5:20, 5:25. I'm not exactly sure. We don't clock out.

Q Okay. And at some point in time, were you made aware about -- of the problem?

A The next evening when I came in.

Q That was the first time that you were aware of it?

A Yes, sir.

Q This was over 24 hours later or less than --

A Twelve hours.

Q Twelve hours. Okay. By that time, it was in the news, right?

A Yes, sir.

Q But the first you heard of it was when you came into work?

A Yes, sir.

Q And who told you?

A The Power Supply Supervisor and -- and the Power Dispatcher.

Q And who were they, again?

A At that time, it was Keith Paulman, the Power Dispatcher, and Rodney Hamblin, the Power Supply

Supervisor.

Q What did they say?

A I came on to the trade floor, and everything looked so -- I mean, everyone was standing around -- well, my reliefs were standing there and just looked like -- he was just very -- I don't know how to describe it.

It looked like their best friend had just died. And my question to them was, you know, what's going on, guys? It looks like somebody died around here.

Q Right.

A And their answer was, Well, you know about Taum Sauk, don't you? And I said, No, what? And that's the first time I knew it had ruptured.

Q And what else -- what else occurred in that conversation?

A Oh, we -- we -- they were showing me the level indicators of how it just fell out. They were -- they were telling me their actions that morning, you know, after we left.

They were telling me I probably hadn't even made it to the car when they hooked up and saw the level indication had fallen out.

Q Okay. Did they say anything else?

A A lot. I mean, we talked about it for quite a while. The Power Supply Supervisor showed me some

documentation that he had pulled up, you know, showing the -- going back and looking at it for a period of time and trying to find a discrepancy, something that would, you know -- something abnormal, going back over a period of time over filling it, trying to figure out, you know, what happened?

You know, was there any -- we didn't see anything that had gone -- we'd spent the day going back and looking was there an indicator somewhere that we missed that said, Hey, you've got a problem? And he couldn't find anything.

Q And who is he again?

A Ronnie Hamblin.

Q If you'll look at Figure 7-25 there, it -- on that -- consultant's report, it gives you an idea, does it not, of when the water level started dropping rapidly?

A Yes, sir.

Q Do you see -- does that -- that corresponding time down below have -- have any bearing on your memory in regard to -- to when you would have left that morning?

A No, sir.

Q Okay. It appears to be somewhere between 5:09 and 5:16, doesn't it?

A Yes, sir, it does.

Q Okay. And your -- and your testimony is -- on

the screen did not show any dramatic fall before you left that morning of December the 14th, '05?

A My statement is I did not see any direct fall. When my relief came in, that screen is -- as I said sir, that screen is approximately right here.

Q Yes.

A He was right here. We -- when he came in, we talked about Taum Sauk. We talked about shutting the second pump down. We looked at everything.

Then we turned over our attention to the other unit. We were not pumping. We were not generating. We did not sit there and focus on the reservoir levels. We focused on the units that were operating and were generating and what he had to start the day and what he had to stop today and the abnormalities with the units that I had encountered overnight that he may have to deal with.

We talked about D rates on the units coming up for the day that he had to contend with. And our attention shifted, like I say, from the beginning of focusing this way to the other screens -- excuse me, sir -- for the remainder of our relief time.

Q Okay.

A I never saw the screen with the level falling off until I came back that night.

Q Okay. It is possible that -- that the screen was indicating a falling off but that you just were focusing on some other things during the shift change. Is that -- that possible?

A That is possible, sir.

Q Okay. Were you provided with the manual on Taum Sauk at some point in time, the manual for operating that?

A I don't know of a manual for operating Taum Sauk.

COMMISSIONER GAW: Okay. Would -- would someone provide the witness with a copy of Data Request No. 5? This is in evidence.

JUDGE DALE: Do you have --

COMMISSIONER GAW: We can just use mine for now.

MR. MILLS: I have the request but not the response. You want the response, I take it?

COMMISSIONER GAW: Judge, will you make sure that that does all go together? I want to make sure that I'm on the right -- does it -- Mr. Mills, does your say that it -- that the response is for -- for anything to do with the manual and operating processes? I want to make sure I'm on the right data request.

MR. MILLS: The one I've got for 5 is the organizational chart of the employees and organizational relationships.

JUDGE DALE: This is Data No. 5 here. But --

COMMISSIONER GAW: I think this is -- maybe it's all together here. But I don't know -- I want to make sure I'm on the right document. Mr. Byrne, what I'm looking at is a -- has -- assuming that -- there's an Exhibit 3 that's down at the bottom of this. Do you want to look at it? And it has TS, and then the pages after that are -- are in numerical order.

MR. BYRNE: Bates stamped.

COMMISSIONER GAW: But I don't know if I've got this right or not. I -- that's why I want to make sure that I'm not forgetting the document number.

JUDGE DALE: Let's go off the record for just a few minutes.

(Break in proceedings.)

JUDGE DALE: Okay. Back on the record.

COMMISSIONER GAW: Okay. Judge, did -- is there an exhibit number that we can attach to that document?

JUDGE DALE: The next number is 47.

COMMISSIONER GAW: 47.

Q (By Commissioner Gaw) And -- and this -- this appears to be a copy of some documents that are, I think, constituted an a operating manual. But I'm not positive. I just want to ask you -- first of all, do you have that in front of you, Mr. Bolding?

A Yes, sir.
Q Have you ever seen that before? And take some time, if you need it, just to scan through it,
A Excuse me. I'm through reviewing it.
Q Mr. Bolding, have you ever seen that document?
A Pieces, parts of it.
Q Okay. Have you ever seen the document all together in one piece?
A No, sir.
Q Okay. And the pieces that you have seen, where would you have seen them?
A In the Dispatcher's -- at the Dispatcher's desk. We had some of these graphs and levels as far as how much generation you can get out of certain levels. We had contact numbers for the plant for some of the people. I've seen the one line diagram of Taum Sauk before. I've seen parts of this.
Q Okay. And -- and when you were being trained, were you trained from any of those documents that you're mentioning that --
A Yes. The graphs did tell me, you know, how fast we can spill it or the rate it's spilling and the level and how to calculate on how long it's going to take to fill it, the graph showing when we're generating, how fast it pulls down and how long we can generate, hours, you

know, per -- depending on the different megawatt loads that we might be running on the unit.

Q Okay. Any -- any particular training on safety with the unit that you received?

A I'm not sure what you're looking for. We'd always talk about safety and always concerned about the safety.

Q I'm looking for specifics about what training you may have trained on safety in regard to the Taum Sauk unit.

A Well, if we see anything abnormal, contact Osage and Taum Sauk. And sometimes, you know, we had three-way conversations with Osage and Taum Sauk, all three of us on the line discussing issues. You know, I was trained in safety, any time there's anything abnormal to pursue it and find out what's going on.

Q And what constitutes abnormal?

A If I'd have seen those drops as these graphs showed --

Q Right.

A -- in the level while filling, that would have been abnormal to me.

Q Okay. Was there anything that you know of in the documents that you -- that you said that you saw and might have seen as part of your training that discussed

those level indicators on the graphs?

A No, sir. Not that I trained on.

Q Okay. Anything else that you recall in the training about particular abnormal things that you should watch for?

A Not that I can recall, sir.

Q How about with the other units that you were dispatching? Same kind of question.

A Well, we -- we -- one of the things in our training is -- at times, a unit will get into a situation where they're having problems. And the Shift Supervisor may call and want to discuss, Hey, I'm having a little bit of problem, it's impacting me this way. I need to drop a few megawatts.

You know, depending on where things are at the time, I might -- I might question him as to, well, you know, Hey, prices are going to fall off after a while or your generation demand is going to drop off after peak, you know, do you think we can hold where we are until after peak?

You know, we've -- we've had discussions like that all the time.

Q Okay.

A But the moment the plant says -- and a lot of times, I'll ask them, you know, is this a safety issue?

You know, this situation that you're experiencing that you're requesting this dereg., is it a safety concern? And if he says yes, that's the end of it right there.

Q I understand.

A We --

Q My -- you may have done -- done a good job of helping me forget my -- my question, too.

A You're welcome.

Q Thank me for that. What I'm looking for here is whether or not your -- you received any -- you received any training during the training phase as a Dispatcher about safety issues, things -- or things to watch out for that were abnormal that you should be looking for? I'm just asking you about your training?

A I don't recall any.

Q Okay. Now, you made a general statement about -- I'm not sure exactly what you said. Something about things -- things going wrong. I don't know what you were talking about. What -- can you -- if you recall generally what you were saying, can you say something more specific so I'll -- so I'll have an idea about what you were referring to?

A Yes, sir. We were talking about plant may call in turbine -- turbine vibration problems and want to change the load.

Q Okay.
A They may have a loss of a pulverizer, loss of a fan, loss of a feed pump. I mean, any type situations like that.
Q Okay. Now, you said if it's a safety issue and they say it's a safety issue, that's -- that's the end of the story. That was what you testified to a while ago, correct?
A Yes, sir.
Q Do you know of any written documents within Ameren that -- that define what constitutes a safety issue?
A In the situations I'm referring to, sir, they're judgment calls between the Shift Supervisor -- and it's his judgment that this is a safety issue or safety concern for his people --
Q Okay.
A -- his facility, his equipment. So he's basing that on his knowledge of the exact situation at the plant. If he says it's a safety concern or safety issue, I stop right there.
Q I understand. What I'm asking you is -- you were -- you were doing that job before, right?
A Yes, sir.
Q Did you -- was there any -- or were there any

documents that described and defined what constituted a safety issue?

A Thirty-five years of power plants, I've had safety beat at me so many times. It's drilled into your head. It's -- there cannot be documents that are going to define, declare operating situations as safety concerns.

You have to -- this is an instilled knowledge learned from -- by the Shift Supervisors over the years of doing their job. They know what situations are dangerous and whatnot.

There's the Ameren Corporate Safety Manual. You know, it defines safety -- you know, wearing your safety equipment, personal protective equipment, you know, how to lift, you how to work on equipment. They're trained in safety.

Q Those are issues that involve worker safety that you're describing.

A Yes, sir.

Q What I'm asking about has to do with whether or not there existed within Ameren what constitutes a safety issue such that a plant should be shut down immediately. Is there anything in writing?

A I don't recall seeing anything.

Q Okay. And I don't think that's inconsistent with what I've heard so far. It's -- this isn't -- this

isn't a new question just for you, Mr. Bolding. But I am -- I am trying to understand how that's -- how that's handled.

In your training as a Shift Supervisor, did -- I assume you had someone who you came in at some point in time, but I -- I didn't track back far enough to know whether that was -- whether you moved up into that position or whether -- or whether you came on board in that position. You might help me out there.

A I came on board with Ameren as an Operations Supervisor.

Q Okay. And then moved into what?

A Then I moved plants to Rush Island as a Shift Supervisor.

Q Okay. And that's a promotion?

A Yes, sir.

Q Okay. In those two positions, when you received your training, you said safety was drilled into your head, if I recall.

A Yes, sir.

Q Be more specific for me. Where were the documents that existed that -- that you were -- that you were instructed off of? If they existed. And if they didn't, I understand. You may have already kind of answered that. But were there documents that had written

protocols breaking down different things in regard to safety matters with different plants?

A The -- I do not recall seeing documents.

Q Okay.

A Safety concerns for the type of issues you're looking for.

Q Okay.

A Okay?

Q The training that you -- that you got from -- from person -- from people who were trying to train you for your job, was there a specific individual or individuals -- were there individuals -- I'm back at the plants now -- that were -- would talk to you about how -- how you should handle the plant and how -- how it should be run? Just give me a sense of that.

A Okay. The Shift Supervisor's direct supervisor is the Production Superintendent of the facilities.

Q Okay.

A In a lot of cases, there's -- there's policies of how to handle certain situations.

Q Okay.

A Not all of them, but -- but some. You know, if you get to a certain point, you need to do this, procedures to follow.

Q Right.

A But not that covers every facet of safety that's going to come up on the units during shift.

Q Okay.

A Just guidelines.

Q Okay.

A There's -- there's books of those. I've seen them at each and every plant I've ever been at.

Q All right. Does the -- does the exhibit that has -- that you were referring to earlier that you said you'd seen some portions of before, does that look anything like what you're describing, or is it something different than that?

A What I'm seeing here appears to me to be the Osage operators operating procedure for the Taum Sauk unit.

Q Okay. So is that something different than what you're describing about --

A Yes, sir.

Q -- these other plants?

A Yes, sir. This is -- appears to be kind of a standard operating procedure.

Q Okay.

A This is how you start it. This is how you stop it. This is what you monitor. This is what you're looking for.

Q Okay.
A This is what you do if this situation comes up kind of thing.
Q Right. So there would be something different than what you're talking about at these plants. And -- and you don't know whether one existed for Taum Sauk?
A I'd never seen this before for Taum Sauk.
Q All right. Okay. Got that. And that's the one that you've got in front of you, correct?
A That's correct. I've never seen their operating procedures before.
Q What about -- what about the -- the manuals -- manuals may be a bad word -- the documents that you were referring to in other plants that you had seen before that are not like what you're talking about in front of you there as an operating manual? Do you know whether anything like that existed for Taum Sauk?
A I haven't been to Taum Sauk, so I don't know.
Q And I -- I figured that would be your answer. What about the plants that you have been to?
A Yes. We have operating procedures.
Q I want to -- I'm moving to this other arena with you, and I apologize. I'm -- you were describing some things that the plant would be doing on safety matters being written down. What did you call that? What would

your name for that be?

A It would be your -- your operating procedures. Some places, I've seen had abnormal operating procedures. When you get into abnormal situations, it's guidelines, procedures what to do for abnormal situations.

Q Okay.

A How to handle normal start-up, shutdown.

Q All right.

A How to operate the equipment, instructions on equipment operation.

Q Do those -- does every plant have one of those? Or do you know?

A No, sir. Every plant does not have those. What -- excuse me. Are you referring -- my 35 years of power plant? Or are we talking about Ameren?

Q You tell me what you were talking about.

A I apologize. When you said do I always see that -- the two Ameren facilities that I have worked in, I've seen pretty darn good operating procedures. I've only worked in two of them, so I can't comment on the others. But -- but Rush Island, I know, was just outstanding procedures.

Q Did they have specifics in regard to if certain events occurred, the plant must be shut down?

A You know, certain -- you're make it too broad of

a statement, you know. There's -- there's times when things are going to come up that that's the only thing you can do is -- is shut the unit down.

Q Okay.

A Most of the time, it's a -- it's a component malfunction that you've got to operate around. It's -- it's not crippling to take the unit down. But it's enough to give you some headaches, and you have to operate a little different due to this abnormality that happened to you, but not necessarily shut it down.

Q Okay.

A You're -- in my opinion, you're just asking too big of -- it's just too big of a hole you're asking me to fill with a yes or no question.

Q Okay. When --

A There are certain situations, the procedures tell you, you know, when this happens, you need to do this, you need to do this. In some cases, you have no choice but to take a component off or take a unit off.

Q I don't mean to stop you.

A Okay. As sophisticated as the units are today, there's so many automatic shutdowns that it's totally out of the operator's hands. Certain situation happens, bam, it shuts itself down.

Q Okay.

A You don't have a choice.

Q Okay. Has that -- has that been the case as newer plants have come on, there have been more automated shutdowns?

A Yes, sir.

Q Okay. But what I'm asking has to do with these written protocols and whether or not they're -- and I don't -- I'm -- I'm only asking this territory again because I want to make sure I'm following you after this last dialogue we've had.

If you -- if you're looking at whether or not there are certain things that, if they occur, the plant must be shut down, would there be written protocols for that for those plants?

A I have seen that. Yes.

Q Okay. Which plants?

A Oh, come on. I've worked at so many. It's -- there was some at Rush. There was some -- some operating procedures if certain situations happened we had to drop load and cut back and maybe take one of the units off. Once again, I think you're asking me to fill a large hole with a -- with a very small rock.

Q Would it be fair to say that -- that there is a line between a must shut-down and an area -- let me -- let me rephrase that. Is there a difference between something

that constitutes you must shut it down and something where, this has got to be fixed, but it -- and we -- we have perhaps some time it do so we can schedule around some -- some of the economic or financial matters that -- that we have to deal with that you, I think, were describing a earlier?

A Would you rephrase that? What are you looking for exactly? I'm sorry.

Q Is there a -- is there a list for each plant that specifically says X occurs or X, Y, Z, any of these occur, and you must shut this plant down?

A I don't recall seeing a list like you're looking for. No, sir.

