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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

5 + + + + +

6 SUBCOMMITTEE ON PLANT OPERATIONS AND FIRE PROTECTION

7 + + + + +

8 MEETING

9 + + + + +

10 TUESDAY,

11 March 31, 2009

12 + + + + +

13 ROCKVILLE, MD

14 + + + + +

15  
16 The Subcommittee convened in Room T2B3 in  
17 the Headquarters of the Nuclear Regulatory  
18 Commission, Two White Flint North, 11545 Rockville  
19 Pike, Rockville, Maryland at 8:30 a.m., Mr. Harold  
20 Ray, Chair, presiding.

21  
22 SUBCOMMITTEE MEMBERS PRESENT:

23 HAROLD RAY, Chair

24 JOHN D. SIEBER

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MARIO V. BONACA

SAID ABDEL-KHALIK

OTTO L. MAYNARD

CHARLES H. BROWN, JR.

NRC STAFF PRESENT:

MAITRI BANERJEE, Designated Federal Official

JOSEPH GIITTER

PAT MILANO

L. RAGHAVAN

BOB HAAG

ALSO PRESENT:

GEORGE MORRIS (via telephone)

MASOUD BAJESTANI

GORDON ARENT

STEVEN HILMES

WILLIAM CROUCH

FRANK KOONTZ

P. DAVID OSBORNE

EDWIN FREEMAN

STEVE SMITH

BOB MOLL

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REGION PRESENTATION:**NEAL R. GROSS**

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

8:28 a.m.

CHAIR RAY: Good morning. I'm Harold Ray, Chairman of the ACRS Plant Operations and Fire Protection Subcommittee for Operating License Review of Watts Bar Nuclear Plant, Unit 2. Other ACRS Members in attendance are Jack Sieber, Charlie Brown, Otto Maynard, Mario Bonaca, John Stetkar, Said Abdel-Khalik and we may have one other Member participating who has not yet arrived.

Ms. Maitri Banerjee is the Designated Federal Official for this meeting. The TVA's original operating license application was for a two-unit plant, but construction and NRC operating license review of Unit 2 was put on hold after organizational efficiencies were identified with TVA in the mid-1980s and Unit 2 was put in a deferred plant status.

The NRC staff safety evaluation for operating license review for Watts Bar Unit 1 and Unit 2 was documented in NUREG-0847 through Supplement 20 and resulted in an operating license for Unit 1, but Unit 2 review was incomplete.

The purpose of today's meeting is to

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1 receive a briefing from the staff and TVA and discuss  
2 the staff plan for completing the operating license  
3 review of Watts Bar Unit 2 and its scope delineated  
4 in recently issued Supplement 21 of the NUREG that I  
5 referenced.

6 This briefing is open to the public and  
7 if we have members of the public participating, we  
8 will have up to 10 minutes for any member of the  
9 public who may want to ask questions, to do so at the  
10 end of the meeting.

11 At this point, I would like to ask those  
12 on the line, which is open at this point, to identify  
13 themselves, please.

14 MR. MORRIS: George Morris.

15 CHAIR RAY: Mr. Morris. Anyone else?  
16 The line will be placed in listen only mode, at this  
17 time. As a transcript of the meeting is being kept,  
18 I request that participants in this meeting use the  
19 microphones located throughout the meeting room when  
20 they are addressing the Subcommittee. Participants  
21 should first identify themselves and speak with  
22 sufficient clarity and volume, so that they can be  
23 readily heard.

24 We also have a telephone bridge line, as

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1 I have just noted, established for the meeting, which  
2 is one way only. People on the bridge line will be  
3 able to listen in, but not ask questions.

4 At the end of today's meeting, the  
5 Subcommittee will caucus relative to whether to  
6 recommend to the Full Committee that the ACRS issue a  
7 letter at this time. I'll jump ahead to the last  
8 slide of the staff's presentation, so that we will  
9 all be focused on this at the outset where the staff  
10 requests and ACRS letter report at the May 2009 ACRS  
11 meeting with ACRS recommendations for the current  
12 review starting points.

13 So the issue at hand primarily for the  
14 Subcommittee is the starting point for this review  
15 that the staff will be describing to us.

16 We will now proceed with the meeting and  
17 I'll call on Mr. Joseph Giitter of the Office of  
18 Nuclear Reactor Regulation to begin the staff  
19 presentation.

20 MR. GIITTER: Okay. Good morning. Thank  
21 you for the opportunity to speak today. My name is  
22 Joe Giitter. I'm the Director of the Division of  
23 Operating Reactor Licensing in the Office of Nuclear  
24 Reactor Regulation. I plan to keep my opening

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1 remarks brief to stay on the scheduled time this  
2 morning.

3 As you know, the Atomic Energy Commission  
4 granted Tennessee Valley Authority or TVA a  
5 construction permit for Watts Bar Unit 2 on January  
6 3, 1973. Jumping ahead quite a bit of time, on  
7 August 3, 2007, TVA notified the NRR Office Director  
8 that TVA would resume construction of Watts Bar Unit  
9 2 within 120 days in accordance with the Commission  
10 policy statement on deferred plans.

11 Today we are here to talk about the  
12 process that we are following in terms of licensing  
13 and construction inspection that will ensure adequate  
14 protection of public health and safety. Over the  
15 next several hours, you will hear more about what has  
16 transpired at Watts Bar Unit 2 since the mid-80s when  
17 construction was stopped.

18 And since then, you are also going to  
19 hear about areas that staff has reviewed today to  
20 consider resolved or closed, including areas that the  
21 staff considers open. You will also hear about the  
22 current licensing basis and refurbishment of plan  
23 equipment from TVA and about potential interactions  
24 between Unit 2 construction or reactivation and Unit

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1 2 completion and the ongoing operation maintenance of  
2 Unit 1.

3 I was at TVA at the Watts Bar site  
4 several months ago and was able to see how that was  
5 being addressed.

6 On February 27, 2009, the staff provided  
7 the ACRS with NUREG-0847, Supplement 21, the safety  
8 evaluation report, related to the operation of Watts  
9 Bar Unit 2. This provides the NRC staff summary of  
10 the previous reviews and is the starting point for  
11 the review from this point forward.

12 The NRC staff proposes to come back to  
13 ACRS on a periodic basis with supplements to NUREG-  
14 0847.

15 CHAIR RAY: Joe, excuse me. Since you  
16 did just now state that the starting point was, could  
17 you repeat that one more time?

18 MR. GIITTER: Sure. What we plan to do  
19 is to -- the starting point is the Supplement 21, the  
20 NUREG-0847, which was the original NUREG. What we  
21 would like to do is to come back as we complete  
22 additional supplements to NUREG-0847. You will hear  
23 more about that from the staff as to what is -- and  
24 you have had an opportunity hopefully to look at the

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1 Supplement 21 to NUREG-0847.

2 At the end of the day after hearing  
3 presentations from the staff, we hope that you will  
4 recommend to the ACRS Full Committee to write a  
5 letter/report that provides ACRS recommendations  
6 regarding the Watts Bar Unit 2 review.

7 At this point, I'll turn it over to Pat  
8 Milano, on my left, who is going to talk more about  
9 the process that we are following. Pat is the NRR  
10 Senior Project Manager for Watts Bar Unit 2.

11 MR. MILANO: Thank you. Good morning,  
12 Mr. Ray and other Members of the Subcommittee.

13 CHAIR RAY: Morning.

14 MR. MILANO: Since Watts Bar both Units 1  
15 and 2 have had a checkered history and a complicated  
16 history in terms of plant licensing and stuff, I  
17 would like to go through a little bit of background  
18 information just to set the stage for, you know,  
19 future discussions.

20 With regard to the plant, you know, some  
21 basic design information, in 1971 TVA applied for the  
22 original construction permits for a two-unit  
23 Westinghouse 4-loop pressurized water reactor at its  
24 Watts Bar Nuclear Plant site in Rhea County,

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1 Tennessee. The site comprises about 1,700 acres on  
2 the west bank of the Chicamauga Reservoir, which is  
3 on the Tennessee River about 50 miles northeast of  
4 Chattanooga, Tennessee.

5 Also, just for some other geographical  
6 perspective, the site is about 2 miles south of the  
7 Watts Bar Dam and about 1 mile south of a retired TVA  
8 fossil-fired station. The nuclear steam supply  
9 system for Watts Bar Unit 2 is to be rated at 3411  
10 megawatts thermal with an electrical -- an expected  
11 electrical output of about 1,200 megawatts of  
12 electric.

13 Unit 1 currently operates at a slightly  
14 higher thermal power level of 3459 because the staff  
15 has approved a measurement uncertainty uprate for  
16 Watts Bar Unit 1 that TVA currently does not plan to  
17 request during the initial operating license, but may  
18 come in at a later time and request the same thing  
19 for Unit 2, after the Unit 2 is licensed.

20 Also, each unit was designed to use a  
21 cooling tower to dissipate heat from the circulating  
22 water system. TVA subsequently incorporated a  
23 supplemental cooling to the tower basins. And  
24 depending on plant -- or on environmental conditions,

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1 about 100,000 or 130,000 gallons per minute of water  
2 from a deep water intake above the Watts Bar Dam is  
3 routed to the basins and then back to the river.  
4 This added cooling allows the -- allows Unit 1  
5 currently to obtain full electrical output during,  
6 you know, certain environmental conditions.

7 Next slide. Again, I would like to say,  
8 you know, because TVA will also be covering the  
9 history of engineering construction and licensing of  
10 Watts Bar as part of its presentation, I'm just going  
11 to hit right now on a few of the major highlights  
12 that have taken place over the past years.

13 TVA began initial construction of both  
14 units in early 1973. And construction progressed  
15 until 1985 when TVA felt that Unit 1 was nearly  
16 complete and ready for its operating license.  
17 However, because of the identification of a number of  
18 construction performance deficiencies as Mr. Ray  
19 initially alluded to, the NRC required TVA to come up  
20 with a Performance Improvement Plan. This was in the  
21 form of a letter to TVA under 10 CFR 5054.

22 TVA submitted its plan which incorporated  
23 both corporate and plant-specific elements. The  
24 staff documented its -- these plans and the review of

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1 these plans in another NRC report, NUREG-1232,  
2 including Volume 4, which was specific to the Watts  
3 Bar site. And some of the corrective action plans,  
4 however -- or excuse me. Some of the corrective  
5 plans -- corrective action plans that you will be  
6 hearing about later on were reviewed in this NUREG  
7 and also were documented in safety evaluation report  
8 NUREG-0847.