Q Okay. And then there is a judgment call, would you agree, in regard to whether or not a matter is in the category of a must shut down or a, We need to fix this, but it's not necessary that we shut the plant down immediately. It just needs to be done fairly quickly?

A Are you asking if that's a judgment call?

Q Yes.

A It's made by -- you get into those situations, and it's not just made by myself or the Shift Supervisor.

Q Okay.

A Unless it's something that's just so drastic -- dramatic, they rupture a tube and say, Hey, man, we've

blown a tube. We can't stay on.

Q Yes.

A What's to discuss?

Q Yeah.

A They can't stay on. Or blew the fire out in the boiler and the boiler tripped. Well, they're down. When we get into those situations, discussions with the Shift Supervisor brings in, sometimes the Production Superintendent brings in -- you know, they'll call Engineering at home, bring them in to come look at this situation, you know, help us determine can we run like this? Do we need to shut down? What's the severity of it? Is it a safety issue?

Like I said, if it's a safety issue, it's -- there's no discussion anymore. We have to do what we have to do right there. If that means bring it down, we'll bring it down.

Q But you've already testified that there's no definition of what constitutes a safety issue that's in writing.

A That's right.

COMMISSIONER GAW: Okay. I think that's all I have, Mr. Bolding. Thank you very much.

MR. BOLDING: Okay, sir.

JUDGE DALE: Do you have much?

MR. BYRNE: No. I do have some, though. Ten -- ten minutes, fifteen minutes.

JUDGE DALE: Let's go ahead and do that, then, before we break for lunch.

MR. BYRNE: Okay.

COMMISSIONER CLAYTON: I have no questions, Judge.

JUDGE DALE: I'm sorry. That's -- I was wondering about that.

MR. MILLS: Your Honor, before we go ahead, can I ask a question about procedure? Is there an opportunity to follow up from attorneys after questions from the Bench?

JUDGE DALE: No.

MR. MILLS: Okay.

CROSS-EXAMINATION

BY MR. BYRNE:

Q Real quick, just a couple of clarifications, Mr. Bolding. Earlier when Mr. Mills was asking you some questions about the settling at the end of the pump-up, do you remember that where it was the -- the -- before the breach you pumped it up to, I think, .9?

A Yes, sir.

Q And then it settled down to .6?

A Yes, sir.

Q And you said those were tenths of an inch. But aren't those, in fact, tenths of a feet -- tenths of a foot that we were talking about?

A Yes, sir. Tenths of a foot.

Q Mr. Schaefer was asking you some questions about receiving the call on September 25th about the overtopping. Do you recall those questions?

A Yes, sir.

Q And -- and just to clarify, did you receive that call on September 25th yourself?

A I -- initially, when I gave my first interview with the Highway Patrol, I was thinking I received that call. I went backwards and listened to the -- the recorded call. And the Power Supply Supervisor received that call. And I clarified that with the Highway Patrol during the second interview.

Q Okay. So you never -- you heard what you heard from the Power Supply Supervisor?

A Yes, sir.

Q Okay. Baking timer. Mr. Schaefer was asking you about your baking timer. What did you use the baking timer for?

A The baking timer was -- I'd set it like 20 minutes before I was going to shut down a Taum Sauk or start a Taum Sauk so that I'd have time -- that was my key

that I needed to put my offsets in with MISO.

Q So -- so did you ever use the baking timer to tell you to shut off the pumping?

A No, sir.

Q It was -- it was only used to tell you to notify MISO?

A Absolutely.

Q Okay. In response to questions at the beginning of Commissioner Gaw's questioning, I think you -- he was asking you what units -- what specific units you'd dispatch now that you're with AEM. And I think you said you dispatch the four units at Meramec? Is that correct or not?

A No, sir. It's Maridocia.

Q Meramec's a UE plant, right?

A Yes, sir.

Q When you worked for UE, did you do any trading at all?

A No, sir.

Q Only just dispatching?

A Only dispatching.

Q Okay. And you had talked, again, in response to questions from Commissioner Gaw about how, at least right now, you're by yourself doing a job at AEM?

A Yes, sir.

Q Did -- have you done any trading while you're by yourself?

A No, sir. No deals at all.

Q You were -- you were focused only on dispatching?

A That's all I've had time for so far.

Q Okay. You hit some questions about NERC training, I think, from Commissioner Gaw. Can you -- how -- can you tell me, how much training did you have from -- for the NERC test?

A I spent three weeks studying for that myself and -- I think it was four of us studying for the NERC exam.

Q And then how long was the test?

A The test was about -- took about three, three and a half hours.

Q And are there different levels of NERC certification?

A Yes, sir, there are.

Q And what level are you certified in?

A Liability coordinator, which is the highest NERC certification.

Q Okay. So you could have -- other people take less training and a shorter test and get certified at a lower level?

A Yes, sir.

Q I think in response to one of Commissioner Gaw's questions, you -- you said if you had seen a jagged line on the graph, you would have talked to the Dispatcher at Osage. Do you remember that question and answer?

A Yes, sir.

Q And I guess my question is, would you have also spoken to the plant about that if you had noticed a jagged line?

A My contact is Osage. A lot of times there's no one at Taum Sauk.

Q Okay.

A My -- my first response when there's something with Os -- with Taum Sauk, excuse me -- is to -- to notify the Osage operator. He's the person that I deal with to start and stop that, so --

Q Okay. Also, in response to Commissioner Gaw's question, you said you didn't realize the Taum Sauk breach had occurred until you came to work the next evening. I assume you were asleep a lot of the time. Is that why you didn't hear on the news?

A That's why.

Q Commissioner Gaw also asked you about training for safe -- around safety issues when you were in your Dispatcher position at UE. And I guess my question is -- and your testimony was you had hands-on training from

another -- from an experienced Dispatcher; is that right?

A Yes.

Q And to the extent that any safety issues arose, I guess would you have hands-on training with those issues as you went; is that correct?

A Yes.

MR. BYRNE: That's all I have. Thank you very much, Mr. Bolding.

JUDGE DALE: Staff, would you like to offer --

MR. BYRNE: Your Honor, could I ask that the -- that the last exhibit that Commissioner Gaw marked -- could we mark that as a proprietary exhibit? The -- it's the operating manual?

And I -- you know, it was -- it was marked proprietary in previous investigation. And if the whole thing is going to be put in, which is okay, I'd just like it to be marked proprietary.

JUDGE DALE: Then we'll change the number and have Exhibit 47 to 47-P and mark it as such. Would you like to offer it?

MR. BYRNE: No, thank you. But I wanted to --

JUDGE DALE: I'm actually talking to Mr. Baker.

MR. BAKER: Yes.

JUDGE DALE: Are there any objections? Then Exhibit 47-P will be admitted into evidence.

(Exhibit No. 47-P was offered and admitted into evidence.)

JUDGE DALE: With that, we'll take a lunch break and be back here at 1:30, please.

(Break in proceedings.)

JUDGE DALE: Okay. It's 1:30. Let me start recording. Okay. Back on the record. We are ready for your next witness, Mr. Reed.

MR. REED: Yes, Judge. Thank you. Keith Mentel, please.

JUDGE DALE: Mr. Mentel, would you please raise your right hand?

KEITH MENTEL,

being first duly sworn to testify the truth, the whole truth, and nothing but the truth, testified as follows:

DIRECT EXAMINATION

BY MR. REED:

JUDGE DALE: Thank you. Please be seated. You may inquire.

MR. REED: Thank you, Judge.

Q (By Mr. Reed) Mr. Mentel, state your name and spell it for us, please.

A Keith, K-e-i-t-h, Mentel, M-e-n-t-e-l.

Q Thank you. Do you still work for Ameren?

A No.

Q You're retired now?
A Yes.
Q When did you retire?
A August 1st of this year.
Q While you were employed for Ameren, that was AmerenUE, correct?
A Yes.
Q For how long?
A Approximately 37 years.
Q And all that time with AmerenUE?
A Union Electric, then AmerenUE, yes.
Q All right. Thirty-seven years. When you retired August of this year, what position did you hold?
A Hydro Plant Technician.
Q Tell us how long you were a Hydro Plant Technician.
A They changed it, and we were an HPO at first, Hydro Plant Operator. Pretty much the same job. Went to a technician's job. I was the Hydro Plant Operator or Technician for approximately 15 years.
Q All right. As a Hydro Plant Technician, tell us what you did day-to-day.
A Pretty well the running of the power plant.
Q Meaning, the Bagnell Dam facility?
A Bagnell, Kiakuck and Taum Sauk.

Q All right. All three. Those are hydro plants, correct?

A Correct.

Q And you were responsible for operating, in some fashion, all three?

A Yes.

Q Tell us what your responsibilities were with Bagnell, specifically.

A Day-to-day running of generating on and off, whatever the Power Dispatch wanted to. Any technical work that had to be done, any workman's protection that had to be wrote. Pretty well the complete running of the damn on a day-to-day basis.

Q And what about Taum Sauk? What were your responsibilities?

A Monitoring and also putting units on, taking units off. Generating and pumping.

Q As a -- had you been working with Taum Sauk, then, for 15 years?

A Correct.

Q What kind of training did you have to become a Hydro Plant Technician?

A At first, we were Hydro Plant Operators, which was just an operational phase. It takes a long time on-the-job training and some formal training. To become a

Hydro Plant Tech, we also have electrical training and general maintenance training. Probably 800 hours of electrical and 800 hours of general maintenance training, plus a lot of additional operator training.

Q We heard earlier -- some people we've talked to before, we heard about some operating manuals for various facilities, for instance, for the Bagnell facility or at the Bagnell facility, which is where you were located, correct?

A Yes.

Q Physically? Physically? There were some operating manuals. Are you familiar with those?

A Yes.

Q Are there -- are there a set for each of the three hydro plants?

A Yes.

Q And the Taum Sauk operating manual was described as, I think, one volume; is that right?

A Yes.

Q And what about for the Bagnell facility?

A There was several volumes for Bagnell.

Q As part of your training, did you work with those operating manuals for the hydro plants?

A At time to time, yes.

Q In other words, for the Taum Sauk facility, did

you need to become familiar with everything that was in that operating manual for Taum Sauk?

A Yes.

Q One witness told us that there was -- oh, it's probably been back in the fall of 2005, there was some kind of a training course at the Taum Sauk facility that took about a week to get through. Did you go through that back in the fall of 2005?

A No.

Q Have you ever been to the Taum Sauk facility before?

A Yes.

Q How many times?

A Twice.

Q And tell us about those two occasions. What were -- what was it for?

A I was a tourist one time. And then right after I became an HBT or HMO, at that time, they sent me down, I believe, for one day to familiarize myself with the plant.

Q Other than those two one-day visits, you haven't gone through any training course at Taum Sauk?

A No.

Q What about -- was there any formal sit-down classroom training for -- in order to operate the Taum Sauk facility?

A Not formal.
Q How did you learn how to operate Taum Sauk?
A On-the-job training and being an operator for years and, also, through the manual.
Q At the -- can you describe -- at the Bagnell facility where you would be located, can you describe for us your -- your immediate environment, like where you would be sitting? What's in that space that you occupy from day-to-day?
A We sit in front of a -- approximately nine computer screens and computers and different screens for all three power plants. It's -- would be the control room. It's an air-conditioned facility. We sit at a desk in front of all these consoles.
Q Nine screens, I think you said?
A I believe so.
Q How many are dedicated specifically or exclusively to Taum Sauk?
A At least two. Sometimes three if we need them.
Q What kind of read-out or information do you have on this -- on the screens for Taum Sauk?
A We can just about get any information we need to on -- on the units.
Q What do you mean by the units?
A One and two units at Taum Sauk, the generators.

Q Okay. The generator. You can get information on the generators. What else can you get information about?

A The upper and lower pools, tail water pool, any -- any information we would need to operate, we can ascertain from those screens.

Q So for the -- for -- let's take the upper reservoir, for instance. What kind of information can you get from the screens on the upper reservoir?

A We can get the upper reservoir level down to a tenth at any time.

Q Would that be in elevation?

A Yes.

Q Okay. What else for the upper reservoir?

A We have some high alarms, high-high alarms, just general knowledge. Basically, that's -- that's what we'd be looking at.

Q What about total volume?

A Yes. We'd have total volume access.

Q Now, which -- what kind of information did you generally work with day-to-day at -- for the Taum Sauk facility? What was important to you, in other words?

A The upper elevation and the lower elevation.

Q What do you mean by lower elevation?

A That would be the lower reservoir elevation.

Q Okay. The -- is the water pumped from the lower to the upper?

A Correct.

Q So, I guess, at any given time the lower reservoir is dropping while the upper is increasing, correct?

A Yes.

Q Over the 15 years that you've been working with the Taum Sauk -- Taum Sauk facility, did you -- were you familiar with, I guess, the correlations as the lower reservoir was dropping and the upper was filling? I mean, did you have a pretty good feel for where the numbers should be as they were changing?

A Yes.

MR. REED: I have an exhibit I'd like to mark, Judge. I think it will be 48.

A Yes.

MR. REED: There should be six here.

Q (By Mr. Reed) Mr. Mentel, I've handed you what's been marked as Exhibit No. 48. It appears to be some notes of an interview with Keith Mentel. Have you seen this document before today?

A Yes.

Q Have you had a chance to go -- to look through it before today?

A Yes.
Q Can we work through that document, Mr. Mentel, and tell me if you see anything that you believe is inaccurate in there?
A Yes.
Q Okay. How about the first paragraph?
A I believe that's correct.
Q Okay. The second? And you can see in the copy I gave you, there is some information there that's edited out, so --
A Uh-huh. That's correct.
Q All right. The third paragraph?
A Paragraph 3, lines 1 and 2.
Q Okay.
A Change two people were always at the Osage power plant. Two people were normally assigned to the Osage power plant. But on the off shift, weekends and holidays, the second operator position was not always filled if one of the operators was ill or on vacation.
Q Okay. So that's quite a bit that you would add?
A Yes.
Q All right. Okay. Anything else in paragraph 3?
A Yes.
Q Go ahead.
A Paragraph 3, lines 12 and 14.

Q Okay. Let me count. All right.
A Mr. Mentel stated he was not sure which pump went to auto stop, but believed it to be No. 1 pump. I'd like to change that to after reviewing his notes and the logs from the date in question, Mr. Mentel knows that the No. 2 pump went to auto stop.
Q Okay. At the time, you were interviewed, you weren't sure?
A Correct.
Q But since then, you've gone back and you've confirmed that it was No. 2, correct?
A Correct.
Q All right. What else in paragraph 3?
A Lines 15 to 17. I believe paragraph 3 based on the change above, presumably No. 2 and No. 2 on these lines should be changed to No. 1.
Q I see. All right. The No. 2 should be a No. 1?
A Yes.
Q All right. Okay. How about paragraph 4?
A There is some clarification on that.
Q Go ahead.
A I don't have this line for line. It was calling procedure that morning.
Q Tell us where to look for that.
A Let me see.

Q Do you want to -- do you want to just explain, I guess?

A That would be fine.

Q I guess as opposed to changing any of the language in there, do you want to further explain how it's done?

A Yes.

Q Okay. That's fine.

A That morning, I had called the -- when I noticed there was a problem with the reservoir reading, my permissives -- generating permissives that morning, I called the Power Dispatch office, notified them of this problem. Also, at that time, I verified their readings. They have a load dispatch screen that they can check. Their readings were the same as mine.

I then called Rick Cooper at Taum Sauk, and I read all the readings that I had there at the plant. He asked me what the upper was reading, what the lower reservoir was reading. And I also noted that at the time that the tail water had come up somewhat.

Right after that, I called the Power Dispatcher back, told him that Rick had been notified and was on his way to the power plant.

Q Okay. Thank you, Mr. Mentel. What -- what do we mean by tail water?

A It's the water that is directly -- leaves the generator. As it -- as it generates, it's -- it's the immediate water discharge.

Q Where were -- where is it measured right after the generators, I guess?

A Right after the gen -- right after the generator.

Q Okay. Can we look at paragraph 5 now?

A Yes. Yes. Paragraph 5, lines 11 and 12, But was aware of when it was placed there should be changed, But he was unaware of the one that was placed there.

Q Okay. That will work. That relates to the high and the high-high probes, I see. Okay. Do you know who placed the note there?

A No.

Q Okay. Is that it?

A Yes.

Q All right. Thank you. Now, with regard to the report itself, I just wanted to ask you a few questions. The first pump that went off, I think you said, was No. 2?

A Correct.

Q And it -- it was in auto shut-off?

A Correct.

Q But then you were called by the Power Dispatch who told you to shut off No. 1, correct?

A Correct.

Q Now, it -- normally, do both of the pumps shut off automatically?

A Yes.

Q Is it -- is it unusual to have the Power Dispatcher call to ask you to shut off one or more pumps?

A No.

Q Tell us the -- the type -- the -- the times that that happens. What's usually the occasion for -- for getting a call to turn off a pump?

A Sometimes they have loading problems on the system, and they don't want to use the -- that much electricity that time for pump-back is one -- one reason they would do that.

Q All right. Can you think of any others?

A No. Normally, it would be a loading problem or they'd just decide that they need it off for that -- for that reason.

Q Okay. Do you remember -- other than the loading problems in this specific instance, do you remember any other occasions where the Power Dispatcher called and said, Turn off Pump 1 or turn off Pump 2?

A Yes.

Q Tell us about that.

A It happened quite a bit. I mean, they would

call and -- and they had a short window, possibly, to pump.

Q Okay.

A And we would pump for maybe two or three hour, and they would -- they would direct that.

Q The -- the way Taum Sauk operated when it was pumping back, if it reached a certain level, it would shut off automatically, correct?

A Correct.

Q You -- in other words, you -- would you have to monitor the -- the level gauges, the level on your screen to decide when to shut the pumps off?

A We would always monitor. I was monitoring constantly that morning.

Q Did you ever have an occasion where the pumps kept running even though the elevation was above the -- the elevation it was supposed to shut off?

A Yes.

Q Tell us about that event.

A Normally, I -- particularly -- I can't speak for the other operators. Sometimes that's not an exact reading. If that first pump was to come off at, say, 1592, sometimes it will go two or three-tenths over. Sometimes I'd recommend shutting it down instead of waiting.

I'd call the Power Dispatcher and say, It seems a couple of tenths over. If it's all right with you, let's get it down.

Q Okay. So would there ever be an occasion where you're one or two-tenths over -- where the auto stop should -- should set in, but the Power Dispatcher called you to say, Turn it off, that's plenty of water?

A I think so. Yes.

Q Can you think specifically of an instance that happened?

A No.

Q All right. When you were sitting with the screens in front of you and you have the elevation at Taum Sauk before you, is there any particular time during your shift that you'd pay closer attention to the levels than other times?

A Yes.

Q When is that?

A Normally, it's when it gets close to pump-up, on a pump-up cycle, when it gets close to our auto shutdowns for the pump cycle.

Q Is that the same time every day?

A No.

Q I guess you just monitor it as, you know, it's pumping back. You just continue to monitor over your

shift, correct?

A Continuous.

Q All right. Can -- can the Power Traders, the Power Dispatcher in -- in St. Louis turn the pumps off?

A I believe the Power Dispatcher can turn the pumps off. It's not normally done. If we would have a problem at Osage, I believe they could -- they could do that.

Q Do you ever remember an occasion where somebody in St. Louis turned the pumps off?

A No.

Q Do you remember an event in September 25th, 2005, where there was water -- there was wind blowing water off the walls at the Taum Sauk reservoir?

A Yes.

Q Are you familiar with that event?

A Somewhat.

Q Tell us what happened whenever you received information that the water was blowing over the walls.

A I -- they had told us -- or I had heard that they had a wind storm and a high wind and that it caused some of the water to come over the parapet wall.

Q Were you working at the time the reservoir was drained a couple of feet to prevent that water from going over the wall?

A No.
Q You weren't part of that?
A I was working. I wasn't -- I don't know how to say that. I was on shift, but not at that particular time when that took place.
Q Okay. All right. Who -- who handled, I guess, the phone calls, the -- that sort of thing that -- that day?
A Like I said earlier, when that particular -- I was not there that particular day.
Q Okay. You heard about it later?
A Yes.
Q Are you familiar with the usual operating level at Taum Sauk?
A Yes.
Q What was it when you worked there at Osage?
A At that time?
Q Yes.
A First pump would auto stop at 1592.
Q Okay.
A The second pop -- pump would auto stop at 1594.
Q And that was in the fall of 2005?
A Correct.
Q Had that changed from a previous level?
A Yes.

Q What was the previous level?
A I believe the first pump auto stopped at 1594. I believe the second pump auto stopped at 1596.
Q That would have been before -- are you familiar with -- with the -- the occasion for the change in the operating level in the fall of 2005?
A Would you rephrase that? I don't --
Q Do you know why the operating level was changed?
A I understood that it was because of the high winds and the overlapping.
Q So before the high winds and the overlapping, you think the operating level was 1596?
A Yes.
Q Was -- was there a period of time where the operating level before the fall of 2005 was less than 1596?
A Yes. In the winter. They used to pump up to 1589.
Q 1589 in the winter. And how high in the summer?
A I believe 1596.
Q In the 15 years you've been a Hydro Plant Technician and operating Taum Sauk, was there -- was there a period of time where the operating level in the summer was 1595 rather than 1596?
A I can't recall.

Q What does the operating manual tell us?
A I believe the operating manual until that time stated, I believe it was, 1594 first pump, 1596 second pump off in the summer. And I believe in the winter it was 1589.
Q If -- if -- I want -- I want to give you a hypothetical. Let's suppose that the operating level ten years ago was really 1595, and then, at some point, it changed to 1596 for the summer.
Who would make the change in the operating manual so that the operators could see what -- what level they were supposed to use?
A That would be supervision.
Q And who would -- who would your supervisor be?
A At that time, it was Tom Buhr.
Q Tom Burg?
A Tom Buhr.
Q Buhr?
A Yes.
Q Would you spell the last name for us?
A B-u-h-r.
Q How long had he been your supervisor?
A For several years.
Q Before 2005, correct?
A Correct.

Q Do you -- are you aware of the liner that was installed at Taum Sauk in 2004?

A Yes.

Q Was there any change in the operating level at the Taum Sauk reservoir from the pre-liner operating level to the post-liner operating level?

A I can't recall.

Q What about -- are you familiar with the new turbines that were installed at Taum Sauk back in 1999, I think it was?

A Yes.

Q Was there any change in operating level after those turbines were installed?

A Not that I know of.

Q Whenever the operating level was changed to 1594 in 2005, who told you, This is how we're going to do it from now on?

A We usually get a fax or it came from Tom Buhr. And I think it's -- it's hard written -- sometimes they'd get a fax from Taum Sauk. Usually, it comes from Tom Buhr, our supervisor. Gets posted.

Q Where is it posted?

A We usually post it directly by side -- beside the Taum Sauk operating screen.

Q And does it go in the operating manual?

A We don't put it in the operating manual as operators.

Q Who does that?

A That would be supervision.

Q Like Mr. Buhr, correct?

A Correct.

Q Are you familiar with the term "free board?"

A Somewhat. I don't quite understand. Free board, I would think, would be excess -- I don't really know.

Q Okay. Well, in the training that you had received or -- or in the operating manual for Taum Sauk, to you, was there -- was there anything you recall about how much free board should be on the parapet wall at Taum Sauk?

A I can't remember.

Q Okay. Whenever the operating level was changed to 1594, do you know -- know whether or not that meant that the level of water was raised only to 1594 feet, or did it mean something else to you?

A It meant that it was a true reading to me, that it was actually 1594.

Q At the time that the operating level was changed to 1594, did you hear any discussion about 1594 actually being full pool, in other words, all the way to the top of

the parapet wall?

A No.

Q What about since then?

A No.

Q All right. When you were operating Taum Sauk in the fall of 2005, did you believe 1594 was -- was -- I guess that it meant 1594, right? A true reading is what you said.

A Correct.

Q Were you aware of the probe problems at Taum Sauk back in the fall of 2005?

A No.

Q No? Nothing? You didn't know of any problems?

A No.

Q Did you know -- did you ask -- well, see, after the operating level was changed to 1594, did you -- was there any discussion with your supervisor about why that was done?

A I understood it was done because of the overlapping, because of the wind problem.

Q Who at -- who at Power Supply or Power Dispatch did you generally talk to on the phone?

A The Power Dispatcher.

Q Who was that?

A There were some different dispatchers at

different times. We didn't work the same schedules.

Q Can you remember any names?

A I believe Tom Prine (ph.) was one of them. I don't -- I don't know a lot of their names.

Q Did you discuss with any of them the operating level of 1594 and what that meant for power generation?

A No.

Q Were you aware of any resistance to lowering the operating level of the reservoir?

A I don't quite understand.

Q Did you hear anybody saying, We shouldn't drop the operating level to 1594 because we can -- we produce less power?

A No.

Q Were you -- were you ever aware of any requests to operate Taum Sauk beyond prudent operational limits?

A One time, we had a lower reservoir that was filling up, and I believe I had called and told them about it.

And I had called Taum Sauk. Mr. Fitzgerald was on. And he physically went down there and watched it. And I think we -- we maybe exceeded the level at that time only on the lower. But he was watching it so it wouldn't top.

Q If -- if you -- if you received a request to, I

guess, run excess water over the -- what do you call it? The spillway? Is that what happened?

A Correct.

Q If you received a request for that, how would you clear that so that the excess water could be released across the spillway?

A I would call the supervisor of the power plant.

Q Is this the only occasion you're aware of where a request was made to go beyond the operational limits in the operating manual?

A Yes.

Q Did you hear of any other instances?

A No.

Q Didn't hear anybody down at Bagnell facility talking about, Somebody wants me to do this or that and I shouldn't sure to do it?

A No.

MR. REED: That's all.

JUDGE DALE: Thank you. Mr. Mills?

MR. MILLS: Thank you.

CROSS-EXAMINATION

BY MR. MILLS:

Q Good afternoon, Mr. Mentel. My name is Lewis Mills. I represent the Office of Public Counsel in this proceeding. I just have a -- a handful of questions for

you.

On -- on your instrumentation at Bagnell, I think you testified that you generally devoted two screens to -- to Taum Sauk; is that correct?

A Correct.

Q And what was on each screen, generally?

A Generally, we had a level indicating screen on, and we had a generating screen on.

Q Okay. So one screen would show the level at both the upper and lower reservoirs; is that correct?

A Correct.

Q And the other screen would show in terms of generation what kind of information?

A Our permissive to generate, our starts and stops.

Q So would that be times?

A No. Just an ability to start and stop the generator from that screen.

Q Okay. So how -- how big a screen is that?

A They're approximately -- I believe 20 to 22 inches.

Q Okay. And describe for me what the permissives look like on the screen.

A The generating permissives are two little round, red balls.

Q So you basically are trying to click on one or click on the other?

A If we have those permissives, we can click on a Gen. start.

Q Okay. And I think you said you had the ability to show information on up to three screens for Taum Sauk; is that correct?

A Yes. I believe at that time, we did.

Q Okay. And what other kinds of information do you show?

A Not any extra information. Just if we needed an additional screen for any reason.

Q Okay. Could you show, for example, oil pressure at the turbines?

A I don't believe it went into that detail. But it showed all -- showed our temperatures, our megawatts, things like that. I don't remember the oil pressure.

Q And the turbines were where?

A At the generator.

Q Okay. Now, in terms of alarms, were there any alarms associated with the Taum Sauk facility that would go off at Bagnell?

A Yes.

Q What -- what alarms would go off?

A There were numerous alarms.

Q Vibration on the turbines? Would that generate an alarm?
A Yes.
Q The high probe, the high warrick probe in the upper reservoir, would that generate a lot?
A Yes.
Q The high-high probe, would that also generate an alarm?
A Yes.
Q How about the low probes? Either of those?
A Yes.
Q Okay. Now, are all of those alarms the same alarm? Does it sound the same to you in the control facility at Bagnell?
A Yes.
Q Okay. And is it just sort of a loud buzzer or something like that?
A There's three different systems. We know the sound for each one. So there would be a sound for Osage, a sound for Kiakuck and a sound for Taum Sauk.
Q Okay. But in any event, Taum Sauk would generate the same noise?
A Correct.
Q Okay. And just -- I named -- I named a few alarms. Are there a lot more alarms than the ones that

we've gone through already?

A Yes. I wouldn't even know right offhand -- I mean, I know them. But, I mean, until we get them -- until we look at them, I mean, there's numerous alarms.

Q And how often would the alarms go off from Taum Sauk?

A Not a lot.

Q Okay. Now, with respect to the -- to the low and the low-low warrick probes, were there problems within a few months after the -- after the probes were installed on your shifts that those would generate false trips?

A I'm a little confused at this -- the question.

Q Okay. The -- the low-low -- the low and the low-low probes were designed -- well, you tell me. Do you know what they were designed for?

A Yes. There was a sign for -- to tell you when the upper reservoir was low for any reason or that we couldn't generate that there was -- we were out of water.

Q So they were set below the normal draw-down level; is that correct?

A I believe right -- yeah. Right at it.

Q Okay. So if the -- the low -- is it your understanding that the low-low probe was the lowest of the two?

A Correct.

Q Okay. So if the low probe got out of the water, what would happen?
A I assume it would alarm.
Q That never -- that never happened?
A Not for the low side, no.
Q So you never heard an alarm from the low-low probe?
A No.
Q Or the low-low probe?
A No.
Q Would they also auto shut-off the pumps?
A Yes.
Q At the same time the alarm went off?
A Yes.
Q Okay. In your experience, that never happened?
A I need to clarify something.
Q Please.
A We're on the pump cycle, and we're looking at a low probe instead of a high probe.
Q No. We're on the Gen. cycle.
A Okay. I'm sorry.
Q On the Gen. cycle, I'm talking about the low probes. Did they ever false trip on the Gen. cycle?
A No.
Q Okay. Did they ever legitimately trip such that

you got an alarm from them and an automatic shut-off from them?

A The generators?

Q The low-low probes when you're in the generating cycle.

A No.

Q Okay. So in your experience, what -- over the -- well, the -- those probes were installed when?

A I don't know.

Q But there was a time when the entire system was based on relays rather than these probes; is that correct?

A Yes.

Q Okay.

A I mean, I think so.

Q Okay. And -- and -- are you aware that at the time the liner was installed that the instrumentation system was changed?

A Yes.

Q Okay. So from the -- from the time that the liner was installed until the reservoir breached, never, in your experience, did you ever get an alarm or an auto shut-off from either of the low or the low-low probes?

A No.

Q Do you know if on the opposite shift from when you weren't there, do you know whether that happened?

A It was never logged.
Q You've read all the logs?
A We -- we read the day before logs usually. I mean, we don't sit down and read all the logs, but we keep track of our logs.
Q Okay. Now, are you -- are you familiar with the set up of the low and the low-low probes and the high and the high-high probes as to whether they were -- they were at one point set in series and at one point set at parallel?
A No.
Q In your training as a Hydro Plant Operator or Hydro Plant Technician, do you need to learn how the instrumentation is set up and how it functions in order to be able to operate the plants?
A No.
Q Okay. So from -- from your perspective sitting in the control room at Bagnell, did you see a change in the data reported to you when the liner was installed and the instrumentation was changed?
A No.
Q So from your perspective, it all looked the same?
A Correct.
Q And the alarms were the same?

A Yes.

Q Okay. Were you aware of a discussion in the fall of 2005 about changing the software or changing the instrumentation package so that you would be seeing different screens?

A No.

Q What -- what is the software package that reports the information to you at Bagnell from Taum Sauk?

A I believe now it's Wonder Ware.

Q You said now it's Wonder Ware. Was it something else recently?

A No. It was recently Wonder Ware. I mean, that morning, it was two different screens, an LDS, Load Dispatch System, and, also, we were running Wonder Ware.

Q And how long have you been running Wonder Ware -- had you been running Wonder Ware?

A Several months.

Q So it was relatively new at the time of the breach?

A Yes.

Q All right. And -- and what -- from your standpoint of running the plant from Bagnell, what difference did it make when they changed to Wonder Ware?

A Just had a different look. It had the same information.

Q So you still had two graphs, two numbers, two buttons; is that correct?

A Correct.

Q Okay. And in what sense was it a different look?

A The formatting was just a little different on the screens. It had a gray background instead of black. A little extra information possibly on there. Not much. I think it was pretty much identical. It was just printed different?

Q Okay. What was the little extra information?

A There was just some upgrade -- I shouldn't even -- I don't know.

Q Okay. You cannot -- you don't recall exactly what information was different?

A No, I don't.

Q Okay. And do you know what drove the change to -- to move the system to Wonder Ware?

A No.

Q You weren't consulted before or after?

A No.

Q Were you trained on -- on how things would be different using Wonder Ware?

A Yes. We were trained on Wonder Ware.