9 Looking at this history, you will see  
10 that the -- the dates up there and again, you know,  
11 from 1985 through the 1986, there wasn't much going  
12 on. And indeed, in April of 1986, TVA rescinded its  
13 certification that the plant was ready for licensing  
14 and informed us that they weren't seeking an  
15 operating license at that time.

16 Next page. After TVA addressed the  
17 deficiencies, economic conditions had changed and it  
18 decided to only proceed and finish Unit 1. Unit 2  
19 was placed in a deferred plant status, as defined by  
20 the Commission's policy statement on deferred plants.

21 This -- with regard to Unit 2, Unit 2  
22 stayed and had deferred plant status and as Mr.  
23 Giitter initially said in early 2007, TVA began  
24 discussions with the Commission about the possibility

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1 of finishing construction Watts Bar Unit 2.

2 And on the basis of these inquiries, the  
3 Commission issued an SRM, a Staff Requirements  
4 Memorandum, which provided direction on the licensing  
5 and inspection of Unit 2, should TVA decide to  
6 reactivate construction.

7 CHAIR RAY: Now, let's stop here just for  
8 a second.

9 MR. MILANO: Yes.

10 CHAIR RAY: I think as the Subcommittee  
11 and then eventually the Full Committee perhaps  
12 considers the issue at hand presently, this long  
13 passage of time from the mid-80s to 2000, to start  
14 with when the Unit 2 was put in deferred status and  
15 then on until now is going to present questions,  
16 particularly if the question a hand is, as you have  
17 put it before us which is, are we starting at the  
18 right point, requires us to ask about well, what was  
19 going on at Unit 2 during this long period of time?  
20 My God, that's 20 plus years.

21 And there was 15 years between the time  
22 that the work stopped pretty much and when the plant  
23 was even put in deferred status. So how do we get  
24 our arms around this question of are we starting at

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1 the right point in looking at Unit 2, given this  
2 period of time?

3 And in looking through what we have been  
4 given so far, and I know TVA will no doubt speak to  
5 this, but I would like to hear from the staff and  
6 particularly perhaps from the region, what can we  
7 assume about what went on during this very long  
8 period of time, relative to Unit 2? And I'm not sure  
9 I see that presented here very clearly. I just want  
10 to tell you that now, because it may influence what  
11 you and others say during the balance of your  
12 presentation.

13 MEMBER BONACA: Yes, I would like to add  
14 to the same call. I mean, the issue of layout. I  
15 mean, it's not clear what the quality of the layout  
16 was during this period of time. There have been  
17 variation apparently. We need to hear about that.  
18 And most of all, how then the construction, this  
19 issue of adequacy or not adequacy, layout is being  
20 addressed, which really goes in the same.

21 MEMBER MAYNARD: Yeah, and I think both  
22 from the applicant's perspective and also what was  
23 the NRC doing, what inspections and stuff were going  
24 on, so from both perspectives.

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1 CHAIR RAY: So that period of time more  
2 than what the review of regulatory approval status  
3 might be, which is a necessary thing to do, but we  
4 are very interested, as you may hear in this period  
5 prior to the time when work resumes and the different  
6 phases that apparently existed for Unit 2 in that  
7 period.

8 MR. MILANO: Okay. Well, I would like to  
9 say in this, before I ask for some support from Mr.  
10 Haag, who is the Branch Chief in the Division of  
11 Construction Inspection, Branch 3 in Region II, with  
12 regard to your aspects about what types of  
13 inspections, I would like to make a few statements  
14 here.

15 And TVA is also -- I'm aware that during  
16 the course of their presentation, they are going to  
17 get into -- they can provide more of the true  
18 hardware details to answer this type of question.  
19 During the time period where TVA in a sense put the  
20 plant into a deferred status, even though the actual  
21 deferral statement wasn't made until a later time,  
22 but since -- during that time period where they  
23 deferred construction to the point of deferral and  
24 stuff, TVA was basically doing a preventive

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1 maintenance program on the equipment that they, you  
2 know, felt essential, the safety-related equipment  
3 and such and other high- investment pieces of  
4 equipment.

5 The -- however, as time progressed and  
6 they did -- you know, it looked less likely that they  
7 were going to finish Unit 2, the amount of preventive  
8 maintenance and the scope of preventive maintenance  
9 had somewhat changed in terms of, you know, what they  
10 were doing on these pieces of equipment.

11 Now, at this time here and looking back  
12 as to what, you know, is the current state of the  
13 plant in terms of starting construction, restarting  
14 construction, TVA has gone through an extensive  
15 series of walk-downs to actually determine where --  
16 you know, what the current state of the material  
17 condition of the facility.

18 In addition, they have provided to us and  
19 these plans are currently under review by Region II.

20 They have a refurbishment program which defines what  
21 they need to -- how they are going to approach, you  
22 know, the repair, replacement, rework of various  
23 components that they -- that are defined under these  
24 walk-downs that, you know, need to be refurbished.

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1 And also they are restating, you know, other things  
2 that wherein they -- preventing further degradation  
3 of the current equipment at the station.

4 With that, I would like to turn it over  
5 to Mr. Haag, who can further elaborate on what the  
6 inspection activities were.

7 MR. HAAG: Good morning, my name is Bob  
8 Haag. Mr. Ray, I'll try to talk about that during my  
9 presentation as far as what inspections we had done  
10 during time frame that you mentioned from the mid-80s  
11 up through the '90s and give you that historical  
12 perspective as far as what our review was related to.

13 I'll also talk about, you know, what we  
14 looked at upon TVA's reactivation of construction and  
15 what our future plans are as far as looking at that  
16 aspect of the equipment sitting idle for an extended  
17 period of time.

18 CHAIR RAY: Okay. That's well and good,  
19 fine. I just wanted to make that -- Members,  
20 Subcommittee Members have commented as well, try and  
21 address that. I'm not sure that it is just the  
22 physical equipment that we are talking about. When  
23 we are talking about a starting point, it's the  
24 starting point for the review, correct?

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1           That's a question that has different ways  
2 of thinking about it and looking at it. And I'm not  
3 sure how to answer it particularly, but it's the  
4 question that we are being asked anyway. And this  
5 hiatus and there has been comment made by Pat here  
6 now about prior to the time of deferral it actually  
7 was kind of a deferral treatment that was occurring.

8           At this point, since the NRC is here  
9 before us, we are really interested in what the NRC  
10 did and has done, and you'll speak to that, and not  
11 so much what TVA has been doing to reestablish and  
12 reverify the material condition of the plant.  
13 Enough. We will continue on with that background.

14           MR. MILANO: Well, if you don't mind, I  
15 would like to make one statement with regard to the  
16 licensing basis starting point, if you don't mind?

17           CHAIR RAY: Sure.

18           MR. MILANO: When the staff was going  
19 through its framework assessment to determine the  
20 starting point, which I'll talk about again in a few  
21 minutes and stuff, we also realized that there is a  
22 likelihood that things that we already -- that we  
23 believe are closed, that are closed within, you know,  
24 the topics were closed in previous supplements, the

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1 original and previous supplements of the SER, that  
2 they could be reopened for various reasons.

3 And we identified this issue and had  
4 discussions with TVA about it. And because of that,  
5 TVA has come up with a program for basically  
6 determining if things that were previously reviewed  
7 should be reopened for staff review. And if so, they  
8 will be. And we will document that fact, you know,  
9 in future supplements and stuff. And it's a  
10 relatively extensive program of what needs to be done  
11 in terms of looking back and looking in the future as  
12 to whether or not conditions have changed that would  
13 require the staff to reevaluate something that we  
14 currently consider closed. Okay.

15 MEMBER ABDEL-KHALIK: Wouldn't that task  
16 be more appropriate for the staff to perform?

17 MR. MILANO: What the -- actually, we  
18 felt it would be more appropriate for TVA, since TVA  
19 is responsible for providing us, you know, the  
20 licensing information for the staff to review. We --  
21 however, I agree with you the staff needs to look at  
22 this and that's part of the reason why we asked TVA  
23 to put this program or make this program a submittal  
24 for staff review and we fully expect that we are

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1 going to audit this program to make sure that we  
2 agree that all the actions taken to address the  
3 various conditions that could cause a reopening of a  
4 topic area are, indeed, right and TVA has been  
5 properly implementing it.

6 MR. GIITTER: The staff has always -- you  
7 know, has prerogative to go back and look at any  
8 issue that was considered to be closed and reevaluate  
9 it and do, as Pat indicated, an audit of any  
10 suggestions that the licensee makes to make sure that  
11 we have the reasonable assurance that those items  
12 that were closed, in fact, should have been closed.  
13 So that's always something that the staff has the  
14 prerogative to do and plans to do.

15 MEMBER ABDEL-KHALIK: Thank you.

16 MEMBER BROWN: One observation on that.  
17 If you go through Supplement 21, there is tons and  
18 tons of the items listed --

19 MR. GIITTER: Yes.

20 MEMBER BROWN: -- to be looked at that  
21 are listed as resolved.

22 MR. GIITTER: That's correct.

23 MEMBER BROWN: And I think your statement  
24 is very clear. You said how you may reopen some of

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1 those, but what was not -- I don't know, I think what  
2 Said was talking about, was my thought process, is it  
3 doesn't look like there was an assessment yet of  
4 those resolved items and which ones flow to the top.

5 And some -- you can read some of these and say oh,  
6 okay, that probably would -- resolution probably  
7 would be accepted and have no problem today, but  
8 there was no layout or assessment of some that may be  
9 a little bit more critical of a higher level of  
10 thought process that you might want to go back  
11 through.

12 So it looks like right now you are going  
13 to get a ton of information and tendency would be  
14 that well, all that stuff that was really resolved 20  
15 years ago is resolved, because we've got so much on  
16 our plate now, it's hard to go back and pull the  
17 string on those. And particularly if you look at the  
18 time frame within which you want to operate. I mean,  
19 doesn't their construction permit right now going  
20 out to what 2013 or something like that?

21 MR. GIITTER: Yes.

22 MEMBER BROWN: They've got a very short  
23 window.

24 So my concern is that -- and I'm not

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1 talking about people literally, that's just the  
2 tendency --

3 MR. GIITTER: Right.

4 MEMBER BROWN: -- when something has been  
5 resolved 20 years ago, you don't really know what the  
6 applicability of that resolution is relative to what  
7 you know today.