Q And what did that training involve?

A I can't remember exactly, but we went through the training manual. It was a formal training.

Q Okay. Now, in terms of -- and I'm not sure I understand your answer. The -- the night that there was an overtopping in late September, I think your answer to Mr. Reed was you were on shift, but you weren't working? Is that -- is that what you told him?

A I wasn't working when that particular -- I wasn't working on that shift. So, basically, I was not present at the power plant.

Q Okay. So it was -- it happened during the shift opposite from when you were working?

A Correct.

Q Okay. And so that was -- what's a normal shift at Bagnell?

A Oh, seven to three, three to eleven, eleven to seven.

Q Okay. So that call would have come in on the -- the -- the seven to three shift; is that correct?

A The September?

Q Yes.

A I don't know.

Q Okay. What shift were you working then?

A I don't know.

Q Okay. When -- did you -- did you hear anything

about that incident when you came to work following it?

A Yes.

Q What did you hear, and what did you have to do in response?

A We just heard that they had a wind problem and that it had overtopped -- had blown some water off the top. That's all I've heard.

Q And at that point, were you told to not fill the reservoir so full?

A Not at that point that I know of.

Q Okay. So -- so after that incident, you were still operating -- routinely filling the reservoir to 1596?

A I don't know when it was changed. It could have been changed immediately. I don't know if I had some days off or not. They changed pretty quick. I don't know it was exactly on that shift.

Q Okay. But shortly after that, it was changed from 1594 to 1596?

A Correct.

Q Okay. Now, I believe you testified in response to Mr. -- to Mr. Reed's question that you don't recall the level to which you would normally fill before the liner, correct?

A Not exactly, no.

Q Okay. Do you recall whether it was higher or lower than the 1596 that you used after the liner?

A I believe the old level was -- I believe I stated earlier it was 1589 in the winter and I believe 1596 in the summer. And I believe that was before the liner, also.

Q And after the liner, was there any difference to the levels that you would operate to in summer and winter?

A I believe they went to 1596 in the winter, also.

Q They got rid of the summer differential once the liner was installed?

A As far as I can recall. Yes.

Q And do you recall why the level was lower in the winter?

A They used to tell us because of the freezing. They were worried about expansion on the upper parapet wall.

Q Okay. So they -- they -- they dropped the level of the water below the parapet wall in the middle of the wintertime?

A Yes. I believe it was very close to -- to that.

Q Okay. Now, as you're watching the -- either the glass or the -- the digital read-out of the water level on the upper reservoir from Bagnell, if you follow it to whatever level and then the pumps are shut off, does the

level fluctuate at all once it's set and you're not pumping either in or out?

A It takes a little time for the pumps to settle down after a stop. So you could gain slightly after a stop one or two-tenths.

Q So it would go up?

A After the initial stop. But it took several minutes for the generator actually to stop pumping.

Q Okay. And -- and once that settles out after a few minutes, does the level just stay the same for -- for hours?

A It was pretty steady. Yes.

Q How -- how big is a tenth of a foot in inches?

A Well, let me see. A twelfth would be an inch, so it would be a little over an inch.

Q 1.2 inches; is that correct?

A Yes.

Q That's not much of a ripple, is it?

A No.

Q So if your instrumentation reads down to a tenth of a foot, wouldn't you like to see it fluctuate if there's any kind of wave action or wind action at all?

A It did fluctuate a time or two, but not over a time or two.

Q So two-tenths would be not even quite 2 and a

half inches. Never fluctuated more than two-tenths?

A No. Not that I can remember.

Q But you would see it fluctuate up to two-tenths, correct?

A Correct.

Q Okay. Did it drop over time?

A Before the -- before the lining or after the lining?

Q Well, both. Before the lining?

A Yes.

Q Okay. And how much would it drop in that particular period of time?

A I can't recall.

Q Okay. How about after the liner?

A Pretty steady.

Q Okay. Much less of a drop?

A Correct.

Q Now, if, for example, you would routinely fill the upper reservoir, say, to -- say, to 1594, would the -- would every time you filled the upper reservoir to 1594, would the lower reservoir be at exactly the same level?

A Not all the time.

Q And why is that?

A Well, because there would could be a flood on the Black River which would put excess water in the lower.

Q So depending on the level of the Black River, the lower reservoir doesn't march in lock -- lock-step with the upper reservoir; is that correct?

A Correct.

Q Okay. Now, in terms of the call logs that you keep as a Hydro Plant Operator, do you log all the calls you get from Dispatchers?

A No.

Q Which ones do you log?

A We don't routinely log calls from the Dispatcher. We routinely log had -- let me rephrase that. We -- we log every start and stop.

Q Okay.

A So I guess we do log them from the Dispatcher. I didn't quite understand that.

Q Okay. So if you get a call from the Dispatcher that says, Go ahead and start up Taum Sauk two pumps, then you would log that?

A Yes. We would call -- we would put down the time that they requested it and the time the generator actually started generating.

Q Okay. And how -- how closely do you log the time? I mean, are you within a minute? Or does it -- have you got that accurate?

A I'd say within a minute or two.

Q Okay. So, for example, in your Highway Patrol interview, when you said at approximately 05:12 hours, the Power Dispatcher in St. Louis requested another pump to be shut off, that's very close to the actual time, within a minute or two?

A Yes.

Q Okay. Now, in terms of the way -- well, I'll ask this -- if you know, the way the instrumentation is set up. Is the instrumentation set up so that it shuts off either Pump 1 or Pump 2 first when you're filling? Is it always one and then the other?

A No. It can be changed.

Q Okay. Does it have to be manually changed, or is it random?

A No. It's manually changed.

Q Okay. And which one -- at the time of the breach, which one was set to -- to shut off first?

A No. 2.

Q And why is that as opposed to No. 1?

A No particular reason.

Q Was there a time before the breach that -- that Pump 1 was set to shut off first?

A Yes.

Q And when was that changed?

A I don't recall.

Q Okay. Were they changed regularly?
A At one time, they tried to keep hours the same on both pumps so we would change it.
Q Okay. So it's to try and balance the run time so you don't have one that runs an extra half an hour or hour a day and it accumulates; is that correct?
A Correct.
Q Now, in terms of the -- the morning of the breach when you got a call to -- to shut down the second pump, what was the level that you were reading when you got that call in the upper reservoir?
A I believe it was if 1593.7.
Q Okay. And is there -- is the screen at st. Louis always the same as the screen at Bagnell?
A I don't know that.
Q Are you aware of any discrepancies?
A No.
Q Is it your understanding that they should read the same?
A Yes.
Q Okay. So if Mr. Bolding testified that his screen said 1593.9 and yours said 1593.7, what would -- how would you account for that discrepancy?
A It could have been -- I don't know. I assume they read the same. Depends -- you know, I believe it was

around 1593.7.

Q So you --

A That was my understanding. I mean, that's what I put down that morning.

Q Okay. You're not -- you're not confident that you remember that correctly?

A No.

Q Okay. Regardless of when it was 1593.7 or 1593.9, have you ever gotten a call to -- to manually stop that close to the auto stop level?

A Yes.

Q And how often?

A Rare occasions.

Q Okay. How rare?

A I can't tell you. I wouldn't know that. I mean, it wasn't an every-day occurrence.

Q Would that show up in your -- in your logs?

A Yes.

Q And are those logs maintained for years at a time that you know of?

A As far as I know, yes. We date them and we keep them.

Q Okay. Now, the dispatcher's log in St. Louis is an electronic log. For your log, did you type that in electronically in the computer system, or did you enter it

manually on paper?

A On paper.

MR. MILLS: That's all the questions I have. Thank you.

JUDGE DALE: DNR?

MR. SCHAEFER: Thank you, Judge.

CROSS-EXAMINATION

BY MR. SCHAEFER:

Q Mr. Mentel, are you familiar that there are three pressure transducers in the upper reservoir that actually supply the information to the water level indicators that you're reading on your screen?

A No.

Q And is that because you don't have any understanding of what it is that provides that level information?

A Not mech -- not mechanically, no.

Q Okay. Were you ever told in approximately October of 2005 that the pressure transducers that actually worked to supply that information to your screen regarding water levels, that those were malfunctioning?

A No.

Q As you sit here today, do you now know that that was the case?

A Yes.

Q How did you find that out?
A I think it was discussed later.
Q And I don't want any conversations that you may have with an attorney, but, specifically, who did you discuss that with?
A Probably the other operators.
Q Okay. Did any of those other operators indicate to you that they knew that those pressure transducers were malfunctioning?
A No.
Q Now, you were the person, were you not, that actually flipped the switch, for lack of a better term, to turn the pumps on and off for the upper reservoir, correct?
A Yes. That morning.
Q Okay. Whenever you were on duty, that was the case, correct?
A Yes.
Q In doing your job, would it be important for you to know the devices that provide the information that you're relying on in determining what the water level is, would it be important for you to know doing your job that these devices were malfunctioning?
A I don't know how to answer that. No, it wouldn't have -- it wouldn't to me.

Q So it made no difference to you if the information you were seeing on the water level indicating gauges was accurate or not?

A No. Oh, no. I definitely want them to be accurate. But I wasn't aware of any malfunction, so --

Q Okay. And that wasn't my question. I understand that you testified you were not aware of the malfunction. My question was a little bit different.

My question was, would it be important for you to know that those devices were malfunctioning?

A I wouldn't have changed my operational procedure that morning.

Q And, again, that's not my question.

A Okay. I'm sorry.

Q My question to you is, in performing your job for Ameren -- and -- and let me step back a little bit. In doing your job, you had to look at the water level indication information, didn't you?

A Yes.

Q And was it important to you that that information was correct?

A Yes.

Q So would it have been important to you to know that the devices that provide that information were malfunctioning?

A Yes.
Q Why?
A I -- I don't know how to answer that question. My procedures wouldn't have changed that morning because I -- I understood that they were -- they were, in fact, true readings.
Q Okay. Let's say that the information that you had, for example, in the fall of 2005 was that the devices were not operating correctly and were off by a number of feet, but that number of feet was unknown.
Would that affect -- would that have affected how you operated the system?
A Yes.
Q How?
A I probably would -- I probably would have went to supervision and then stated that I would not operate under those conditions.
Q Are you also aware of the -- the safety shut-off devices that are on the upper reservoir?
A Yes.
Q And do you understand those to be warrick probes?
A Yes.
Q And you understand that there's a high and high-high probe?

A Yes.
Q Did you understand that up until December 14th of 2005? Let me restate the question. Did you know that before December 14, 2005?
A Yes.
Q What was your understanding of how those probes worked?
A My understanding was we'd get a high and a high-high and then a shut-down.
Q Okay. And would that actually result in an -- if one of those probes, the high or the high-high, was actually triggered, would that result in -- in an alarm that you would see on your monitor?
A Yes.
Q Before December 14th, 2005, were you aware that the high and the high-high probes were moved in such a manner that they were no longer effective or operative?
A No.
Q As you sit here today, do you know that to be the case?
A No.
Q You don't know that?
A No.
Q Let me ask you this: There's been a series of -- of reports that have been put out by various entities.

One of them was a report that was put out by Mr. Rizzo and his group. It's commonly referred to as the Rizzo report. Have you seen that report?

A No.

Q And how about -- FERC staff put out a report. Have you seen that report?

A No.

Q And there was a FERC Independent Panel that was put together that put out their own report. Have you ever seen that report?

A No.

Q Did you have an understanding of where in relation to the operating level for the upper reservoir in relation to that where those warrick probes were actually set so that they would trigger?

A The operating manual said 1597.

Q And I believe -- didn't you actually tell the Highway Patrol that there was a note taped to the console at the Osage plant where you worked that the high, high-high probe was set at 1596?

A I believe that was the high-high.

Q High-high. Excuse me.

A Oh, I'm -- I believe that was the high. The high-high was 1596.5, possibly.

Q So the high was 1596, and the high-high was

1596.5?

A As much as I can recollect.

Q Okay. Prior to December 14th, 2005, did you have any reason to believe that that was not the case?

A No.

Q In performing your functions as the -- as the guy turning the switch on and off, did you rely on that information?

A Yes.

Q And prior to December 14th, did anyone with Ameren or any entity of Ameren ever tell you that that was not the case?

A No.

Q Would it have been important to you in your job to know that the high and the high-high probe had been moved to a level where they would not trigger?

A Yes.

Q Why?

A Because that was the last and final auto shutdown.

Q Mr. Mentel, could you take a look at Exhibit 48? I think you still have it in front of you. I hope you do. That's -- that's your interview notes from the Highway Patrol. Do you have that with you?

A Yes.

Q I don't know if yours is the same as mine. Mine actually has three pages. The -- my first page ends with paragraph 4, which carries over onto the second page. Is that the case with yours?

A Yes.

Q Okay. If you go to that second page and you go about halfway down on that -- what's left of paragraph 4 there, there's a sentence that says, The skate alarm that used to be connected to the float went off. Do you see that?

A Yes.

Q Can you tell me -- what are you referring to there, that the skate alarm that used to be connected to the float went off?

A It came on the LDS screen, the Load Dispatch Screen. It was a -- I believe it was an alarm from the old skate before the liner was installed.

Q Okay. Let's step back a little bit. And I think you testified previously a little bit about this. Was there a separate control system that existed -- let me restate that.

Was there a different type of control system that existed before the liner was put in in 2004 as opposed to after 2004?

A I'm not quite sure I understand the question.

Q Okay. Are you aware that when they put the liner in in 2004, they actually put in a different type of control system? They put in the piezometers and the warrick probes?

A At -- at the line -- time the liner was installed? Is that what you're asking?

Q Yes.

A I believe I knew that they had got rid of the skate system and gone on to a different type.

Q What did you think the skating arm was?

A I thought it was possibly an alarm that they didn't take out of the LDS. Sometimes things like that might get overlooked. I don't know.

Q Okay. What do you mean an alarm that they didn't take out of the LDS?

A A possible alarm that wasn't changed, but it was only on the LDS screen. I didn't know why that particular alarm came in on that morning.

Q Okay. What did that alarm mean to you?

A It meant that the skate was low, that the upper -- in the upper reservoir on the LDS -- I believe -- I can't remember exactly what the alarm stated because we hadn't used that for a while.

It wasn't an alarm that came in at all. I mean, I -- it was just a -- another alarm that came in that

possibly showed me that we had problems.

Q Okay. But it -- first of all, what did you actually see on the screen that morning on the 14th in regard to that alarm? How did you know there was an alarm going off?

A We get an audible, and then we look at the screen to see what alarms came in.

Q Okay. So were you -- so that first came to your attention because you heard a sound?

A Yes.

Q Okay. And then that caused you to look at the screen, correct?

A Correct.

Q And -- and what was the information that you saw on the screen that you thought was related to the audible sound?

A I believe on that particular alarm, I -- I can't remember the exact nomenclature. It was something skate -- I'm going truthful. I can't remember the exact nomenclature.

Q Okay. And by nomenclature, you mean the words that you're actually seeing on the screen, correct?

A Exactly.

Q But you think the word "skate" was somewhere in there?

A I believe that to be true, yes.
Q Okay. Let me ask you this. When an alarm like that goes off, is there -- is there a way to go back into the system and actually see what you were seeing on the liner?
A I'm not too sure. That alarm probably stayed there. I'm not too sure on the load dispatch system if there is.
Q Okay. Now, when you saw this -- and I understand you can't remember exactly what it said. But what did that mean to you? Did you think there was too much water in the reservoir? Did you think there was too little water in the reservoir? What did that mean to you?
A That particular alarm came in after I knew that there was a -- a problem with the reading of the upper reservoir.
Q And how did -- how did you know that there was already a problem with the reading?
A My generate -- we lost generate permissives.
Q Okay. You talked a little bit about what permissives were. But, specifically, what was it that you were seeing or not seeing on that screen that caused you to conclude that you had lost generating permissives?
A First, you get an audible. Then there's two little round balls on a screen on each generator. They

have to be lit to let you know that you have Gen. permissives, that you have -- that you can go ahead and start that generator with that screen.

Q Okay. So if I understand correctly, you -- you first received an alarm on losing the permissive. And then you heard the alarm for something that was related to the skate; is that correct?

A Correct.

Q Okay. Now, when you heard the alarm on losing permissives, at that point, did you have an understanding if there was too much water in the reservoir or too little water in the reservoir?

A Yes.

Q And what was your understanding?

A That I had a low reading.

Q And did you, in fact, look at the level water indicators to see what the reading was?

A Yes.

Q And what was it telling you?

A I can't remember the exact. But it was low.