8 MR. GIITTER: Right.

9 MEMBER BROWN: So that's --

10 MR. GIITTER: It's a good comment. Now,  
11 you know, as I said, we do plan to do audits to make  
12 sure that we are satisfied with those items that were  
13 considered to be resolved, that they are, in fact,  
14 resolved.

15 MEMBER BROWN: Is there going to be kind  
16 of a listing of you have gone through them, these are  
17 the ones we think are okay and these are the ones we  
18 want to reopen and a basis for that or something like  
19 that be available?

20 MR. GIITTER: At some point in time we  
21 would, but we are not at that point yet in the  
22 review. I mean, that's -- right now, if you go back  
23 and you look at where -- you would have to make the  
24 call as to whether they are resolved or not. And

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1 those issues were resolved based on past precedent,  
2 you know, past reviews. But we still need, as Pat  
3 indicated, to do an audit to make sure that we are  
4 satisfied with that.

5 And in terms of a priority, you know, we  
6 have to use good engineering judgment, good judgment  
7 as to which of those issues are more important than  
8 others.

9 MR. MILANO: Also, I would like to  
10 mention, too, that although the description that is  
11 provided in Supplement 21, you know, is not lengthy,  
12 the --

13 MEMBER BROWN: It's zero.

14 MR. MILANO: Well, I hope not.

15 MEMBER BROWN: There is a listing of the  
16 item that says resolved and it says what the subject  
17 was and that's about all.

18 MR. MILANO: What I'm --

19 MEMBER BROWN: And I'm not criticizing  
20 that. I'm just --

21 MR. MILANO: I understand.

22 MEMBER BROWN: -- making the point.

23 MR. MILANO: No, what I was trying to say  
24 is there is a short description of the processes that

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1 went on in terms of developing the issues of open or  
2 resolved. However, that doesn't capture the total  
3 breadth of the -- what the staff did over the past  
4 two years in determining what was open and what was  
5 closed.

6 When the original request came in to  
7 reactivate, we asked each one of the applicable staff  
8 to review their sections and in that, to review just  
9 that, whether things should be open or closed. They  
10 went back and reread the applicable sections in the  
11 original and all the supplements and that's why we --  
12 in NUREG-21, you will see wherein we both for open  
13 and resolved, we list each one of the -- each time  
14 that that subject was discussed in, you know, the  
15 prior supplements and stuff.

16 And with that, the staff looked at it and  
17 things are going to change. You know, our current  
18 conclusions, you know, could -- are likely to change  
19 in some areas and stuff. But the staff, after  
20 reading that, came -- you know, felt that these are  
21 the currently open sections that needed, you know, to  
22 be resolved.

23 I think Mr. Raghavan wanted to make a  
24 statement, too.

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1 MR. RAGHAVAN: Yes. My name is Raghavan.

2 I'm the Branch Chief in the Division of the Active  
3 Licensing. I'm responsible for the Watts Bar Unit 2.

4 Basically, we took two steps. Step No. 1 is to  
5 determine, go back, look at the 20 supplements that  
6 have taken place over the period of 20 years and  
7 licensing one-by-one. Many of those supplements  
8 include Watts Bar Unit 2 review as well.

9 So we wanted to go and take a look at it  
10 and just say has any particular issue has been  
11 specifically reviewed and approved by the staff? If  
12 so, in what supplement it was reviewed? So that's  
13 what we did in this particular document. That's Step  
14 1. That is not to say that this is resolved and  
15 closed for operating license.

16 You put a big caveat by saying that.  
17 This is our starting point. This is what we think  
18 that we have done based upon our review of the last  
19 20 supplements. If any of these issues when you are  
20 looking at any other topic that TVA submits, we will  
21 be looking at and I just say whether this new  
22 submittal that comes in, whether this new plan that  
23 they have submitted does that affect any of our  
24 previous review?

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1           That's the program that we wanted TVA to  
2           have.    TVA would submit it and we would also  
3           continuously review.   To go back to the Supplement  
4           21, I have to second what Mr. Pat Milano said, this  
5           document even though it looks more in terms of pieces  
6           of paper, this is a compendium of a review of 20  
7           supplements that ranges about 300 topics of the  
8           standard review plan.

9           It is also the -- they also reviewed  
10          about 1,100 generic communications dating back to  
11          1971. We looked at 29 corrective action programs and  
12          special programs that have been reviewed and approved  
13          in NUREG-1232 and also NUREG-847, Supplement 5  
14          through 20. So we looked at all those things and  
15          technical staff looked at it and they wrote the  
16          safety evaluation. And it is documented and it is  
17          referenced here, right?

18                 MR. MILANO: Yes, it is in the back.

19                 MR. RAGHAVAN: So this to me is the  
20          starting point of where are we? We left it 20 years  
21          ago and now we want to establish where are we  
22          starting now. But the starting point is for the  
23          purposes of review where we want to start. But as  
24          part as the progress along in the future two

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1 questions will have to be kept in our mind.

2 No. 1, going forward is this a new topic  
3 that has not been resolved? We need to be looking at  
4 it using the current requirements.

5 The second thing is in so doing, any of  
6 the topics that we had previously reviewed and  
7 approved, do they continue to remain valid? If not,  
8 what do you have to do about it?

9 That's where I think that's the starting  
10 point.

11 MEMBER BONACA: Let me ask you a question  
12 again about the physical plant. For Browns Ferry 1,  
13 a review was performed by TVA to determine whether  
14 the layout was adequate. In some cases it was not.  
15 And also to determine if the inspections, specific  
16 inspections and components would be sufficient to  
17 qualify the component's 40 years life. And they  
18 concluded that in many cases they could.

19 And in fact, the result of it was a  
20 measure of grade of piping, especially in the  
21 secondary side for Browns Ferry, if I remember. So  
22 now, I heard before there will be inspections being  
23 done on components to determine the status. In some  
24 cases the conclusions may be similar to what they got

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1 for Browns Ferry. I mean, the plant has been down  
2 for 20 years or more.

3 And the question I have is what program  
4 is underway to address this issue, the qualification  
5 of the physical plant? Because you know, a lot of  
6 things are here on the list of open items and some  
7 before had to do with the licensing actions, status  
8 and some support. I just wonder about the physical  
9 plant.

10 MR. MILANO: Now, again, this early  
11 portion of the presentation is strictly focused  
12 towards the licensing reviews that need to be done.  
13 TVA and also our construction inspection section  
14 will, you know, give you a better understanding of  
15 what was done to assess the current state of the  
16 facility and-- you know, determined by the extensive  
17 walk-downs that took place and also by Region II's  
18 assessment of these walk-downs and the current state  
19 of readiness for -- to restart construction.

20 MEMBER BONACA: There is a process  
21 underway in parallel?

22 MR. MILANO: That's correct. That's  
23 correct. And that's why I'm not talking about it  
24 now. I'm just focusing strictly on the licensing

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1 reviews that need to get done.

2 MEMBER BONACA: But we need to hear about  
3 this.

4 MR. GIITTER: You will hear about it  
5 today from Region --

6 MR. MILANO: You will hear about it later  
7 on.

8 MEMBER BONACA: You know, in the future  
9 at some point, I mean, that's --

10 MR. MILANO: No, we -- because I'm  
11 putting it off until a later time doesn't mean that  
12 we and NRR don't feel that that's important, you  
13 know. We agree with you and we feel the same way.  
14 It's just that it is being covered under separate  
15 portion of the overall programs that are being done  
16 to -- leading to the potential for issuing an  
17 operating license.

18 MEMBER BONACA: Yeah. And this the last  
19 comment I have, because for Unit 1 at Browns Ferry,  
20 they did a superb job, in my judgment. I mean, they  
21 did review components and they had dealt with them  
22 and they eliminated the issue of layout for most  
23 components. And so I would have expected they will  
24 have the flows behind us.

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1 MR. MILANO: Right. And TVA plans to  
2 discuss that aspect, again, with you when they come  
3 up.

4 CHAIR RAY: Well, you will be back this  
5 afternoon.

6 MR. MILANO: Yes.

7 CHAIR RAY: So we can pursue that.

8 MEMBER SIEBER: What you are asking us to  
9 do is to make the separation between the licensing  
10 effort and the physical plant condition and the  
11 construction effort?

12 MR. MILANO: That's correct.

13 MEMBER SIEBER: Okay.

14 MR. MILANO: That's correct.

15 CHAIR RAY: Very well. Maynard?

16 MEMBER MAYNARD: Oh, sorry, my turn?

17 MS. BANERJEE: If I may point out in the  
18 staff's Supplement 21 of the safety evaluation  
19 report, the staff did recognize and point out that  
20 some of the issues, some of the outstanding issues,  
21 you know, and generic communication there may be a  
22 need to reopen them as a result of, you know,  
23 circumstances that may arise. So it's not, how do  
24 you say, an open and closed case here.

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1 MR. MILANO: That's right.

2 CHAIR RAY: Well, yeah. I -- that's the  
3 case. There -- it's also stated here that design  
4 features and administrative programs are found to be  
5 in compliance with the regulations of Unit 1 and will  
6 likely be acceptable for Unit 2. Well, I think  
7 that's axiomatically true. On the other hand though,  
8 let me turn to, for example, in Supplement 21 there  
9 is a section at the back on -- called Quality  
10 Assurance, Section 17.

11 The only thing that is discussed in here  
12 is the ASME Code --

13 MR. MILANO: That's correct.

14 CHAIR RAY: -- standard. There is  
15 nothing discussed about the Appendix B program more  
16 generally.

17 MR. MILANO: No, because, at this point  
18 here, we weren't making any decisions with regard to  
19 the quality assurance program in terms of licensing.

20 TVA's quality assurance program that is in place was  
21 reviewed and approved by the staff and remains a  
22 site-wide quality assurance program that, indeed,  
23 they are implementing and living to. And this was  
24 also reviewed in terms of the construction readiness

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1 assessment that Region II did in making its  
2 determination that TVA was ready to restart  
3 construction.

4 They, indeed, verified that the quality  
5 assurance program, you know, that the procedures and  
6 stuff were in place to implement it successfully.