Q Okay. Is -- is that the first point that you realized from the water indicator level that there was too low of water in the reservoir?

A Yes.

Q Had you been following -- as you were pumping

the facility up, had you been following -- let me step back. Is there a graph that you looked at to actually watch the graph go up in a linear fashion as the water was filling the reservoir?

A I wasn't watching the graph that morning.

Q Okay. Was somebody else watching the graph that morning?

A No. I was watching the upper level indications.

Q I believe you testified that sometimes there are two people actually working in the Operations Center, and sometimes there's only one; is that correct?

A Correct.

Q On the morning of December 14th, 2005, when it failed, were there two people working, or was there just one?

A One.

Q And that was one was -- was you, correct?

A Correct.

Q Okay. When you're looking at your monitor and you're watching the reservoir fill up, can you watch the graph and watch the water level at the same time, or do you have to choose one or the other?

A We can watch them both at the same time.

Q Okay. So when you say that you weren't watching the graph, is it you just weren't paying attention to it,

or you didn't have it pulled up on the screen?

A It was pulled up. But it wasn't my main concern.

Q Okay. Were you watching the water level -- aside from the graph, were you watching the water level indicators numbers as the reservoir was going up?

A Yes.

Q Prior to getting the alarm that you did not have the permissive, generating permissive, did you see anything in the numbers that you were looking at that indicated to you there was a problem?

A No.

Q So when you received the alarm on the permissives, did you check the level numbers?

A Yes.

Q And at that point -- and I may have asked you this. Do you recall at that point what they read?

A I can't remember exactly what -- what the upper read. I know it was low.

Q That's right. It was lower than you expected it to be?

A Yes.

Q Is it possible that the skate alarm that you heard and then saw the information that that was actually attached to the low or the low-low probe?

A To be truthfully (sic), I don't know what it was attached to.

Q Okay. Prior to December 14th, 2005, were you aware that the top of the parapet wall around the upper reservoir was -- that -- that the top points of the wall were not level?

A No.

Q Would that have been important information to you to know?

A I don't -- I don't really know. Yes, I guess. But I -- I don't -- I don't think so. No.

Q Okay. If there was a disparity or a difference between where the gauges were that were providing you information and other parts of the wall which may have been much lower than that, that wouldn't have been important information to you?

A Yes, it would.

Q And why?

A Because then the upper probes possibly weren't at the right place.

Q When you got the call from the dispatcher on the morning of December 14th -- and I believe that was Mr. Bolding, correct, who was the Dispatcher at the time?

A I don't know that for sure.

Q Okay. But you did get a call from Dispatcher

that morning to manually shut off the last remaining pump prior to it going off automatically, correct?

A Correct.

Q Did that person tell you why they wanted you to manually shut that off?

A No.

Q Prior to December 14th, 2005, was there ever a time when you were filling up the upper reservoir when the information that you knew from water being pumped into the facility and the information you were getting on an actual water level readings that -- that those two things just didn't seem to go together?

A No.

Q I can't remember if you were asked this. You were asked some questions about the overtopping on September 25th. Other than September 25th, are you aware of any time that water came over the top of the parapet wall on the upper reservoir?

A No.

Q How often did you have communications with -- with the Taum Sauk either Manager or Superintendent?

A Sometimes, not at all. Only when we needed him, we'd call him.

Q Okay. And --

A Or if he had anything to fax us to tell us.

Q What would be the circumstances where you'd need to tell him something?

A Well, that morning, definitely.

Q Okay. Where you knew that something -- something big had happened?

A It was definitely something that I would immediately look into.

Q Other than that, what are some of the other things that would talk to the Plant Superintendent or Manager about? And I use those terms interchangeably because it's my understanding at some point there was a Manager at some point.

A Correct. If we had any problems with the generating, once we get the generator to start, if we had a problem with the sequence where the generator wasn't coming on right, taking longer than normal, something on the screen didn't look right as far as the generator or the pump was concerned.

Q Okay. Did that happen very often?

A No.

MR. SCHAEFER: I don't have any further questions, Judge.

JUDGE DALE: Thank you. Before we begin the questions from the Bench, let's take a ten-minute break. Off the record, please.

(Break in proceedings.)

JUDGE DALE: Let's go back on the record.

COMMISSIONER APPLING: Yeah. Still out to lunch.

JUDGE DALE: Commissioner Gaw isn't back yet, but Commissioner Appling says he just has a few questions, so we're going to let him go ahead and ask his questions.

CROSS-EXAMINATION

BY COMMISSIONER APPLING:

Q Keith, how are you doing?

A Fine.

Q Are you holding up?

A Yes.

Q Okay. A couple of questions. I don't -- usually, I do a lot of reading. This is your statement, the interview or whatever you want it call it from the Highway Patrol, the statement that you made to the Highway Patrol sometime ago when they -- when they talked to you.

Is there anything on this here that you're saying today that you're thinking is different from this piece of paper here from your questions from the Highway Patrol?

A Not after I made the changes, no.

Q The last question, the only question I'm going to ask you, but I just want you to kind of sit back in

your chair and think about it because there's one question and one question only.

But I want to tell you a little bitty one-minute story before I -- before I ask you the question. I was in combat and used to have incidents. And then for a little while after that, I would run that through my mind and try to determine if I lost men in the battle, just for my own clarification, mainly for the fact of not making the mistake again, if I could prevent it.

So my question to you, since you've had a chance to think about this, what, in your mind, caused this incident? Was it multiple? One thing? Was it A not talking to B? In your, in your own mind, how about helping me out, try to help me understand? What was the one thing in your mind that caused this incident?

A That's -- that's hard for me to come up with.

Q Was it a multiple --

A I think it was a multiple. I -- I don't know that for sure. Basically, I had false indication that morning. I didn't know I had false indication. If I wouldn't have had false indication, regardless of what happened, it would have never happened that morning.

Q Right.

A Because me, as eyes and operator, would have taken care of it long before it went any further. I have

mulled it over in my mind. I can't think of anything that I would have done different that morning.

Q I believe that. And I would like to also add one other thing. What -- in looking at all of this, what this incident is causing Ameren all the time, all the energy and everything, what do you take away from this incident that will be helpful to you -- you and Ameren in the future?

A I don't know about Ameren. I'm retired.

Q Well --

A What I'm going to take away from it is that -- that I'm sure glad that morning that we didn't hurt anybody.

Q Well, thank you for saying that because I -- I have said the same thing to the CEO of Ameren, that it's -- it's a miracle that -- that no one -- that this incident didn't cause any deaths.

But thank you very much for being here and appreciate your time. And happy hunting in retirement. Okay?

A Thank you.

JUDGE DALE: Commissioner Gaw?

COMMISSIONER GAW: Thank you.

CROSS-EXAMINATION

BY COMMISSIONER GAW:

Q Good afternoon, sir. Do you want to take a minute?

A I'm fine.

Q Well, I want to -- I want to make sure I got -- tell me how to pronounce your last name.

A Mentel. Mentel. Either one.

Q Which do you prefer?

A Mentel.

Q Mentel?

A Yeah.

Q Okay. All right. Well, have you got some -- some people that are in the family call it one thing and some people another?

A Yes.

Q That's -- that's -- that sounds familiar. My name just gets mispronounced. It doesn't -- and even by -- even by our family, so it doesn't make any difference.

So let me ask -- let me ask you, generally, I want to go through a little bit with you on just general processes, procedures that were in writing in the operator's manual. Do you -- you're familiar with that, I'm sure, right?

A Yes.

Q There was one kept down there in your all's offices at Bagnell?

A Correct.

COMMISSIONER GAW: Judge, did we still have that copy we were using earlier sitting somewhere over there?

JUDGE DALE: Should be.

COMMISSIONER GAW: There we go. Is that the whole thing or --

JUDGE DALE: It's both sections. We clipped them together.

Q (By Commissioner Gaw) Mr. Mentel, would you look at that and tell me if that looks like that operator's manual?

A Yes. I believe that's it.

Q All right. Now, is that usually kept in some sort of a binder? This is just a copy that I've got here that was supplied to us. But is that -- is that usually kept in a binder or what kind of a form?

A It's in a binder.

Q Okay. And -- and does it sit somewhere -- I've never been inside the operating room where you were. Is that a big room? Small room?

A Pretty big.

Q Okay.

A Not quite as big as this. Half as big as this.

Q Okay. And how many people are generally in it? Depends, I suppose, on what time of day?

A Yes. Correct.
Q Give me an idea.
A During the day watch, there could be several people in and out. On the off hours, three to eleven, eleven to seven, weekends, holidays, could be one, possibly two operators in there.
Q Okay. Where does this -- this room sit? Is it -- is it close to the dam? Or where is it?
A It's inside the dam.
Q Inside. Okay. At Bagnell, right?
A Correct.
Q What -- what do you all call that place?
A Control room.
Q And is it -- the control room at Bagnell or at Osage?
A We call it the Osage -- or Osage control room.
Q Osage control room. Okay. I -- I've been calling it different things, and I wasn't sure which was the right one according to your all's normal language.
Now, in this -- in this operating manual for Taum Sauk, I want to go through a few of the places in here that I -- that I read through and just mostly for clarification's sake.
And, unfortunately, you have the only copy that I have. And I've probably written on that one. The Judge

hopefully will straighten that out before we get done.

JUDGE DALE: We were hoping to find a clean copy, but haven't yet.

Q (By Commissioner Gaw) But on -- down at the bottom, there's a TS and then a -- a number on the pages, right?

A Correct.

Q Does that sound -- stand for Taum Sauk and then a page number in the operator's manual?

A Correct.

Q Okay. Look at 19 for me. And I hope I can find the place I was without my copy.

COMMISSIONER GAW: Judge, this would be a lot easier if I had my copy back.

Q (By Commissioner Gaw) Do you see anything on there that -- that -- on 19 that talks about auto stop could fail and keep pumping?

A Yes.

Q Okay. Tell me -- tell me what that's referring to.

A Do you want me to read it?

Q If you want to. That would probably be clearer.

A Never let upper pool pump over 1596. Auto pump could fail and keep on pumping.

Q Okay. And can you tell me generally -- first of

all, do you know when this particular page was last updated?

A No, I don't.

Q Some of these pages seem to have a date on them, and some of them don't. And this one, I don't see a -- a date on either. So do you know or have any idea whether or not this page was updated after the warrick probes were placed in -- in the late fall, early winter of '04?

A I wouldn't know.

Q Were you -- are you told when the manual is updated, generally?

A Yes.

Q Okay. Do you recall whether there were updates made to this manual? And I'm talking about while you were there, subsequent to the liner and the other improvements being done in '04.

A I don't remember.

Q Okay. Well, in your perception of what that sentence means that you just read -- and it sounds pretty clear. But there is an assumption there that you shouldn't just assume that those top probes are going to do a shut-off, correct?

A Correct.

Q All right. And -- and maybe for -- so I don't get away from this too far, there is a -- the concept that

-- that those -- those probes might fail, if it applied prior to the liner being inserted, you're talking about different probes than subsequent to the liner being put in. Can you describe what those probes were again prior to the liner?

A I understood that the warrick probes were approximately the same type probes after the liner.

Q As they were before?

A Correct.

Q Okay. Did you have any information on -- on where they were placed prior to the liner being installed?

A I believe so. I can't recall exactly when the -- when the last shut-off -- that was -- would be a both pump shut-off.

Q Okay.

A Exactly where they were set prior to that, I -- I can't recall right now.

Q And did those particular probes have an alarm system and a shut-off on them?

A I believe we had a high and a high-high alarm, and then the shut-off.

Q Okay. Did you ever see those go off?

A No.

Q Okay. Subsequent to the liner being installed, did you have those high or high-high probes ever go off?

A No.

Q Okay. Not while you were on shift anyway; is that -- is that what you were saying?

A Correct. Correct.

Q Okay. There are some references in here to a -- I think it's a Mr. Wallen in this operating manual from time to time.

A Yes.

Q Do you -- who is that?

A I believe he was the -- he was -- he was the Maintenance Supervisor at Taum Sauk.

Q Okay. Do you know when he left?

A I sure don't.

Q Okay. Would it have been -- who was Maintenance Supervisor when you left your position?

A When I left my position, I believe Rick Cooper was the only supervisor down there.

Q Okay. What about when -- just prior to the breach? Would that have been the same answer?

A That would be Jeff Scott.

Q Jeff Scott. Okay. All right. So do you know whether or not Jeff Scott's name was ever -- ever substituted for Mr. Wallen's in this operating manual?

A I don't believe.

Q Okay. On page 20, TS-20, there's some reference

to station alarm. And it says, If urgent station alarm, plant fire or plant flooding, alarm is received. Do you see that?

A I haven't yet. But I'll --

Q It's right at the very top. Are you on 20 or 21?

A Oh, wait a minute. I'm sorry. I'm on 21. This is back to back.

Q Yeah. I -- I did that, too, a while ago. If you look at the top of 20 --

A Yes. I see it.

Q Okay. Tell me what that -- what that station alarm is.

A Urgent station alarm would be something of a type priority alarm in the power plant.

Q Okay. When it says plant flooding, is that -- do you know what that's -- what that's referring to?

A Yes.

Q Tell me what that means.

A If there would be any flooding inside the power station itself.

Q Itself. Okay. Would a station alarm apply as a designation for the -- for the upper high or high-high warrick probes going off?

A I don't believe we'd get an urgent station

alarm. I believe we'd just get a high-high alarm.

Q Okay. And in that regard, on the high or high-high warrick probes going off, are you certain that there were alarms after the liner was in -- installed?

A I understood there were.

Q Who -- tell -- tell me why you had that understanding.

A I was never told anything different.

Q Was that the case prior to the liner being installed, that there were alarms?

A Yes.

Q Okay. And would it be fair to say -- I don't want to characterize this incorrectly, but you tell me if this is right or wrong or otherwise, that you assumed that when they put in the liner that the alarms in regard to how they operated would be the same?

A Correct.

Q Okay. So if that -- if that had not been the case, do you -- would it be your understanding that someone should have told you that?

A Yes.

Q Would that have been important to know?

A Yes.

Q Okay. And I -- this is probably a very basic question, but why would that have been important to you?

A Because that's our last defense.
Q Okay.
A Other than the operator being there physically taking the unit down.
Q Okay. And if the -- just in regard to your practice in watching these things, how much do you depend on those alarm systems as a -- as a safety net to what you're doing?
A Not as much as you might think.
Q Okay.
A Because we watch it -- we watch that pump continuously on pump-up.
Q Okay?
A And it would never -- if I would be at that desk, it would never get that high.
Q Okay. And, of course, your information that you have on your screen that you're referring to is entirely off of those pressure gauges, right?
A Correct.
Q Okay. And -- and that you have to make an assumption in regard to watching that that those numbers are correct?
A Yes.
Q If, for some reason, this was a malfunction in regard to that reading, how important would those alarms

then become on the warrick probes, the high and the high-high?

A More important.

Q Okay. Would it be important that -- that those alarms be audible?

A Yes.

Q Okay. You've mentioned -- you've talked about the LDS terminal before, and there's a reference to it on page 20. What -- what is that again?

A Load Dispatch System.

Q Okay. And just generally, what does that mean?

A It shows different screens. It shows that the load dispatch system and the Power Dispatcher can also look at that screen and they -- from downtown.

Q Okay. Now, that is -- is that on a different screen than your -- the information that indicates what the level of the reservoir is?

A It can be. There's also level indication on the LDS.

Q There is?

A Yes.

Q Does it come from the same information source? Do you know?

A I don't know.

Q Okay. Do the numbers always match on the two

screens?

A Not always. But always very close.

Q Okay. Do you know -- do you have any idea of why they wouldn't match?

A Possibly, the software or something. I don't know.

Q Did you observe them not matching prior to the installation of the liner?

A Yes.

Q Okay. And afterwards?

A At times. Very, very slight difference.

Q Okay. Did you have permissives in regard to the pump-up procedure as well as the generation procedure?

A At one time.

Q Just generally. I'm not talking about any particular time. Were there such things in regard to pumping up as there were on generation?

A Yes.

Q Okay. And did you ever see those permissives go off?

A Yes.

Q Okay. And do you know, generally, what might cause that to occur?

A It could be anything in the power plant, a switch that wasn't making up. They had lost a --

something, possibly, in the -- in the power plant itself that would cause that, that would state that it was not ready to generate.

Q Okay. What would your procedure be if that occurred?

A Normally, we'd observe it. If everything looked fine on the screen, we'd observe it for another ten minutes, and then we'd contact Taum Sauk power plant.

Q And then there would be a discussion about what the issue was or problem?

A Yes. Usually, we'd -- we would call the Power Dispatch downtown. Then I would also call Taum Sauk to let them know. And they would usually look into it immediately.

Q Okay. Did that occur during the time frame subsequent to the liner being installed?

A Yes.

Q Okay. Frequently? Infrequently?

A While I was on watch, a few times. Not real frequent.

Q Okay.

A I guess with the other guys on watch, it would be different. But just me, not -- not real frequent.

Q Okay. Were any of those accidents that you're aware of affiliated in any way with -- with matters that

now, looking back, you might say were -- were affiliated with the problems that ended up causing the breach?

A No.

Q Okay. I'm -- look on the -- 22 -- TS-22 page, if you would, on the subnote 3. I just need an explanation about what that means there. When you get to it, I'll ask you.

A 23?

Q Yes. There's -- there's a bolded area down there that talks about following the operating curves, and I just wanted -- wanted to know what that was.

A I've got a blank TS-23.

Q Oh, I'm sorry. 22. I read the wrong number.

A Oh, yes. I see it.

Q What -- do you know what that's referring to?

A That occurs to megabolt amps.

Q Right.

A And also generator AC amperage.

Q Yes. And it also makes a reference that this alarm does not identify which unit is high, right? You must look at the megawatt and -- is that megabars?

A Let me see what it says here. Correct.

Q Okay. Now, the -- what I wanted to ask you is whether or not you're aware of anything this document, this operating manual, that has some similar caution in

regard to the -- the level of the reservoir. And this has to do with the operation of the generating units, I think.

But in regard to the -- the level of the reservoir and ensuring that -- that there is not -- well, just -- just giving instruction in regard to -- to not relying on the alarms?

A I believe so.

Q Is that possible for you to find that for me very quickly? And if not, don't take the time right now. I'll give you a little bit of time later on, and you can point it out to me.

A I can -- I can tell you about what it said. I don't have it right here in front of me.

Q All right.

A I believe it -- if it reached 1596, we were to take the unit down --

Q Okay.

A -- and not rely on the -- the emergency shut-off.

Q Okay. Got it. If you find that while we're going through this, would you point it out to me?

A Yeah. I just seen it a minute ago here.

Q Did you? Look for it -- we can come back to that if you want to.

A It's the top of one of the pages. I can't find

it right now.

Q Sure. You can -- if you run across it in a little bit -- or I'll give you some time toward the end here, if you want. If you'd take a look at TS-26 for me, it's talking about LDS alarms.

A Okay. I've got 26.

Q Okay. First of all, what are those alarms that would fall into that category?

A I don't see LDS alarms right now.

Q On 26.

A Is it top or bottom or --

Q Oh, at the very top, it says LDS on my copy.

A Oh, I'm sorry. I didn't see it was under the staple.

Q Yeah.

A That would re -- refer to the load dispatch system alarms.

Q Okay. Does -- would any of that have anything to do at all with level alarm?

A Yeah. The old -- we operated off the load dispatch system prior to the Wonder Ware.

Q Okay. And subsequent to Wonder Ware -- let me see if I'm following this. Subsequent to Wonder Ware, you think that you had Wonder Ware giving you certain information, but, also, do you think has the old LDS, the

older LDS software was giving you information as well?

A On that morning.

Q Why don't you talk about that if you want to. And we can -- I'm really talking about the time frame subsequent to the liner being installed up to that point, but --

A I don't believe we were on the Wonder Ware system at the time. I believe we were strictly on the load dispatch system.

Q Clarify that for me. Why do you think that?

A Because the Wonder Ware was a new system. And I can't remember exactly when -- when it came into play.

Q You can't remember when you started -- when that system was implemented?

A Correct.

Q You think that might have occurred subsequent to the breach?

A Before the breach? Is that what -- I don't understand the question.

Q After the breach. Do you think that this was implemented after the breach?

A No. It was implemented before the breach.

Q Okay. What I'm trying to understand is whether or not there was a dual system going on in some time frame between the liner being installed and the breach

occurring?

A Yes.

Q Okay. And what makes you think that?

A Because I had two different screens. I had the LDS screen to operate with and the Wonder Ware, Load Dispatch System screen.

Q And I don't want to vary too far off of this, but I'm trying -- when you were talking earlier about that skate alarm, what you think might have been the skate going on, that was on the LDS screen, correct?

A Correct.

Q Is that part of the reason why you believed that that was attributable to the old skate system?

A I believe so.

Q Okay. Have you ever asked anybody whether or not that alarm or that skate system was still operational on the day of the breach?

A No.

Q Okay. I may come back to that in a little while. This -- when we're talking about this page 26 again -- there's some reference to if an acknowledged alarm which has not returned to normal, and in parentheses, below black line, closed parentheses, gets too low, you can view this alarm by -- and it has some -- some different provisions. Can you -- like scat exception

list and single station exception list, direct box, pick-up, pick station, Osage or Taum Sauk. What does that mean?

A That there's a possibility that if you deleted that alarm that you could go to the skate exception list, and it would be there.

Q Okay. Is that -- you said a possibility. Does that mean that it may not be there?

A Yes.

Q Okay. Why would you delete an alarm?

A We get a lot of alarms. We look at them, sea how important they are. If they're not important at that time, we know that -- we don't have to deal with them immediately. We delete them.

Q How do you know whether or not an alarm is -- is some alarm that should be deleted? Where do you get -- where do you learn which one should be and which one shouldn't be?

A Operator training.

Q In this operator's manual, does it give you that direction?

A Not per alarm, I don't believe.

Q Okay. When the liner was installed and the new Wonder Ware programs were implemented and the -- the alarm system is there, were you given any new training in regard

to those alarm systems?

A Yes. We went through some training on Wonder Ware.

Q Who did that?

A We have a training representative down at the dam.

Q Okay. So was it somebody from Bagnell that trained you?

A Correct.

Q Do you know who that was?

A I believe it was a combination between Tom Buhr and Ed Dobson.

Q Okay. Do you recall whether they gave you any additional training about the -- the particular level -- levels and warnings and shut-offs that -- that accompanied the changes in Tom talk?

A I can't recall if they went into that or not.

Q Okay.

A I assume. Most of them were run parallel with the Load Dispatch System, and they were pretty close to the same.

Q Okay. Was there a time subsequently when the LDS system was taken offline and Wonder Ware was the sole software used?

A Yes.

Q When did that occur?
A I can't give you an exact time.
Q Can you give me your best estimate?
A Over six months ago.
Q Okay.
A I just can't remember.
Q That's -- that's all right. You've given me a ballpark. It was -- it was sometime after the -- the breach at Taum Sauk, and you think within -- was it -- was it in this year in '07? Could it have been in '07?
A I can't be certain of that.
Q Okay. What changed when that occurred?
A We operated it solely from Wonder Ware.
Q Okay. Wonder Ware also operates other plants besides Taum Sauk?
A Yes.
Q Kiakuck?
A Yes.
Q And Bagnell as well?
A Correct.
Q Any place else that you would be aware of?
A No.
Q Okay. Did you -- what happened to the screen that was showing LDS systems before --
A After they took it away?

Q Yes.
A The screen's still available, but not the Taum Sauk screen.
Q Because Taum Sauk's down. Is there another reason?
A I believe they went solely to Wonder Ware, and we don't view that screen anymore. It would be -- it would be non-operational.
Q Okay. So are the screens that were affiliated with LDS with Kiakuck and Bagnell blank as well now?
A No. It's two different systems. We run Taum Sauk with the Load Dispatch System.
Q Okay.
A And Wonder Well -- Wonder Ware -- I'm sorry.
Q Okay.
A Kiakuck and Bagnell, we run with the real flex software and Wonder Ware software.
Q All right. So there were two different screens for each one of those plants, Kiakuck and Bagnell. One -- what did you say? Real Flex?
A Correct.
Q And one with Wonder Ware?
A Correct.
Q Okay. And do you get similar information off of the -- two different systems?

A Yes.

Q Okay. Is that a redundancy that is there for a reason?

A Normally, a new system, they run in parallel with the old one until they get it worked out and it's up and running.

Q Okay. And on the morning of the breach when you heard that alarm that was affiliated with the skate system, you believe that that alarm was on the LDS screen?

A Correct.

JUDGE DALE: If I could -- I want to make sure it's the same.

COMMISSIONER DALE: Oh, I'll give you a minute here.

JUDGE DALE: If you'll go ahead and mark this one as 47-P.

Q (By Commissioner Gaw) Are you back?

A Yes.

Q On that same page 26 again. There's a statement in there about if you have the scat exception list called up and a new alarm comes in, the new alarm will not be on the list until you go through directory and pull the list up again. What does that mean?

A You have to -- there's a series of things you have to go through. It's not right on the skate exception

list. You have to go to the directory's box, pick station, Osage or Taum Sauk.

Q And so if an alarm goes -- goes up, is that one of the things that you would do generally?

A If we wanted to review the alarm.

Q Okay. When would you want to review an alarm?

A Not very often.

Q Okay. And -- and why is that? Why do you not need to review it very often?

A We're trained to immediately pick out the alarms that we need to look at.

Q Okay. And, once again, are those alarms that you need to look at put into this operator's manual?

A I believe there's a lot of them in there. I don't know if every one of them is in there.

Q Okay. The same thing -- it says the same thing applies for an alarm which has returned to normal, it will stay on the scat exception list until the list has been left and pulled up again. Is there anything there that need explanation?

A I don't believe.

Q If everything is in the normal state, you will not be able to find Osage or TS in the directory. What does that mean?

A I assume that there's no alarms pending or none

-- that there would be nothing in the list.

Q Okay. Once something goes off or an alarm comes in, then Osage or TS will appear in the directory. That means that if there is something abnormal, it should show up in the directory, correct?

A Correct.

Q On the morning of the breach, what -- did -- did you or, to your knowledge, did anyone else check about the alarms in the fashion that's noted on page 26?

A I don't know that.

Q Okay. Do you know whether that information would be stored in data files or else -- elsewhere?

A I wouldn't know that.

Q Okay. You know, who would?

A Tom Buhr was my supervisor.

Q And he would be familiar with that?

A Yes.

Q Is he still there?

A No.

Q Where is he now?

A He's in St. Louis, I believe.

Q Do you know what he's doing?

A No.

Q Is he with Ameren?

A Yes.

Q It says, It would be a good idea when coming on watch to pull the scat exception list up for Osage and Taum Sauk and check for alarms. Is that a normal practice that you would do?

A Yes.

Q When Wonder Ware came on board, did you also do it for Wonder Ware as well as the LDS system?

A Yeah. It was slightly different. We'd call -- we'd call up all alarms.

Q Okay. But -- but that would be your normal process?

A Yes.

Q Okay. Do you know when you came on duty on the 14th whether or not any of those alarms showed up on the exceptions list?

A I don't know what alarms you're talking about.

Q Well, any alarms.

A Not to my knowledge.

Q You don't recall specifically pulling it up that day, I would assume?

A No.

Q Okay. What about on that date in September when there was an overtopping in '05?

A I wasn't on shift at that time.

Q Okay. Do you know who was?

A No, I -- I don't.
Q That's okay. Thank you. On page 27, toward the top of the page, there is -- there is a Taum Sauk control, something that says to place and inhibit. And down under the -- neath that section, you can select inhibit alarming. Tell me what that means.
A If you'd have a nuisance alarm, you could inhibit that alarm.
Q Okay. Did you ever inhibit an alarm?
A Yes.
Q Okay. Give me an example of when you had to do that.
A If they had the power plant down for maintenance.
Q Okay.
A If it wasn't operational. Sometimes they would be working on a piece of equipment where we would get certain alarms over and over. That would be the only time anybody would ever inhibit any type of alarm. Not during operational.
Q Tell me whether or not there's anything in this operating manual that says what you just said.
A Not that I know of.
Q Okay. All right. And then just below that, it talks about removing an inhibited, which is putting

something back on as an alarm that had been inhibited before, right?

A Correct.

Q Okay. Turn to TS-40 for me, if you would. First of all, there's something up at the top of that page that's sort of laying over some of that page on my copy. Is it on your --

A Correct.

Q I don't know what that is. I don't suppose you do?

A No, I wouldn't.

Q Part of the -- part of what's covered up is something about a 30-minute period after start is executed, and then there's something about an incomplete alarm. Do you have any idea what that's referring to since we can't read it?

A Yes.

Q Tell me what that's about.

A It would be an incomplete sequence.

Q Okay. Such as -- give me an example of what that means.

A Well, if I give a pump or generate, it would be stopped in the sequence.

Q Okay.

A It would be an incomplete sequence, something in

the -- in the line of starting or stopping on the Taum Sauk if there was a problem.

Q Would that normally set off an alarm?

A I believe so.

Q Okay. When Taum Sauk was -- was shut down manually on December the 14th, would that have generated an alarm?

A No.

Q Okay. Do you know whether or not what -- are you familiar with what happened on the September date when there was an overtopping in regard to that -- that whole sequence of events on the operation side at Bagnell?

A I'm sorry. Could you repeat the question?

Q On the -- on the date when there was an overtopping in September of '05, when -- you weren't there, I understand. But are you familiar with what occurred?

A Somewhat. All I know is that they had a high wind and they were concerned about the wind pushing water over.

Q Okay. I guess what I was going to ask is whether anyone at the operational level at -- at -- at Osage said anything about alarms going off on that day.

A Not that I recollect.

Q Now, down below there on that page, it talks

about auto pump shut-down sequence.

A Yes.

Q Right in the middle there, it -- it says, If the upper pool is completely full, both pumps will lose their permissives. Do you see that?

A Yes.

Q Can you explain what that means?

A Yes.

Q Go ahead.

A When the upper reservoir is full, it does not allow you to pump again.

Q Okay. What's telling it that it's full, if you know?

A It would be whenever they set it at that -- at that point, whatever their -- their high pool was at that particular time.

Q Okay. So if -- if the high pool was set in the software at 1596, for instance, it wouldn't pump above that figure if that's -- let me start over. Do you know how -- how the software or the computer system would identify what level the pool was at?

A No.

Q Okay. So you don't know whether or not it was affiliated with the transducers or piezometers that -- that was taking the readings on the pool level?

A No.
Q Okay. Prior to the liner being placed in, do you know how -- how that determination would have been made?
A No.
Q So you never received any training in regard to how that operation worked?
A The mechanical part of it? Is that what you're asking? Or the --
Q Tell me, what training did you receive about that -- that area?
A Well, whenever that -- whenever it was a full pool, we lost the permissives on both units. That would indicate to me -- or would not allow the operator to restart a pump.
Q Okay. And how would you know that it was at full pool?
A It would be whatever the operating pool was at that particular time.
Q It would be -- show up on your screens?
A The -- the level would. Yes.
Q And would that correspond to what you knew the full pool to be set at?
A I don't quite understand the question.
Q Well, I -- I'm trying to understand what you

know about what full pool -- that's hard to say together -- full pools means and -- in regard to recognition by the -- the system, the automated part of the system. It is preset at some -- within the software, is it not?

A Correct.

Q And it can be set at different levels?

A Correct.

Q And is -- would it be your understanding that that information about what level that is is programmed into the software?

A Correct.

Q Do you know at the time whether it was programmed into both Wonder Ware and the LDS system?

A I believe it was in both systems.

Q Do you know whether or not both systems were set at the same figure?

A The best of my knowledge, I do, yes.

Q Why do you say that? What information do you base that upon?

A Because when the pumps came down, both LDS and Wonder Ware were tracking at that same level.

Q Okay.

A And then they both -- they both came down on that level.

Q What do you mean on that level? What does that

mean, that level?

A Well, that particular morning, it was 1592 and 1594.

Q 1592?

A Was the first auto shut-off.

Q Okay. And then 1594?

A The second auto.

Q And the screens that you're watching, the LDS screen and the Wonder Ware screen, they're working about the same?

A Yes.

Q My question is a little different than that other than the reading, and it relates to this setting of the full pool level. At that point in time, it was -- it was your understanding, was it not, that full pool was being set at 1594?

A Correct.

Q All right. And that would have been a change in what constituted full pool within the software system, would it not?

A Correct.

Q Were you -- are you aware of whether or not both the LDS system and the Wonder Ware system were changed to reflect that as full pool?

A I believe that they were.

Q And -- and, again, that's not reflective of what the level is, necessarily, that's on your screen unless you're -- but I need your help here to explain to me how do you know that? Why do you believe that other than the fact that they both showed a level up there?