7 CHAIR RAY: Where is that described?

8 MR. MILANO: Um --

9 MR. HAAG: That would be -- you could  
10 take a look -- or we would have that document in our  
11 inspection report that has the results of our  
12 readiness inspection and in addition our quarterly  
13 inspection reports, you know, where we talk about the  
14 reviews of the quality assurance program,  
15 implementation of oversight by TVA.

16 CHAIR RAY: Well, frankly, that's not  
17 very accessible to us. And you know, again, you hear  
18 it in various ways from us, but our interest is in --  
19 you know, there is no down -- after all we are  
20 talking here about circumstances that arose from a  
21 breakdown in a programmatic breakdown, right? And  
22 then there was an NPP that was implemented.

23 One has to assume that for Unit 1 it was  
24 exactly sufficient and adequate. But it is very

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1 vague and murky as to where that program stands  
2 relative to Unit 2. And you know, you have got a  
3 discussion in here, as I say, about transferring the  
4 N-stamps, but there is nothing that is accessible to  
5 us that gives us any way of coming to some conclusion  
6 about are we starting at the right point relative to  
7 Units 2 and the programmatic issues that were  
8 addressed in Unit 1, but may not have been addressed  
9 in Unit 2. There's no way of telling, except if you  
10 go through the inspection reports, which we aren't  
11 prepared to do, I don't think.

12 MR. MILANO: And we are -- we plan to --  
13 as you will see -- as you saw in terms of Supplement  
14 21, there was a section of the review that covered  
15 corrective action programs and special programs.  
16 Those corrective actions and special programs were an  
17 outcome of the implementation of a performance  
18 improvement plan as, you know -- that was identified  
19 in NUREG-1233.

20 CHAIR RAY: Yeah, okay. I'm interrupting  
21 you and I apologize for that, but let me just -- we  
22 are okay on time, but we do need to move on here.  
23 But the point is that how that was done for Unit 1  
24 versus Unit 2 is the issue. And so often the

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1 discussion has to do -- these very fine recovery  
2 programs and they were implemented satisfactorily and  
3 nobody is going to raise a question about that, I'm  
4 sure.

5 But with regard to Unit 2 it is very  
6 unclear, at least in what we have been able to  
7 review, where the programmatic -- from the NRC  
8 perspective. Now TVA will speak to their own  
9 programs. But from the oversight of the corrective  
10 action and I'll just use Appendix B as an example,  
11 applicable to Unit 2, where did it start?

12 Well, it may well be fully covered in the  
13 inspection reports, but we don't have really the  
14 ability to digest all of that and come to some  
15 conclusion about it. And we are looking -- and  
16 perhaps we will now just defer this to Region II this  
17 afternoon and we'll talk about it further. But this  
18 is a question, at least in my mind, that I can't --  
19 the subject of walk-downs and testing this and that,  
20 fine that needs to be done. We need to be sure it is  
21 adequate.

22 But I don't understand how you pick up  
23 the thread on the programmatic side relative to Unit  
24 2. Just leave it there.

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1 MR. MILANO: Okay.

2 MEMBER SIEBER: There may be some value,  
3 at least for me, to look at the inspection reports  
4 that identified the breakdown. There probably is no  
5 more than half a dozen of them, but identify the  
6 situation just so we understand what the framework is  
7 that contributed to the delay in which must be  
8 overcome in order to restart the construction and  
9 eventually license the plant.

10 So I would sort of like to ask if  
11 somebody could do a little research about that and  
12 provide me with those inspection reports?

13 MS. BANERJEE: This is Maitri Banerjee  
14 again. I guess it's my fault. I didn't go into the  
15 inspection report area, because I thought that let's  
16 hear what they have to say and then I take upon  
17 myself an action item to work with the staff and get  
18 the Committee the needed inspection reports or a  
19 summary of, you know, some sort of derived document.

20 MR. GIITTER: We can provide you with any  
21 inspection reports you want, but as you indicated  
22 that, you know, I don't know how much time you want  
23 to spend pouring through inspection reports, but we  
24 will be glad to provide you with whatever reports you

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1 need.

2 MEMBER MAYNARD: Oh, I don't think the  
3 key is so much as to what happened back then, because  
4 I believe -- I'm confident that it was resolved for  
5 Unit 1. I think the real key issue for me is what  
6 thread ties it -- also applies to Unit 2? I mean,  
7 what really ties you to 2 into this in whatever has  
8 been done to resolve the issues for Unit 1. How does  
9 that thread tie to Unit 2?

10 MR. MILANO: Yeah, the thing is the  
11 implementation has, for the most part, not been  
12 completed on Unit 2.

13 MEMBER SIEBER: That's right.

14 MR. MILANO: About in September of this  
15 year, TVA came -- or excuse me, September of last  
16 year, TVA came in with a sizeable letter and  
17 documentation which went through each one of the sub-  
18 issues that are embedded in these 29 corrective  
19 action programs and described, you know, what was  
20 done on Unit 1, what was the program that was done on  
21 Unit 1, what the current state of implementation is  
22 on Unit 2 and, for the most part, they indicated that  
23 the same program will be used and implemented on Unit  
24 2 and the staff will review it, the inspection staff.

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1           There were some areas and -- about three  
2 areas where the staff needed to -- TVA wasn't going  
3 to do exactly what they did on Unit 1 for various  
4 reasons, in particular, issues with regard to cable  
5 and electrical. And also, there was refurbishment  
6 and QA records wherein they want to do something that  
7 programmatically the staff finds that it is probably  
8 better than what was done in the past.

9           And we are reviewing those things now and  
10 we will make a determination on them. And the region  
11 and -- will be inspecting implementation.

12           MR. RAGHAVAN: This is Raghavan again. I  
13 just would like to take this to the philosophical  
14 step as to how we want to do this corrective action  
15 program. There are 29 corrective action programs and  
16 special programs. We just generally call it as  
17 corrective action programs.

18           What happened was the 29 corrective  
19 action programs have reviewed and approved NUREG-1230  
20 to Volume IV for Unit 1. And the implementation of  
21 those corrective action programs were reviewed and  
22 approved in the NUREG-847 as part of safety  
23 evaluation, Supplement 5 through 20.

24           What we wanted to do was two things. No.

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1 is whether the corrective action program  
programmatically has TVA plan, which was implemented  
in Unit 1. Programmatically is it acceptable for  
Unit 2? At the present time, 20 years have passed,  
at the present time would the NRC look at it and just  
say this program is still valid, that there is no  
other requirement, those approaches are not valid for  
Unit 2 or are valid for Unit 2?

That's the decision we wanted to make.  
Having made that and we looked at it and we  
documented some of those things, the next step that  
we want to do is if this program is not acceptable  
for implementation on Unit 2, have they been  
implemented properly or not? That's the region's  
responsibility to go and look at the implementation.

In certain cases, I think the one -- the  
three cases that Pat pointed out was the -- regarding  
the cable issues and the electrical issues. TVA  
chose to do certain things slightly different from  
what did in Unit 1. Not that what was done in Unit 1  
was bad or did something, they wanted to do a little  
better or they wanted to make the inspection for the  
benefit of ease of construction.

And those are all the issues that we are

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1 currently working on right now. They are  
2 programmatically okay, slight changes from Unit 1 and  
3 now we are looking at it programmatic, whether this  
4 approach is valid for Unit 2 or not. That is where  
5 we are stopped right now. The implementation, how  
6 they implement these programs that they will will be  
7 the subject matter for discussion in the next few  
8 years to come.

9 I think, you know, you need to explain  
10 what you intend to do.

11 CHAIR RAY: Let's -- region will be up  
12 this afternoon. You will be back this afternoon.  
13 Let's go ahead with your presentation.

14 MR. MILANO: Okay. Okay. Getting back  
15 to this and we have covered some of these things, but  
16 I'll just fly through it hopefully pretty quickly.  
17 Again, as was -- as I started to say, in August of  
18 2007, TVA submitted its letter indicating that they  
19 were going to reactivate the -- that they would like  
20 to reactivate construction of Watts Bar Unit 2. That  
21 was in the form of a 120-day notification that was  
22 required under the Deferred Plan Policy Statement.

23 And the staff -- that -- at that point,  
24 the staff and TVA began a process of independently

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1 identifying/verifying the remaining licensing reviews  
2 that needed to be resolved and I'll talk about that  
3 in a little bit more detail shortly. The result of  
4 that effort was what you are looking at here, the  
5 documentation in Supplement 21 of the -- of NUREG-  
6 0847, the safety evaluation report.

7 And that supplement describes the process  
8 that was used, albeit, that it is relatively terse  
9 and you have to go back to the -- some of the  
10 documents that are referred to in the appendix that's  
11 on the -- that was attached to Supplement 21.

12 Because 30 years has elapsed from the  
13 date of the initial submittal of the operating  
14 license application and because there has been a  
15 lengthy period of inactivity in the staff review  
16 while the facility was in the deferred status, the  
17 staff has requested that TVA update and reaffirm the  
18 application. This was done by TVA in a March 4<sup>th</sup>  
19 application update this year.

20 With that, that concludes the background  
21 information that I was planning to present. And  
22 barring any other questions, I can go right into a  
23 little bit more detail about Supplement 21 itself.

24 CHAIR RAY: Yes, please.

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1 MR. MILANO: Um-hum. Okay. I'm going to  
2 progress through here and if this is a little bit too  
3 much detail or it isn't enough, please, stop me as  
4 you have been doing.

5 Again, in the background section I  
6 referred to the fact that after TVA came in with its-  
7 - you know, notifying us of its intent to -- or its  
8 review with the hopes of coming in and requesting a  
9 restart of the facility, the Commission issued  
10 guidance to the staff in the form of an SRM in July  
11 of 2007. And this Staff Requirements Memorandum  
12 SECY-07-0096 provided the basic considerations that  
13 the staff was to do if TVA should come in and  
14 formally request a restart.

15 Foremost, the Commission directed that  
16 the staff use the Unit 1 current licensing basis as  
17 the reference for licensing Unit 2. This approach  
18 maintains the fidelity of the design between the two  
19 units and ultimately will allow operator licensing on  
20 both units.

21 In addition, the Commission directed the  
22 staff was to review any Unit 1 exemptions, relief  
23 requests or other actions to determine whether the  
24 same allowance was appropriate for inclusion in the

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1 design of Unit 2. The Commission also noted that  
2 significant changes to the licensing approach would  
3 be allowed where NRC has backfit that rule would be  
4 met or is necessary to support dual-unit operation.