A Because the LDS screen, the Load Dispatch System, and Wonder Ware would both take automatic stops.

Q At the -- at the same level?

A Correct.

Q And how did you know that?

A Because I had both screens in front of me.

Q Okay. And when did you witness an automatic stop?

A That morning or --

Q Whenever.

A Whenever that level reached that level, preset level.

Q Okay. Had you been witnessing automatic stops by the units prior to the breach?

A Oh, yes.

Q Was that a daily occurrence?

A Yes.

Q Okay. And as long as the unit was pumping up?

A Correct.

Q Okay. You don't know, do you, whether or not

the information on the LDS system and the information on the -- on the Wonder Ware system both originated from the same probes?

A I don't know that.

Q Okay. While you were watching the screens, just generally speaking, not necessarily just on the day of the -- of the breach, what would you watch in regard to the lower reservoir elevation?

A We'd watch it so it wouldn't reach 750.

Q Okay. And why was that?

A Because it's 750 top to lower -- spill section.

Q Okay. So that's the upper level, correct, on the lower reservoir?

A Correct.

Q What about the low level on the lower reservoir?

A Yeah. We run it at that on pump-up at times of -- times of low water.

Q All right. Was there -- was there a level at which you didn't want to get below?

A Yes.

Q And do you know what that was?

A I can't recollect right now.

Q Okay. Well, down below there on page 40, there's a reference to the first unit must be stopped at a lower reservoir elevation of 739. Do you know -- does

that -- does that tie into what you were discussing earlier or --

A Yes.

Q Tell me what that means again.

A That means that we don't want to pump up after 739 in the lower reservoir.

Q Okay. Well, that's the -- that's the first unit being stopped at the lower res -- reservoir elevation of 739. What about the second one?

A I believe it was slightly lower than that, 737.5.

Q Okay. Well, that would sort of stand to reason. But I don't see the figure in this operating manual.

A I don't see the figure. But we had it -- it was posted.

Q Okay. When something was posted like that, where would it be posted at?

A Directly next to the operating screen in the log book.

Q Okay. Is that just a piece of paper stuck on there? Or what -- what does it look like?

A Basically, it's a typed paper --

Q Okay.

A -- that is stuck on there.

Q Okay. Did that level vary on the lower

reservoir?

A Had they changed that? Is that what you're asking?

Q Yes. Uh-huh.

A Not to my knowledge.

Q Okay. Turn to page 50, TS-50. There in the middle of the page, it says, If both pumps are on and load dispatch requests a manual stop on one of the pumps, it is not necessary to select the unit designated as first auto shut-down. The reservoir will fail to pool regardless of which unit is selected.

Anything there that is different from just what it appears to be?

A No.

Q And, again, this shut-down is dependent upon the information being supplied as to the depth of the reservoir through the software system, correct?

A Correct.

Q And, also, through whatever measuring device is being used on site?

A Correct.

Q Okay. Down below there, where it says -- under subparagraph -- there's a sub 4. Since dispatching is the jurisdictional authority, any orders received from that group will take precedence. However, Osage will follow

the above procedures on a routine basis without instructions from Dispatching. Is that first sentence there true and accurate in regard to the normal operating process?

A Are you referring to No. 4 there?

Q Yes.

A That's true.

Q Okay. There's one of these examples on page TS-57. If there's plant flooding or fire, times when the plant is unattended, you're to immediately notify the following in the order listed.

I'm somewhat paraphrasing here. But there's a list of Fitzgerald, Wallen, Guard and Men. Would that have been the case at the time of the breach in regard to notification?

A No.

Q Okay. And who is -- when it's talking about No. 4, Men, what is that about?

A That would be the men that work down there on -- during the days, maintenance people.

Q Okay.

A Electricians, et cetera.

Q All right. This is -- there's an REV 7/9/99 on this page. Do you see that down toward the bottom?

A Yes.

Q Is that your understanding of the last date that this page was revised?
A As I look at it now, yes.
Q As we go through there, if that appears -- a date on that page of that sort, would that indicate the last time that that page was brought up to date?
A Correct.
Q Who was in -- who was responsible for updating this manual?
A Supervision.
Q And who -- who would that have been in 2005, let's say?
A I believe Tom Buhr was my immediate supervisor.
Q Okay. Would it have been his responsibility alone, or would it have been broader than that?
A I think it would have been broader.
Q Okay. Do you know whether or not there was someone in charge of ensuring that these operating manuals were kept up to date in St. Louis, just generally speaking?
A No. No.
Q Okay. Look at TS-59 with me. It says, Urgent station alarms. Again, I think this is sort of the same as I asked you earlier. Are any of these alarms -- were any of these urgent station alarms reference the

triggering of a high or high-high sensors at the upper reservoir?

A No.

Q Okay. Look at the previous page on 58. It says Taum Sauk alarms and something about four new alarms have been added to the Taum Sauk monitoring system. They are as follows. And then there is a list down below that. Does that -- do any of those have anything to do with getting the upper reservoir too high?

A Could you repeat the question?

Q Whether or not any of those alarms that are mentioned on -- on that page, 58, have anything to do with -- with getting too much water in the upper reservoir.

A I don't believe directly, no.

Q Okay. Anything indirect there that might --

A I don't believe.

Q Okay. Now, the revision on that page is 8/26/99, last revised, correct?

A Correct.

Q And on -- and on 59, the last revision on that one was 27, correct?

A What page is that?

Q On 59.

A Correct.

Q Okay. Do you see anything else in regard to

alarms in this portion?

A In the following pages or -- I don't know what you're --

Q Yeah. If you'll look at TS-56, it appears to be like a Table of Contents on a section that says, Alarms, fire and flooding alarms, two Taum Sauk alarms and three urgent station alarms. And do you see that?

A Yes.

Q Okay. And then subsequent to that, all the way up to TS-60, which TS-60 also talks about -- some about alarms, I think that up through maybe even TS-62 might have something to do with alarms, although I can't tell about 61 and 62 exactly. Can you see anything in those pages that has any anything to do with the upper reservoir alarm system for having too much water in the upper reservoir?

A TS-61, I think, is ineligible (sic).

Q TS-61 is what, sir?

A I can't read it.

Q Oh, you can't read it. TS-61 appears just to be a diagram, doesn't it?

A Yes.

Q And it says Osage plant at the top, doesn't it?

A Correct.

Q So it probably doesn't pertain to Taum Sauk. Or

does it? I guess it could.

A It could. But I just can't hardly pick anything out of any use on there.

Q Do you know whether this is plainer on the original?

A I don't know that.

Q Okay. But in any event, in the written portion up through page TS-60, do you see anything that relates to the upper reservoir alarms on --

A Okay.

Q And I should complete that. Upper reservoir alarms that relate to being too full.

A Correct.

Q Because there are alarms regarding leakage and some other things?

A Yes. Yes.

Q Okay. And this is the section of the operator's manual that relates to alarms, correct?

A Correct.

Q This may be what you were referring to earlier. Look on TS-124, the very top of that under Taum Sauk Facts. Do you see that? Would you read that first sentence? Or two sentences, I guess.

A TS-112.

Q You go clear to 124.

A Yes. I'm on 124.
Q Read that first couple of sentences, if you could.
A Never let upper pool pump over 1596 auto pump stop. Complete fail and keep pumping. One pump averages one and a half per hour.
Q You might have to speak up just a little bit. I'm sorry.
A One -- one pump averages two and a half per hour.
Q Okay. Is that 2 and a half feet an hour?
A Correct.
Q So is that -- first of all -- so there is -- I think you might have said earlier. There was something in here about not pumping over a certain level, right?
A Correct.
Q All right. Is this what you were referencing?
A I think there's something else in here from what I've seen.
Q Okay.
A It's something real similar.
Q Okay.
A But I don't believe it's the same thing I've seen earlier.
Q All right.

A It is also at the top of one of those pages.
Q Now, what is that -- auto stop pump could fail and keep pumping. What does that mean?
A If the auto pump would fail and keep pumping, I mean, anything has a -- sometimes could fail. It was an auto stop.
Q So as you're watching this -- at your viewing station, you're saying, just generally speaking, again, as this thing is pumping up toward 1596, how attentive are you going to normally be about watching that?
A I'm going to be sitting right in front of it.
Q Okay. And you're looking at what as you're sitting right in front of it?
A My upper level.
Q Okay. And do you have a button or something you're ready to push if something doesn't stop? Where do you -- what do you have to do if this thing is going to malfunction?
A We run a mouse.
Q The mouse?
A Yeah. And we go immediately on the stop.
Q And is that up there on the screen somewhere?
A Correct.
Q Now, if that -- if that were to happen and it was -- it was at 1596 and it goes to 1596.1, 1596.2, how

fast is it going to be -- how long is it going to be before you hit that stop if -- if that circumstance would occur?

A I would make it stop at 1596 or before.

Q Okay. All right. Is that -- is that sentence there that says one pump averages 2 and a half feet per hour correct, or do you know?

A I think that's changed slightly since they put the new turbines in.

Q You think that this relates to the old turbines?

A I believe so.

Q Okay. Now, I want to get a couple of other things on this page, and then I want to come back to this 1596 figure. But when you're talking about this -- looking down below, it's -- down several provisions -- several steps there. When pumping, second pump loses permissive approximately 20 minutes before auto shutdown 1 foot from full. What does that mean?

A Okay. I'll have to find it here.

Q It's not halfway down the page. It's a little above that.

A Okay. When pumping, second pump loses permissives approximately 20 minutes before auto shutdown on 1 foot from full.

Q Yes.

A That would not -- that would -- that would keep us from pumping with a second pump that wasn't on at that time. There would be no reason to put a second pump on. One foot from full, we would lose permissives on the second pump.

Q Okay. So what -- what occurs when that -- when the permissives are lost in that circumstance?

A We get an alarm. And the two red balls that I -- I talked about earlier turn green.

Q okay. They turn green?

A I believe so. Power plants are a little different. Red is go. Green is no.

Q Red is go, and green is no. Maybe this whole thing is starting to make a little more sense to me now. If -- if that's -- if that's the case, then if they turn green, would they turn green as -- as you're doing pump-up, let's say, on the day of the breach? You never did get -- did you get close to having those permissives go away as you were pumping up? Do you know? Did they go off or not?

A We took the -- the first No. 2 pump auto stopped.

Q Yes.

A I believe I -- I believe I got the permissives back on that because there was more than one for

differential.

Q Okay.

A But only for just a very slight period of time.

Q Okay. Explain what that would have meant so I'm tracking with you.

A Possibly I could have put a second pump on --

Q Okay.

A -- during that time frame. But it was only just for a very -- very short period of time.

Q Did you do that?

A No.

Q Okay. All right. Now, this is talking about the second pump losing permissives. Is that -- when it says a second pump, is that the last pump to shut down?

A Yes.

Q Okay. So where does it get this 20 minutes figure?

A It's just a guesstimate.

Q Okay. It's not time-based, is it?

A No.

Q It's -- it -- is it based upon its level indication?

A Correct.

Q Okay. So about how far from the top would that -- it says about 1 foot from full. That -- is that -- is

that the figure?

A Yes.

Q So if -- if we were at 1595 with the 1596 shut-down, at 1595, it would lose its permissives? Am I following?

A Not -- not the pump that was pumping because it is pumping. But the second pump. If it was in the off position, it would lose it permissive and not allow me to double pump within that short range.

Q I think I'm following you now. The second pump, as it's described in this sentence, has to do with not the last pump to shut down, but the first pump to shut down. Am I following you?

A The second pump would probably be the pump not pumping.

Q The -- the first pump to shut down of the two -- if there are two pumps originally pumping, is it --

A If there's two pumps pumping, and we -- one of them would shut down.

Q Yes.

A Okay? Okay. Say we took the first pump off 5 foot early.

Q Okay.

A We would get -- once that gen -- that pump's set back up and is ready to go, I would get a permissive on

that pump to pump.

Q All right.

A When we got within 1 foot of the second auto shut-down --

Q Yes.

A -- we would lose the permissive on that pump.

Q But the pump that's still pumping at that point, does anything happen with the permissives on it?

A No.

Q Okay. I'm following you.

THE COURT REPORTER: Excuse me. I need to change paper.

JUDGE DALE: Okay.

(Break in proceedings.)

Q (By Commissioner Gaw) Down below there on the same page again, Mr. Mentel, there's a reference to plant fire or plant flooding alarms and urgent station alarms. Do you see any reference on this page or the subsequent page which I think is a part of this that refers to any alarms related to the reservoir being too full, the upper reservoir?

A That would be starting with the -- about the fourth paragraph on page 124 from the bottom. Anything -- anything under the Taum Sauk Facts.

Q Okay.

A No. I don't see any.

Q Okay. I didn't either, but I wanted to make sure that I was understanding it. Now, in regard to -- take a look at the very last TS-133. And I think it -- I think it's also the same as the TS No. 1. But I'm not exactly sure. I hope you all are watching whether I'm getting into that information when I'm doing this because I haven't been.

On that page, I want you to ask perhaps a couple things. That's an e-mail from Richard Cooper and to several individuals. Just if you know -- if you understand what this is referring to, there's a -- there's a summer and a winter number there for first pump-off, second pump-off. Do you see that?

A Yes.

Q Now, first pump-off, summer was 1595. Second pump-off, 1596. Correct?

A Correct.

Q All right. Is that consistent with what -- with your operating instructions were during some portion of the time that you worked at Taum -- Osage?

A Yes.

Q Is it consistent throughout?

A No.

Q Okay. When did that change, if you recall?

A I can't -- I don't know the exact date. I know it changed after the -- the wind problem they had.

Q Okay. What about the winter first pump-off, second pump-off? I think you -- you said -- first of all, was that consistent with some portions of the time that you were working with Osage?

A Yes.

Q Okay. And did that change?

A Yes, I believe it did.

Q All right. Did it change more than once? In other words, did it change because the winter period -- I think you -- at some point, you said there was no -- there was no -- it was not longer different from the summer height?

A Correct.

Q Okay. Was that after the installation of the liner?

A I believe so.

Q Okay. And in regard to -- to -- to that, your understanding, as I heard you earlier, was that it had something to do with a concern about ice pushing -- pushing on the sides of the walls?

A Correct.

Q And -- and who told you that? Do you recall?

A I can't -- I can't tell you that exactly. It's

just been knowledge -- every-day knowledge.

Q Okay. In other words, when water freezes, ice expands in volume rather than contracting like most liquid to solids do, right?

A Correct.

Q Okay. So -- so with that expansion, it could push out on the walls? Was that the thought?

A That was my understanding.

Q Okay. Was it your understanding that placing the liner in somehow created some -- some reason why that was no longer an issue?

A I didn't really know.

Q Okay. Now, I want to ask, in regard to all pumps off, what does that mean? Because there, it says summer, 1597. What does that designation mean, if you know?

A That could mean two things. The upper probes, I'm assuming, would take all pumps off at 1597.

Q Okay.

A Because these are settings.

Q All right.

A Or that we were never -- I -- I assume that that means -- all pumps off would mean that the plant would take both units down, one or the other or both.

Q And this is an e-mail dated December 23rd, 2002,

correct?

A December 23rd, 2002. Correct.

Q And -- and there is nothing in this document in this manual that -- that updates the levels on Taum Sauk, correct?

A I don't know if this was an update at this particular time or not. This is just a reminder.

Q But there's nothing that updates that e-mail going -- that -- that is later than these e-mails.

A Not that I know of.

Q Okay. You may not know this at all. And if you don't, just tell me. Down below where it says, We have lowered the total volume from 5,000 acre feet to 4800 acre feet, so you shouldn't see much of a change in total generation capability -- why don't you read the rest of that to your -- to your -- is this any problem for him to read?

MR. BYRNE: I don't -- I don't think so. No.

Q (By Commissioner Gaw) Okay. Could you read the rest of that paragraph?

A To myself or out loud?

Q Whichever you'd like. If you don't have an opinion about it or you don't know what it means, there's no sense in reading it aloud. If you do, then reading it aloud helps.

A It's hard to understand.
Q You don't know exactly what it's talking about?
A No.
Q All right. I'll ask somebody else about that. It's -- this isn't necessarily your area, so -- all right. Now, pull up, if you would -- if somebody could give it to you the -- the -- the Independent Panel of Consultants report.
JUDGE DALE: Is it 3 or 22?
COMMISSIONER GAW: I don't know for sure. It's dated --
JUDGE DALE: April 28th?
COMMISSIONER GAW: December 14th, '05.
MS. PAKE: 3.
JUDGE DALE: Sir?
MS. PAKE: Keith.
MR. BIRK: Keith, right there.
Q (By Commissioner Gaw) Now, toward the back of that document, there's some -- some exhibits that are attached in -- in that document or -- or that are labeled figures 7 dash such and such. I want you to -- to look at 7-10, if you can find it. I believe you testified earlier that you had not read this report, correct?
A Correct.
Q Have you found 7-10 yet?