5 The Commission encouraged the  
6 incorporation of updated standards for Unit 2 where  
7 it wouldn't significantly detract from the design and  
8 operational consistency between the two units.

9 CHAIR RAY: How are you affecting that  
10 encouragement?

11 MR. MILANO: That encouragement is being  
12 done, and you will see it in the next portion of the  
13 presentation, but I'll jump ahead a little bit, after  
14 the staff received this guidance, we started looking  
15 at what would be the best means of implementing the  
16 guidance along with the fact that we, you know, have  
17 had this hiatus since 1996 of no new construction  
18 licensing within NRR.

19 So we felt that the best approach would  
20 be to provide a detailed procedure for the staff to  
21 follow. And this is our office instruction, L-I-C 10  
22 -- excuse me, 110, LIC-110. That document brings to  
23 bear in the section that talks about staff  
24 expectations and responsibilities for its review. It

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1 covers this portion. It is incorporated into it.  
2 I'm going to be going into that shortly.

3 Lastly, the staff and TVA were to look at  
4 opportunities to resolve generic issues whether the  
5 unirradiated state of Watts Bar 2 would make it  
6 easier to resolve, at this time, than at Unit 1. And  
7 a couple of examples of that are in the area of GSI-  
8 191, the sump strainer issue.

9 TVA is installing the strainers, you  
10 know, now in the current licensing. Also, the staff  
11 -- while the staff was dealing with that subject with  
12 Unit 1, there was -- they were reviewing issues  
13 related to the fibrous loading that could take place  
14 on the -- even the new strainers. And there was  
15 identified some cable wraps that would, if -- could  
16 be assumed to provide a significant amount of fibrous  
17 material.

18 And what TVA is planning to do is go to a  
19 different, you know, a different cable wrap on those  
20 questionable, you know, sections now rather than wait  
21 until it is fully resolved for Unit 1.

22 And also, with regard to the bottom  
23 mounted nozzle inspections, when we were reviewing  
24 TVA's response to the generic communications on that

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1 subject, we had dialogue with TVA wherein we  
2 questioned whether or not they were going to redesign  
3 the bottom head installation package to make it more  
4 or easier for them to drop it and also to provide  
5 better access to -- for visual inspection of the  
6 bottom mounted nozzles.

7 So we are, indeed, looking at these  
8 issues and have been actually implementing these  
9 issues as we go through the reviews, even though we -  
10 - you know, we are not too far into the review  
11 process right now.

12 MEMBER MAYNARD: I would like to  
13 encourage taking even a little bit broader view of  
14 the generic issues. I was going to talk to the  
15 applicant about it when he got up here. It's also an  
16 opportunity for any operational issues that they have  
17 had or other problems in the past with the plant that  
18 may not have risen to a generic issue or a GSI or  
19 something like that, but now is the time to take care  
20 of any of the operating experience issues that would  
21 be hard to resolve once fuel is loaded and radiated.

22 MR. MILANO: Okay. Jumping over and we  
23 have already talked a little bit about this, this is  
24 our office instruction LIC-110. Again, to restate

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1 because of the long period of time since the  
2 licensing of Unit 1, which of course was the last  
3 plant to be licensed under Part 50 of the  
4 regulations, NRR management determined that it needed  
5 to provide its expectations for accomplishment of the  
6 operating license review for Unit 2.

7 In addition, the Commission guidance  
8 needed to be captured in a working level procedure  
9 for the staff to follow. And because of that, the  
10 Director of NRR decided that, at the time, Mr. Dyer,  
11 the best vehicle to accomplish these objectives was  
12 to issue a new NRC -- excuse me, NRR office  
13 instruction. Thus, office instruction LIC-110 was  
14 developed as the tool to bring together the overall  
15 management and oversight of the operating license  
16 review project.

17 And as you can see by this -- down this  
18 slide, these are the areas, the basic areas. There  
19 is a lot more information in it and I believe I have  
20 already provided a copy of the office instruction to  
21 Ms. Banerjee earlier. And if you would like -- if  
22 you want to go into any of these things, we can go  
23 through it.

24 In terms of this office instruction

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1 compared to a lot of other ones, this one does --  
2 because of the fact that the operating license review  
3 is -- goes beyond NRR, there is aspects of security  
4 and EP that are handled in NSIR. There is aspects of  
5 the Part 70 licensing for fuel receipt and stuff that  
6 NMSS will be doing.

7 We attempted to capture all of that in  
8 this office instruction, albeit, that how they -- how  
9 those staffs do their review are handled by their own  
10 instructions, but we do bring out these points in  
11 here. So it's a besides giving a detailed direction  
12 to NRR, it also helps the NRR management to  
13 understand how all these other issues are being  
14 captured in the overall progression of licensing.

15 And it also talks about, you know, future  
16 reviews that -- as we are doing here with the ACRS  
17 staff and it also, you know, talks to some extent the  
18 possibility of ASLB hearings and stuff like that.

19 CHAIR RAY: Okay. Now, it includes  
20 setting -- it includes defining, I'll call it,  
21 something called the Watts Bar Unit 2 Reactivation  
22 Assessment Group?

23 MR. MILANO: Yes.

24 CHAIR RAY: And it says the specific

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1 charter for this group, including organization  
2 reporting responsibilities, will be established prior  
3 to its implementation. Has that occurred?

4 MR. MILANO: No, it has not. We are  
5 still in the development of the charter itself.

6 CHAIR RAY: When will it occur?

7 MR. MILANO: It will occur probably some  
8 time later this summer. That's our expectation for  
9 it.

10 CHAIR RAY: Well, it would seem if it's  
11 needed and it appears it would be a wise thing to do,  
12 that there is stuff going on now that would benefit  
13 from --

14 MR. MILANO: Yes, we agree with you.

15 MR. RAGHAVAN: This is Raghavan. I just  
16 want to tell you I was also involved in the Browns  
17 Ferry licensing transfer to Unit 1 licensing. And  
18 there were a lot of lessons learned as part of the  
19 branch for licensing. And we had this, what we  
20 called, Regulatory Oversight Panel and that's the  
21 type of thing that we would like to do in the Watts  
22 Bar. And I have the draft of the -- how the  
23 Regulatory Assessment Group is going to look like.

24 But because there were not that many

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1 activities going on in the assessment part of it and  
2 because we wanted to establish the regulatory  
3 framework for it as to basically the way we wanted to  
4 start it, that is where we have not gone into the  
5 Regulatory Assessment Group Charter, as I said. But  
6 as Pat pointed out, it is going to come very shortly.

7 CHAIR RAY: Well, okay. That understood,  
8 I would say that that group probably represents a lot  
9 of what Members of the ACRS would be interested in  
10 how they are carrying out and what their functions  
11 are. And so again, if you ask the question of the  
12 ACRS, at this point, are we starting at the right  
13 spot or however you want to frame the question, my  
14 guess is that that might be a useful thing for us to  
15 consider in answering that question.

16 Go ahead.

17 MR. MILANO: When we issue the charter,  
18 we will make sure that a copy of it is sent over to  
19 you. Could you go back to the last one?

20 MEMBER BONACA: I had a question. As you  
21 -- as they proceed with this start/activity, are they  
22 expanding moving personnel from Unit 1 to Unit 2 or  
23 are they simply creating a separate organization?

24 MR. MILANO: No, there is a separate

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1 organization for Unit 2. It's under the direction of  
2 a separate senior vice president, Mr. Bajestani and  
3 separate from the senior vice -- or excuse me,  
4 separate from the vice president that handles,  
5 currently handles, Unit 1, the station itself, Mr.  
6 Skaggs. So and also the engineering is separate.  
7 You know, all those programs are separate.

8 And similarly, the Region II inspection  
9 staff we have got a separate resident inspector  
10 office that is manned. And you know, there, of  
11 course, is going to be dialogue between the two  
12 units, especially in light of if things need to be  
13 changed on Unit 1, such that the Unit 1's licensing  
14 basis changes, you know, those need to be reflected  
15 in Unit 2. So we have this dialogue. You can't  
16 separate the two totally.

17 CHAIR RAY: You wouldn't want to.

18 MR. MILANO: Okay. No. Also, what I  
19 would like to mention, too, is the Watts Bar Project  
20 along with fire protection and a couple other little,  
21 lesser things are also being managed within NRR under  
22 the Enterprise Project Management Program. And I'm  
23 going to talk to that a little bit later in later  
24 discussions.

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1           However, to mention it now, we have  
2 loaded all of the staff review effort currently into  
3 it and we planned also to load in these other tasks  
4 that are separate from the review itself, hearings,  
5 meetings, meetings with ACRS, with the Commission and  
6 stuff, so that this is a -- the schedule is a  
7 complete history of all the activities that it took  
8 from, you know, the start of this reactivation of  
9 licensing to hopefully, ultimately issuing the  
10 operating license.

11           Okay.     Next slide.     Okay.     As I  
12 previously stated, you know, a significant amount of  
13 the review of Watts Bar was accomplished during the  
14 review when both units were being considered. The  
15 original SER was issued in 1982 and included a number  
16 of issues that remained open for further staff  
17 resolution.     These were done in a series of  
18 supplements to the SER.

19           Again, as Mr. Raghavan indicated earlier,  
20 Supplements 1 through 4 considered both Units 1 and  
21 2. Supplements 5 through 20 reflected mostly Unit 1.

22     However, there were issues such as with common  
23 systems or overall site programs and stuff like that  
24 that, you know, it was not appropriate to look at it

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1 just on -- as a Unit 1 issue. And both -- it was  
2 considered for both units. And finally, Supplement  
3 21 is the baseline for the remaining scope of review.

4 As you can see by this time line of  
5 activities that took place to establish the  
6 regulatory framework, it entailed a significant level  
7 of effort and required evaluation and input by a wide  
8 scope of the NRR staff, including other offices, as I  
9 mentioned, and Region II.

10 TVA and the staff independently assessed  
11 the scope of topics that remained open for  
12 resolution. As captured in LIC-110, the licensing  
13 project management staff evaluated and attempted to  
14 correlate the staff input with that provided by TVA  
15 for the safety evaluation report, topics, generic  
16 communications and the corrective action and special  
17 programs.

18 After resolving the differences between  
19 TVA's assessment and NRR's assessment, the staff  
20 reached its conclusions in each of these areas and a  
21 letter transmitting the final assessment results were  
22 issued. Because of the staff's review was --  
23 encompassed the original and 20 supplements, the  
24 staff felt that there needed to be a single document

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1 that captured and delineated the current status of  
2 the Watts Bar 2 review and that is again Supplement  
3 21.

4 Supplement 21 documents the review of the  
5 three major subject areas which form the basis of the  
6 staff's ultimate decision on Unit 2. In general, the  
7 staff's finding in these topic areas will cover the  
8 processes to be performed, the operating procedures,  
9 the facility and equipment, the use of the facility  
10 and technical specifications and will determine  
11 whether they collectively provide reasonable  
12 assurance that the applicant will comply with the  
13 regulations in Parts 20 and 50 and that the health  
14 and safety of the public will not be endangered.

15 To give you an idea of the scope of work  
16 that went in the assessment, the NRC assessed 288  
17 topics which comprised the scope of the safety  
18 evaluation report excluding introduction and  
19 administrative sections and determined that the NRC  
20 had previously approved about 163 topics. The staff  
21 concluded that TVA should make submittals for the 125  
22 topics that remained open.

23 Similarly, the staff reviewed about 1,000  
24 pieces of generic communications that have been

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1 issued since 1973, the date of the original operating  
2 license, such as information, notices, bullets,  
3 circulars, generic letters, etcetera to determine  
4 whether the NRC had previously -- excuse me, had  
5 previously reviewed and resolved the topics addressed  
6 in these for Unit 2. Excuse me, it's whether TVA and  
7 whether we agree that they have been resolved for  
8 Unit 2.

9 Based on its review, the staff determined  
10 that most of the generic communications have been  
11 previously reviewed and resolved. Some were  
12 determined to be not applicable, you know, as you  
13 know, boiling water reactors, etcetera, or other  
14 plant designs, other than Westinghouse.

15 About 60 generic communication issues  
16 were considered open for resolution and/or  
17 inspection. And TVA will need to provide additional  
18 submittals for these identified issues. As I noted  
19 earlier, also the TVA developed 18 corrective action  
20 programs and 11 special programs at Watts Bar to  
21 correct the construction deficiencies that were  
22 identified starting in 1985.

23 These programs were implemented at Unit  
24 1. For the most part, TVA's plans to implement the

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1 approach and actions were used to resolve the items  
2 for Unit 1 without modification. And as I previously  
3 indicated, the staff is currently evaluating the  
4 acceptability of these approaches on Unit 1 and also  
5 looking at certain of the CAPs or some --

6 CHAIR RAY: Wait. You said acceptability  
7 of these approaches on Unit 1, did you?

8 MR. MILANO: Excuse me, on Unit 2. The  
9 Unit 1 approaches for Unit 2. Okay. And so -- and  
10 again, basically, it comes down to, as we indicated  
11 before, there are three of them or three areas where  
12 we think where TVA is not going to do exactly what  
13 they did on Unit 1 to implement it on Unit 2. The  
14 rest of them it's a matter of are they being  
15 successfully implemented or will they be successfully  
16 implemented on Unit 2?

17 MEMBER BROWN: So you have concluded 26  
18 of them were okay?

19 MR. MILANO: We concluded from a program  
20 review standpoint that 26 of them are okay for  
21 implementation on Unit 2. They have not been  
22 implemented on Unit 2 and that will be reviewed.

23 MEMBER BROWN: Um-hum.

24 CHAIR RAY: Okay.

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1 MR. MILANO: With that, that completes my  
2 discussion on the current starting basis for the  
3 licensing review.

4 CHAIR RAY: Okay. Well, we have got  
5 quite a lot of time here now, according to the  
6 agenda, and so matters that we might otherwise have  
7 deferred, any that the Members have, that they would  
8 like to discuss, we have got ample time to do so.

9 MEMBER BROWN: Can we just bring up a  
10 couple of generic type comments?

11 CHAIR RAY: As long as they apply to Unit  
12 2 operating license.

13 MEMBER BROWN: Pardon?

14 CHAIR RAY: As long as they apply to the  
15 Unit 2 operating license, yes.

16 MEMBER BROWN: Oh. You talked about  
17 electrical equipment.

18 MEMBER SIEBER: Or at least the ACRS.

19 MEMBER BROWN: Stuff about nature,  
20 generally electrical equipment like to be operated,  
21 not sit around for 25 years.

22 MR. MILANO: Correct.

23 MEMBER BROWN: Bearings in electrical  
24 equipment, you can't inspect for that. It's a matter

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1 of assessing whether you need refurbishment of them  
2 or not. I guess my question is how -- you talked  
3 about this. Somebody mentioned that a minute ago  
4 relative to electrical equipment and a couple of  
5 other areas.

6 MEMBER SIEBER: Well, mechanical  
7 equipment has the same issues.

8 MEMBER BROWN: Has the same issues,  
9 right, pumps, etcetera. Is there going to be any --  
10 are we going to have to paw through, you know, a  
11 thousand pages of stuff to figure out, you know, how  
12 these are going to be assessed or is there going to  
13 be a summary assessment of some kind that says how it  
14 is determined whether these major components, major  
15 electrical units are really okay, even though they  
16 have been sitting there for some number of years or  
17 how they have been maintained?

18 Obviously, the plants are not filled, so  
19 you don't run the motors. More than likely they are  
20 just sitting there cooking eggs or something, I  
21 guess. So I mean, are you all going to be doing  
22 that, such that we will have that visible in terms of  
23 how those QA problems and how they have been  
24 maintained and then how they are going to be

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1 transitioned to "an operational status?" That's just  
2 one specific area of a number of these whole things  
3 of stuff sitting around for 30 years, because that's  
4 how long it has been. It has been a long time.

5 MR. MILANO: Right. And before I turn it  
6 over to Mr. Raghavan and Mr. Haag to give you some,  
7 you know, further information on that, from the NRC -  
8 - NRR standpoint, we have made a number of trips to  
9 the station and observed things that are already  
10 being done in this area with regard -- and TVA will  
11 probably go through this in more detail with regard  
12 to what they are doing in starting refurbishment.

13 You know, they are completely redoing the  
14 main turbine and the main generator. They are  
15 rewinding or having the austere windings rewound.  
16 And they have contracted with Siemens to do a, you  
17 know, complete refurbishment of the main turbine and  
18 generator and stuff. And those are -- and that is  
19 ongoing. So we have seen that.

20 We have also observed other, you know,  
21 turbine related components. The main feed pump  
22 turbines were broken down and being refurbished and  
23 other things. So from the standpoint of NRR, we have  
24 observed the fact that that is currently ongoing.

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1 However, that is going to be a function of the Region  
2 II Inspection Program to assess, you know, how TVA is  
3 bringing that equipment back into a state that fully  
4 meets the -- its -- their functions and comes into  
5 the applicable code compliance again.

6 And with that, I will turn it over to Mr.  
7 Raghavan who wants to make a statement.

8 MR. RAGHAVAN: Yeah, this --

9 MEMBER BROWN: Well, let me amplify just  
10 a second before you do that. Is that -- okay. You  
11 picked out one of them and said what they are doing.

12 And I guess my interest is is there 100 components  
13 maybe or, you know, major electrical and mechanical  
14 components, reactor coolant pumps.

15 MR. MILANO: Right.

16 MEMBER BROWN: All kinds of stuff that  
17 has to be addressed.

18 MR. RAGHAVAN: Yeah.

19 MEMBER BROWN: And is there some way to  
20 say here -- does TVA provide it or have you all asked  
21 for a listing of all these major components and  
22 systems with a specific assessment that says hey,  
23 this is where we are. This is where we're going.  
24 This is what we're going to do. And this is what the

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1 end result testing is going to be. Something that  
2 says we are going to bring all this stuff forward  
3 from a 25 year layoff.

4 MEMBER SIEBER: Yes.

5 MR. GIITTER: Mr. Raghavan can speak to  
6 that.

7 MR. RAGHAVAN: Yeah. This is Raghavan  
8 again. In establishing the regulatory framework,  
9 this is one of the big questions that we have a  
10 decision block that we are putting together. A logic  
11 chart of how do we license the plant. One of the  
12 major questions that we asked ourselves is the --  
13 what frequents the aging phenomenon?

14 Several of these equipment have been idle  
15 for the last so many years, 20 years, 25 years,  
16 whatever it may be. And what we wanted to do is to  
17 make sure and TVA has -- we have requested TVA to  
18 submit a program that why that this, you know,  
19 program, these components whether it is electrical,  
20 mechanical, whatever this component, even the  
21 structures as to why they are okay for the next 40  
22 years to come from.

23 So what we call that is simply we call it  
24 as an aging phenomenon. That's a big block that we

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1 have in our regulatory framework. And I would like  
2 TVA to address that part of it as to what they want  
3 to do, how they are doing and what they have done.  
4 But that's an issue that we will be looking at.

5 And of course, the inspection program  
6 also should address those types of things. The issue  
7 that you brought about about this turbine and all  
8 this is one of several issues.

9 MEMBER BROWN: No, I understand that.  
10 It's just, you know, Mr. Ray referred a minute ago.  
11 I mean, we've got all the stuff to get your hands  
12 around.

13 MR. RAGHAVAN: Yes.

14 MEMBER BROWN: And yet, we are sitting  
15 here and we are going to be asked to have an idea of  
16 an assessment. You know, hey, what do we think about  
17 it and somewhere this has got to be brought together  
18 in a manner in which it is covered.

19 MR. RAGHAVAN: What I think --

20 MEMBER SIEBER: As we agreed about an  
21 hour ago, we are looking at this in two different  
22 viewpoints.

23 MEMBER BROWN: Well, this was open. We  
24 had some time.

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1                   MEMBER SIEBER:     One of them is the  
2     licensing of the plant.   The other one is to figure  
3     out what to do with the facility, how to refurbish  
4     and continue construction.   In my mind, I keep those  
5     separate.   On the other hand, all the points you are  
6     making are valid about, you know, having done this  
7     with another plant, restarted construction.   I know a  
8     little bit about what has to be done.

9                   And but in my own mind, I make the  
10    distinction between the staff work and reviewing the  
11    SAR to determine whether the plant is licensable as  
12    opposed to what do I need to do with the physical  
13    plant in order to make sure that it is satisfactory  
14    to finish construction.