A Yes.
Q Okay. Now, that's labeled down there Hurricane Rita event, which we'll -- I want you to look at -- there's a date down below of 9/25/05. Do you see that?
A Yes. In the lower left hand part of the graph?
Q Yes. Now, does that -- does that graph look familiar to you at all in regard to just -- just what it appears to represent?
A It's the upper level.
Q Okay. Does that look familiar to you in regard to what you -- what you might see on the screen at Osage?
A No.
Q Can you tell me the similarity between this and what the upper level graph looks like on your screen?
A Well, I misunderstood that. It's similar with the times and the levels. I -- I thought that the particular outcome of this graph is what you were asking.
Q Not necessarily. I'm just trying to -- I want to get into that just a little bit, but I -- I'm just trying to see if there's -- we're looking at a time frame that looks like sometime after seven and to sometime around noon, doesn't it?
A I believe. Yes.
Q Okay. Now, you see at the top there -- well, just all along this -- there's some jaggedness to this --

to this graph. Do you notice that as well?

A Yes.

Q Okay. Is that something you would -- you would be used to seeing on your screens at Osage?

A Probably not quite to that extent.

Q To some extent, would you see that?

A Some extent.

Q You -- you weren't on duty on this day, I know, but let's -- let's just -- what does -- do you have -- when you see some jaggedness like that, what, if anything, does that indicate to you?

A It would indicate to me that the pool was at 15 -- I believe it shows 1596 on this and that there's a -- that it's showing a tenth either way maybe fluctuating.

Q Okay. What would that mean to you?

A It would mean maybe we've got a chop up there or sometimes the transducers aren't dead on. You know, they'll -- they're not exact -- I mean, they're very close, but it wasn't alarming.

Q Okay. This would not alarm you if you saw that?

A No.

Q Take a look at 7-13. It looks like 12/1/05. Do you see that?

A Yes.

Q I -- I do not know -- can you tell me whether or

not you would have been on duty on that date?

A I wouldn't -- I can't tell you.

Q Okay. That's all right. Just, if you would, does that look like something similar to what you would see on your screen on occasion?

A On occasion. I didn't monitor these -- these type of screens. I relied -- I relied mostly on the upper levels.

Q Okay. Now, tell me the distinction so I'll understand.

A We watched the upper level because it's a lot easier to know what the pump's doing at a glance than it is to follow something like this --

Q Okay.

A -- and try to find what time it is at the bottom, try to figure out across the graph where you're at. It would be a slow, slow way of doing business.

Q Okay.

A And if there was a problem, it would take longer to find it out on here than it would on the upper levels.

Q Okay. If you're -- if you're looking at this -- let me ask you this: Is it possible to see this on your screen?

A I believe so.

Q Okay. Is it possible for the screen to display

this plus a digital level reading at the same time?

A Yes.

Q Okay. But that's generally not the way you would be having your screen display?

A I believe there's several different graphs that could be on it.

Q Okay.

A I -- I normally don't look at a graph. My -- that's my personal preference.

Q Do you know if other operators have different personal preferences?

A I couldn't tell you that.

Q Okay. When you were training on -- on running this -- the system, was there any suggestion about using a particular screen?

A No. We'd only look on a graph possibly if we thought there was a problem. You know, no. There wasn't -- I wasn't told to use a graph over the level or either one.

Q Okay. Now, if you would have had this up on -- at a particular point in time and you saw this kind of activity that is showing up on this figure, what, if anything, would that have caused you to be concerned about?

A I don't think anything.

Q Okay. Now, it appears, does it not, that -- that -- if I'm following this, particularly as I go in toward 126, 155, that it actually shows -- even though there's -- there's both pumps are going, it actually is dropping in level in the upper reservoir at times.

A I believe this graph is reading from right to left. No. I'm sorry. It's reading from left to right. I was in the generating mode.

Q That's okay. You -- I had to check, too. Okay. So reading from left to right in the pump mode, correct?

A Correct.

Q Do you see what I'm -- what I'm talking about where there's some dips and it appears even though there's -- the pumping is going on that the water level is going done?

A Yeah. I can see some dips up -- especially up on the right-hand upper corner.

Q They become more pronounced up there, correct?

A Yes.

Q But even though -- now, what would you attribute that to if you saw something like that?

A I'd say maybe a -- maybe they fine-tuned -- or there was a little problem -- because the graph was still going up at a pretty steady rate, I would assume that -- that at times that there was a differential in the

reading. But I think it was a short period of time.

Q Now, Mr. Mental, if you would have -- you testified earlier that you did not know about the problems with these transducers, correct?

A Correct.

Q If you would have known that the transducers were not giving an accurate reading and you saw this on -- on your graph, would that have caused you concern?

A Possibly.

Q Okay. And tell me why.

A Because it would have got slightly worse towards the right. But, again, I'm not a graph watcher. That's just my nature.

Q Okay.

A It's too difficult to look at a graph and tell what time it is, where your levels are at, trace across with your finger. It's not precise enough for me.

Q Okay. Now, the screen that you are watching is just -- is it a digital number?

A Yes.

Q Okay. So what's your reference point as the numbers are changing?

A How many pumps have we got on?

Q Okay.

A Time frame.

Q Okay. Well, let me -- let me give you an example. For instance, if I look at this graph, I can get some idea about how quickly the reservoir is filling because it steepens the climb of the -- of the line going -- as you go from left to right, correct?

A Correct.

Q If I'm looking at a digital figure, just a digital figure on the board, how would I be able to measure that increase or acceleration in the filling of the reservoir?

A We take a reading every 30 minutes when the pumps are on or sooner.

Q Okay.

A I could glance at that in 15 minutes, and I'll know that both pumps should be pumping at a certain volume --

Q Okay.

A -- and could quickly ascertain whether the pumps were pumping out that volume or not.

Q Was that a calculation that you would normally make?

A Yes.

Q Would you record that calculation?

A We recorded the upper and the lower pool every half-hour.

Q Yes.

A In between, I would still -- the -- I'm talking personally. I would look at that more than -- than every 30 minutes.

Q Okay. That kind of an examination would not necessarily pick up these up and down jags that are on this graph, would it?

A I don't think so.

Q It would average --average those out?

A I don't know if it's an average or not. I wouldn't know that.

Q Okay. These answers probably -- or these other graphs probably will produce similar results. But look -- let's see. If you -- on the Figure 7-14, there's a note on December the 2nd there. And in the FERC report is -- is editorializing here, note erratic behavior on rising in lower level compared to falling level. Do you see the -- the difference between the jagged motions as it's being pumped up as compared to relatively straight, non-jagged line as it's in generation mode?

A Yes.

Q Again, that's something that you would not have seen because you don't look at those -- that screen, correct?

A Correct.

Q And if you had been looking at that screen, your testimony would be that it wouldn't necessarily have triggered any alarms for you?

A No.

Q And you didn't -- you didn't receive any training that you were aware of that you can remember that would have told you that this should be something that you should be concerned about?

A No.

Q Okay. Now, I want to go through -- and I'll try to hurry through this a little. If you'll look through Figure 7-15, progressively, that's January '05; 7-16, April '05; 7-17, June of '05; July 1st, '05, 7-18; 7-19 is August 1st; 7-20, August 10th; 7-21, August 17th; September 2nd of '05, 7-22.

Do you see the increases in the jaggedness of the lines as -- as we regress in time during those figures?

A Yes. Slightly.

Q Okay. Now, also, if you would, look at 7-23. That is represented as being December the 10th. Do you know whether you were on duty during that time frame? That would have been 11:30 in the morning through sometime after four in the afternoon.

A No, I wouldn't.

Q Okay. Do you know who would have been on duty that day?

A No.

Q If you would have been looking at your digital read-out, do you see the big jump there that takes place with both units off and then the level seems to radically -- or not radically. It rises, we'll say, for no apparent reason and both units are off. Do you see that?

A Yes.

Q If you were watching the screen on your digital read-out, would that be something that -- that one would have been able to see as an operator?

A I believe so.

Q Okay. If you had seen that, would it have caused you any alarm?

A I would have most likely called the Operating Supervisor at Taum Sauk.

Q Okay. And why would you have done that?

A Because it's a big deal. It's more than just a few tenths either way.

Q Turn to the figure 7-24, if you would, Mr. Mentel. That is the graph of the evening of 12/13 leading up into the morning of 12/14 until about, it looks like, 5:30 or so in the morning. Do you see that?

A Yeah. Figure 7-24?

Q Yes. Now, would you have been on duty during in time frame?

A Let me see. Was this -- time frame was 20 -- 20:24 -- eight -- 8:24 p.m.

Q Yeah. It looks like on the 13th.

A Starting on the left. I would have came on shift at approximately 22 or 22:15.

Q 22 or 22:15 on 12/13?

A Yes.

Q Okay. So at that time, if we look at that, again, you would have been looking at a digital read-out. Do you remember noticing -- do you see where there's that -- there's this jaggedness in there? And just before -- it looks like just before midnight. Do you see that?

A Is that where the arrow says Pump 2 start?

Q Yes. There.

A Yes. I see it.

Q Were you on duty then?

A Yes.

Q Okay. And do you recall seeing anything on the digital read-out that -- that would have indicated that -- that drop in level where that Pump 2 start is indicated on this graph?

A Yeah. It's a possibility. But -- yes.

Q Okay. I want to understand what you're saying.

Do you recall seeing -- seeing that dip?

A No.

Q Okay. So when you answered, tell me what you were telling -- what you were answering. I didn't understand it.

A It's not unusual for when that second pump comes on to get a little bit.

Q It is not?

A No.

Q Okay. Do you know why that is?

A Because that -- that pump takes a pretty good -- pretty good jag of water up the hill immediately.

Q Okay. And how -- tell me how you -- you believe that that would logically cause a drop in level on the indicators.

A Don't know. Sometimes it just -- it will just be a little glitch. It may not necessarily be a drop, though. But I -- there is -- sometimes on a second pump, you'll get a little fluctuation, and sometimes if it goes up, it will come down, it will settle out. It's just a blip.

Q Do you know whether you had a similar circumstance prior to the installation of the liner?

A I don't know.

Q Okay. You know that you've seen this prior to

this date, correct, on this 12/13, 12/14 time frame?

A I don't understand the question.

Q You have seen this circumstance where there is this dip before Pump 2 starts prior to 12/13 of '05?

A Yes.

Q But you don't recall whether those events that you witnessed predated the installation of the liner?

A Oh, no. I mean, the only time I would catch anything like that is if I was looking exactly at that time. It was pretty quick.

Q Because if you're not looking at it, you don't have the history up on that board, right?

A Correct.

Q Okay. Now, when and how were you made aware of the change in the amount of -- of the level at Taum Sauk in '05?

A You mean when we dropped it to --

Q To 1594 from 1596?

A I believe it came from supervision. And we and we logged it. And it was also taped right next to the screen.

Q Okay. Is there any explanation that you recall?

A Not that I recall.

Q Did anyone -- did anyone sit down and talk with you or any of your colleagues that you were aware of to

let you know why that number was being adjusted?

A I -- I don't know that for sure other than -- than -- than the wind. It may have been talked -- none formally --

Q Okay.

A -- you know. I'm sure when we passed it on somebody probably said, Why is it lower? And we probably said, Because we had this wind problem.

Q Okay. Was it your understanding -- and, again, there was never any indication to you that there was ever any instrumentation problems with the level indicators that you saw at Osage?

A No.

Q So is it -- is it accurate to say that it was your belief that the actual water level as measured up against the wall down in Taum Sauk was being dropped by 2 feet?

A Yes.

Q That was your belief?

A Yes.

Q And if I told you that there was testimony that indicated from other individuals that worked for Ameren that the intent was to maintain the level at a certain place on that -- on that wall when that adjustment was made, would that be a surprise to you?

A Yes.

Q That, as you have said, was not your understanding?

A No, that was not my understanding.

COMMISSIONER GAW: Mr. Mentel, thank you very much. It's been a long afternoon, and I -- I appreciate your patience.

MR. MENTEL: Thank you.

MS. PAKE: We have no questions.

JUDGE DALE: Thank you. Then with that, Mr. Mentel, you are excused, although not finally released. And we will be concluding --

MR. MILLS: Before we go off the record, can I ask a couple of procedural questions?

JUDGE DALE: Certainly.

MR. MILLS: First of all, with regard to tomorrow's examination of Mr. Scott --

JUDGE DALE: Yes.

MR. MILLS: -- Who is not going to be here, will he have access to these kinds of documents that we've been talking about today?

MR. HAAR: Judge, we're going to make sure that someone is there and has all the exhibits available.

JUDGE DALE: Okay.

MR. MILLS: The Highway Patrol report in

particular?

MS. PAKE: Yes.

MR. HAAR: And the Highway Patrol report.

MR. MILLS: And with regard to -- and I wasn't there at the earlier proceedings, but I noticed that from reading through the transcripts that you cautioned all of the previous witnesses that they were to be available for re-call at some point.

Are there any plans to re-call any of those witnesses? And if -- if we wanted to re-call them, how would we go about requesting that?

JUDGE DALE: I think only the Commission would be able to re-call them.

MR. MILLS: Okay.

JUDGE DALE: And at this point, it is not my understanding that any of the Commissioners wish to re-call them.

MR. MILLS: Okay. And then my final question about witness scheduling has to do with Mr. Cooper. Is Mr. Cooper going to be available at any point?

MR. BYRNE: No.

JUDGE DALE: It isn't -- no, I don't believe so.

MR. MILLS: Okay. And only the Commission could make him available? Is that --

JUDGE DALE: I don't believe the Commission is

going to attempt to make him available.

MR. MILLS: Okay.

JUDGE DALE: You might want to talk to Mr. Byrne privately off the record.

MR. MILLS: I'd rather do it on the record, but --

JUDGE DALE: It involves personal circumstances in Mr. Cooper's life. He's gravely ill.

MR. MILLS: Okay. Okay. So I --

JUDGE DALE: So at the present time, he is not -- there are no plans to call him.

MR. MILLS: Okay. Thank you.

JUDGE DALE: Is there anything else before we go off the record?

MR. REED: I'd like to move for admission of No. 48. The changes that I proposed on this page, Judge, was in paragraph 5. Mr. Mentel indicated that we should change aware to unaware. Beyond that, I think this was adequately explained in his testimony without having to make a lot of edits.

JUDGE DALE: So the -- unaware was -- should be changed to aware in the one, two, three, four --

MR. REED: It's three from the bottom. It's three from the bottom in paragraph 5. You'll see where it says but was aware of when.

JUDGE DALE: Oh.

MR. REED: It should say but was unaware of when.

JUDGE DALE: Okay. I was at the wrong unaware.

MR. REED: Sorry.

JUDGE DALE: Did the court reporter get the changes as well? Could you -- I'll need to make that change on your copy so for the one that's in the record.

THE COURT REPORTER: Okay.

JUDGE DALE: Thank you. Is there anything else that I need to address?

MS. PAKE: Judge, we'd just note our standing objection to admission of the summaries.

JUDGE DALE: Oh, yeah. See, I've actually got it written down, over objection. Hearing nothing further, it will be admitted.

Any other procedural or housekeeping matters that I should discuss while we're on the record? Keep in mind that we are tomorrow in 305 and that the witness will be appearing by video link. I -- I don't know how well we'll be able to see and hear and all that in the room. We may have to move around after we're settled and find out how well it's working. Anything else?

MR. BYRNE: Start at nine, right?

JUDGE DALE: Start at nine. Yes.

JUDGE DALE: Then we are in recess until tomorrow. Thank you.

REPORTER'S CERTIFICATE

STATE OF MISSOURI)
)ss.
COUNTY OF OSAGE)

I, Monnie S. VanZant, Certified Shorthand Reporter, Certified Court Reporter #0538, and Registered Professional Reporter, and Notary Public, within and for the State of Missouri, do hereby certify that I was personally present at the proceedings as set forth in the caption sheet hereof; that I then and there took down in stenotype the proceedings had at said time and was thereafter transcribed by me, and is fully and accurately set forth in the preceding pages.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on August 14, 2007.

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Monnie S. VanZant, CSR, CCR #0539

Registered Professional Reporter

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