15                  MR. MILANO:   I had separated that.

16                  MEMBER SIEBER:   Okay.

17                  MR. MILANO:   It's just if we hadn't had  
18    45 minutes, you know, left over, I would have  
19    deferred this until later.   Harold?   I'm sorry.

20                  CHAIR RAY:   That's all right.

21                  MR. RAGHAVAN:   This -- I'm sorry.

22                  CHAIR RAY:   Go ahead.

23                  MR. RAGHAVAN:   Yeah.   Raghavan again.  
24    Perhaps we should have started this and I think this

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1 is our fault. We jumped into the details. We  
2 thought telling you what the regulatory footprint is  
3 going to be, how did we want to do this.

4 MEMBER SIEBER: Right.

5 MR. RAGHAVAN: The Step No. 1 is for us  
6 to determine and just say where are we in the  
7 document space? Do we have all the brackets? We  
8 looked at previously the viewed and approved because  
9 the SRM directed us to look at the licensing basis of  
10 Unit 1 as the reference basis for Unit 2. So that's  
11 a collection of documents that we should have done.  
12 That's the Step No. 1.

13 Step No. 2 is to say even though it has  
14 been previously reviewed and approved, do we have a  
15 program in place to determine that they continue to  
16 be remained improved. They continue to remain  
17 validated, that's the second aspect of the program.

18 The third aspect of the program is in the  
19 space of construction and the inspection, which  
20 reason can talk about in detail, but again they would  
21 come up with a baseline and just say do we know, do  
22 we have an inventory of what things have been done  
23 before? What inspection reports have been done?  
24 What do you have in place? And whether the TVA is

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1 ready for going ahead with construction, those types  
2 of assessments. That's the third aspect of it.

3 CHAIR RAY: Well, can I? Let me  
4 interrupt you right there.

5 MR. RAGHAVAN: Yeah.

6 CHAIR RAY: Because I guess that's what  
7 I'm struggling with the most. I have no doubt that  
8 TVA will do what makes good sense when it comes to  
9 rewinding the turbine generator or whatever. That's  
10 a business decision. What I am more interested in is  
11 what are you crediting from the past and not  
12 revalidating now? I think that's what -- I think  
13 that's the question you are asking us to talk about.

14 MEMBER SIEBER: Right.

15 CHAIR RAY: As the ACRS. Should you back  
16 up further than you are? Along a litany of all these  
17 things that are being done, again, I don't want to  
18 diminish the need to say we're doing lots of things.

19 But what are you not doing that you would do for a  
20 new plant starting from scratch? And that's what I -  
21 - for example, I used the example of the Quality  
22 Assurance Program. The only thing that is said about  
23 the Quality Assurance Program in the stuff that I was  
24 given has to do with the N-stamp, period.

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1           And I can't -- maybe I could figure it  
2 out and I certainly welcome Jack's volunteering to do  
3 this, but going through inspection reports trying to  
4 figure out what it is that has been done to validate  
5 what exists. But that's the issue that we are, I  
6 think, most wanting to find out about out. Trying to  
7 figure out what is it that you are accepting without  
8 revalidating from the past?

9           Do you have a succinct way of saying --  
10 answering that question?

11           MR. RAGHAVAN: Let me attempt it.  
12 Raghavan again. I think I perfectly understand the  
13 question. It's a valid question. In my -- to the  
14 best of my knowledge, please, jump in anybody else,  
15 we are not excluding anything from our review. Not  
16 excluding anything at all.

17           What we are -- so far established is what  
18 does the paper show? Has it been previously reviewed  
19 and approved? And now it has to be validated that  
20 what has been reviewed and approved still exists  
21 there as we assume in our safety evaluation.

22           CHAIR RAY: Well, okay.

23           MR. RAGHAVAN: That inspection is going  
24 to take place.

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1 CHAIR RAY: But maybe --

2 MR. RAGHAVAN: But --

3 CHAIR RAY: Excuse me. Maybe this goes  
4 mostly to the region. I don't know. Apparently it  
5 does. But whether or not -- basically, what is  
6 implicit in what you are saying is if it was written  
7 down 20 years ago and accepted at that time, then  
8 that makes it okay.

9 MR. RAGHAVAN: Not by -- it has not been  
10 since or for any other cases that came in.

11 CHAIR RAY: Well, okay. But  
12 nevertheless, there was a lot done after the mid-1980  
13 period to carry forward and complete Unit 1. What  
14 has been said of most value here this morning, to me,  
15 is you are going to do this or TVA will do the same  
16 things for Unit 2, with a few exceptions, that were  
17 done for Unit 1 to get it from where it was in the  
18 mid-1980s to where it is today or where it was when  
19 it received its operating license.

20 And so I think that may be the answer to  
21 the question that I'm asking. Because what it says  
22 is we are not going to assume anything about Unit 2  
23 more than what we assumed about Unit 1 when we  
24 implemented the recovery program and ultimately took

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1 it to the point of entering operation. Am I making  
2 myself clear?

3 MR. RAGHAVAN: Yes, sir.

4 CHAIR RAY: What I'm concerned about  
5 would be something that I implied from some of what I  
6 read that would say the contrary, no, if it was dealt  
7 with in the past, we validate that that occurred and  
8 I heard I'm speaking mostly, I think, about  
9 programmatic implementation issues, not the  
10 regulatory footprint, which you are talking about.

11 MR. RAGHAVAN: Right.

12 CHAIR RAY: Then we will accept that.  
13 Well, I don't think that was what happened to Unit 1.  
14 Why should it be what happens to Unit 2? So again,  
15 probably we are talking more about the regional  
16 responsibilities here than we are the regulatory  
17 bookkeeping exercise that has to be gone through, but  
18 isn't mainly what we are concerned about. The  
19 Commission has spoken. The licensing basis for Unit  
20 1 is going to be the licensing basis for Unit 2. And  
21 that's the end of that issue.

22 We don't need to rehash that over and  
23 over again. But what is -- I'm groping with anyway,  
24 is the question that I just posed, which is well,

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1 what are you not doing at Unit 2, if anything, and  
2 taking at face value based on the fact that it was  
3 documented 25 years ago?

4 MR. HAAG: This is Bob Haag again. From  
5 the inspector standpoint, we're going to complete the  
6 construction inspection program for Unit 2. You  
7 know, that -- and that's divorced from Unit 1. Unit  
8 1 construction, construction programs, had already  
9 been done. We're going to complete Unit 2  
10 construction inspection program. Plus, we're going  
11 to address these other issues that the construction  
12 program never does address.

13 This, you know, idle equipment for 25  
14 years. There is nothing in the construction  
15 inspection program that would point us to review the  
16 applicant's efforts to do that. But we recognize  
17 that clearly is an important aspect. The CAPs and  
18 SPs, we're going to be inspecting those. There is  
19 temporary instructions that dictate we inspect and  
20 close out all 29 CAPs and SPs, so we will be doing  
21 that.

22 As far as what we have credited  
23 previously, I'll talk a little about our  
24 reconstitution efforts where we went back and we

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1 looked at the inspection record for Unit 2. And  
2 looked at how the inspection objectives of the  
3 individual inspection procedures were either  
4 accomplished as far as sample size or where there is  
5 opportunities and areas that we still need to  
6 inspect.

7 And I'll give you our justification right  
8 off, our position --

9 CHAIR RAY: Okay.

10 MR. HAAG: -- of how we want to go  
11 forward with that.

12 CHAIR RAY: All right. Well, that's more  
13 in line with what I'm --

14 MR. HAAG: Okay.

15 CHAIR RAY: -- asking about here.

16 MEMBER ABDEL-KHALIK: Let me just follow-  
17 up on the comments you made about the CAPs and SPs.  
18 The initial condition for implementation of those  
19 programs for Unit 2 is now.

20 MR. HAAG: Yes.

21 MEMBER ABDEL-KHALIK: And that is totally  
22 different than the initial condition when these  
23 programs were implemented on Unit 1. And the issue,  
24 in my mind, is how do you make the leap that these

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1 programs, despite the differences in the initial  
2 conditions at which these programs will be  
3 implemented, that these programs are still  
4 appropriate?

5 MR. HAAG: The staff has reviewed TVA's  
6 programs on what they want to do. And the staff will  
7 accept whether that program, if implemented  
8 adequately, addresses whatever the historical issue  
9 is. And our job will be in the region to make sure  
10 they are properly implemented as far as, you know,  
11 all the actions TVA needs to take.

12 MEMBER ABDEL-KHALIK: But being able to  
13 make that determination, the staff has to know  
14 exactly what this initial condition is. Do they have  
15 that information at this time?

16 MR. HAAG: We understand historic. I  
17 mean, you've got to go back and take a look CAPs and  
18 SPs were developed back in the late '80s to address  
19 the programmatic problems. And those programmatic  
20 problems existed at the station for Unit 1 and Unit  
21 2, the work that was being done at the time, problems  
22 with what quality of welds, problems with support,  
23 things like that. So those programs were implemented  
24 to address those issues.

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1           The Unit 2 issues, as far as we're  
2 concerned, still exist. I mean, because very little  
3 work has been done on that. So therefore, TVA needs  
4 to take these corrective action programs and address  
5 whether it is weld size quality, whether it is  
6 adequacy of calculations, adequacy of other areas.  
7 So we are going to make sure that, you know, they  
8 have gone -- if they described those programs and  
9 what they are going to do, we're going to make sure  
10 that they have done them properly. Does that kind of  
11 address what you are looking at?

12           MEMBER ABDEL-KHALIK: No, not really, not  
13 really.

14           CHAIR RAY: May I try?

15           MEMBER ABDEL-KHALIK: Yes.

16           CHAIR RAY: Just to interrupt for a  
17 second, Said.

18           MEMBER ABDEL-KHALIK: Sure, of course.

19           CHAIR RAY: I think he said it very well  
20 and better than I did about the difference in the  
21 initial conditions in Unit 2 today as compared with  
22 Unit 1 at the time the corrective actions were  
23 implemented for Unit 1. And it may be an issue that  
24 is just bubbling in our minds and will ultimately

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1 reconcile or resolve.

2 But that is a difference. And he said  
3 it, as I say, better than I did. And we're wondering  
4 how you accommodate that difference in initial  
5 conditions? Is a corrective action program that was  
6 implemented successfully in Unit 1 going to be  
7 equally successful at Unit 2 implemented now a  
8 quarter century almost later? I don't know. It's --  
9 maybe it's a philosophical question as Rag said. But  
10 I think that that is one issue that we are talking  
11 about.

12 One might say well, I need to do some  
13 more validation, which kind of goes to Mario's  
14 question of lay-up. Do I need to revalidate what --  
15 something that I didn't have to do for Unit 1,  
16 because it was an immediate response to a problem  
17 that existed at that time? Is that problem now  
18 somehow different, because of the passage of time?  
19 It may sound like a strange question, but --

20 MR. HAAG: I would say --

21 CHAIR RAY: -- it is what we are trying  
22 to think about.

23 MR. HAAG: And from my perspective, I'm  
24 not sure the CAPs and SPs will deal with this issue

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1 of aging or, you know, a lab program has not been in  
2 place. But that's not to say it won't be addressed.

3 CHAIR RAY: Okay.

4 MR. HAAG: The Refurbishment Program that  
5 TVA will describe to you, you know, our expectation  
6 is it will address, you know, equipment motors  
7 haven't been running, breakers have been sitting idle  
8 for a long period of time, never been operating, out  
9 there for 25 years just in their existing state. You  
10 know, those have to be addressed. CAPs and SPs, my  
11 perspective is, no, they are going to address the  
12 historical issues that occurred, problems that  
13 occurred back in the '80s.

14 CHAIR RAY: But you know the thing that  
15 isn't going to be addressed, I truly believe that  
16 every motor operated valve and pump and so on is  
17 going to be thoroughly exercised, you know, during  
18 the start-up program. It is going to be okay.

19 It's the design basis accident capability  
20 that is maybe in question. For example, now, I am  
21 really dealing with apples and oranges here a little  
22 bit, because on the one hand I'm talking about  
23 different initial conditions and on the other hand  
24 I'm talking about well, given all the things we are

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1 going to do to validate the plant, is that going to  
2 be enough or is there something different that has  
3 been created or caused by this quite unusual set of  
4 circumstances that we are looking at here?

5 I don't have anything tangible other than  
6 that I realize that it is the question that I think  
7 we need to address ourselves to. Are we missing  
8 something? That's why you are here, right?

9 MR. HAAG: Yeah.

10 CHAIR RAY: Otherwise, we wouldn't even  
11 be having this meeting at this time. And we are  
12 trying to assess whether or not, at least in my case,  
13 are you going to have a refurbishment program that is  
14 going to rewind the turbine generator, because who  
15 knows your-- you know, if it needs to be done, it  
16 will get done. And I don't think we are really  
17 concerned about that.

18 But the question of the safeguards and  
19 the conditions that we aren't going to test during  
20 the Start-up Test Program are we able to be satisfied  
21 with regard to those, is where we are groping.

22 MEMBER BROWN: Perhaps that --

23 CHAIR RAY: Okay. I'm done.

24 MEMBER BROWN: Isn't that the question

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1       though, the licensing basis?     I mean, from the  
2       safeguard standpoint?

3               CHAIR RAY:   No, no, I think that the  
4       licensing basis exists as, you know, a construct that  
5       isn't really affected by the passage of time.  It is  
6       really the -- something that we would miss in an  
7       ordinary restart program that we ought to be paying  
8       attention to.  And one of them would be a legacy,  
9       Charlie, of the past that we didn't properly address.

10              MEMBER BROWN:  Well, no, that's what I  
11       was getting at.

12              CHAIR RAY:  Because it's so damned hard  
13       to figure out well, what did they do for Unit 1 for  
14       sure.

15              MEMBER BROWN:  Yeah.

16              CHAIR RAY:  I mean, that's a long time  
17       ago.  And to say well, I'm going to do exactly the  
18       same thing on Unit 2 that I did on Unit 1, I mean, I  
19       just have a lot of skepticism about that, because I  
20       don't -- you know, everybody was engaged at that time  
21       and they did things that I'm not sure we can figure  
22       out today reliably.

23              MEMBER BROWN:  Can I --

24              CHAIR RAY:  And say I'm absolutely going

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1 to do on Unit 2 what I did on Unit 1.

2 MEMBER SIEBER: The only way you can do  
3 that is if the records exist.

4 CHAIR RAY: Right.

5 MEMBER SIEBER: And in some plants they  
6 exist and other plants --

7 CHAIR RAY: That's right.

8 MEMBER SIEBER: -- not all of them exist.  
9 So you may have to do some things over just to be  
10 able to re-prove --

11 CHAIR RAY: Yeah.

12 MEMBER SIEBER: -- that the situation you  
13 are addressing is properly addressed.

14 CHAIR RAY: And it won't -- that doesn't  
15 go to the question of whether or not the bearings  
16 have to be replaced in some motor.

17 MEMBER SIEBER: No, you deal with that  
18 otherwise.

19 CHAIR RAY: Yeah. I mean, that's just  
20 part of the job of returning the plant to safety.

21 MEMBER SIEBER: Well, you don't want  
22 something that -- in that stale-point failing later  
23 because you didn't -- you couldn't do it afterwards.

24 CHAIR RAY: I don't mean --

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1                   MEMBER SIEBER:     You've got to have a  
2 sacrifice point.

3                   CHAIR RAY:       -- to dismiss that as  
4 something that needs to be done.   That's not my  
5 point.   My point really is I'm more thinking about  
6 stuff that won't be revealed by a start-up program.

7                   MR. RAGHAVAN:     Raghavan again.     The  
8 question I have -- I appreciate the questions.   Let  
9 me give you a particular example.   Where we exactly  
10 did that initial conditions and I'm not an electrical  
11 engineer, so I have a backup here to be able to  
12 explain it to you.   In the cable issues, we exactly -  
13 -       one of the programs is the cable and the  
14 electrical program and the corrective action program.

15                  I want to explain that one particular  
16 incident where we looked at the cable issue as being  
17 different from Unit 1, because the initial conditions  
18 were different.   So perhaps you can --

19                  CHAIR RAY:    Yeah, sure, go ahead.   We've  
20 got time.

21                  MR. McCONNELL:   Good morning, everybody.  
22       My name is Matthew McConnell.     I'm with the  
23 Electrical Engineering Branch in Division Engineering  
24 and I have been part of the team of electrical

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1 engineers reviewing the cable issues CAP. One of the  
2 issues that we took up was exactly the point of maybe  
3 rebaselining the fact that the cables have been  
4 installed in their place for 25 years and have  
5 essentially been sitting there.

6 And in that sense, we have asked numerous  
7 questions in the area to resolve that issue to find  
8 out what the actual design qualification is today.  
9 And can you show that qualification of the equipment,  
10 in this case, cables can still last, say 40 years of  
11 the plant? And that's I think a very small example  
12 of where we are at as far as reviewing the electrical  
13 components as a whole. But it is an example that we  
14 want to make sure that we understand the importance  
15 of the cable and that we have the confidence that the  
16 cables are going to be able to perform their design  
17 function in accordance with their licensing basis,  
18 which is in accordance with the Watts Bar Nuclear 1.

19 But we also recognize that there are  
20 newer standards, that there are newer codes out there  
21 that, I will say, enhance from what they were 25  
22 years ago. So we are trying to address some of the  
23 conservatisms that are in place in today's standards,  
24 in today's knowledge to address the fact that the

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1 conditions are not the same as they were when Unit 1  
2 was licensed or when they have implemented their  
3 license.

4 CHAIR RAY: Let's take cable supports, if  
5 that was a deficient are, it has remained deficient  
6 on Unit 2. Does that have any long-term effect on  
7 it?

8 MR. McCONNELL: Well, that's still part  
9 of our process trying to determine if that is.  
10 That's something that, as far as cable supports go,  
11 we're trying to -- you know, they, TVA, had submitted  
12 a corrective action program for that to assess that  
13 to assure that the actual -- the as-found condition  
14 as they are today if they were subjected to any kind  
15 of harsh environment or -- I don't want to say harsh  
16 environment, any environment that may possibly  
17 degrade their condition.

18 And as part of their program, they had  
19 said, essentially, they were going to follow-up what  
20 they did with Unit 1. And from my understanding and  
21 as far as cable supports go, I'm trying to recollect  
22 that --

23 MR. MILANO: Well, can I add one thing?  
24 And just to reiterate something that the Electrical

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1 Branch had looked at, they had some issues, too, with  
2 vertically supported cables. And at the -- to answer  
3 your question earlier about have conditions changed,  
4 you know, they implemented the added supports on the  
5 vertically supported cables early on in Unit 1, but  
6 they hadn't done it, you know, for 25 years.

7 The Electrical Branch asked questions as  
8 to whether or not the fact that they were  
9 inadequately supported and had been hanging there for  
10 this length of time could that have damaged the  
11 insulation in the jacket and stuff over this period  
12 of time? And we have -- that was one of the issues  
13 TVA has, you know, provided further information in  
14 that area as to why they feel that it is -- that the  
15 cables have not degraded and that just installing the  
16 supports now is all that is necessary.

17 And I can't speak for the Electrical  
18 Branch, because we haven't issued the safety  
19 evaluation in that area yet, but that's one of the  
20 things that we are reviewing.

21 MR. McCONNELL: Yeah, and we had a public  
22 meeting with TVA not too long ago to discuss some of  
23 the open parameters that we kind of associated with  
24 the electrical cable issues and it includes the

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1 supports and such. And so we are still expecting  
2 some information as far as TVA goes in return  
3 officially on the docket, so we can complete our  
4 safety assessment.

5 It has been -- even though we have only,  
6 I think, been reviewing this particular item for  
7 about 8 months now, we have come a long way. We have  
8 asked a significant amount of questions in this one  
9 particular area. And I think, you know, we've done a  
10 significant amount of review to try to understand the  
11 complexity of the situation.

12 I think that based on the results of this  
13 public meeting we had, we have, I guess, a more  
14 positive outlook for the future as far as, you know,  
15 their -- our understanding of how they are going to  
16 submit the responses to our concerns. And that we  
17 really think that there is a path to success as far  
18 as the documentation of the information for  
19 rebaselining or doing something. Maybe it might  
20 entail replacing components or replacing cables. But  
21 all those kind of are coming into one and are going  
22 to be unique based on each configuration.

23 MEMBER BONACA: Okay. Well, that's --  
24 it's a little bit harder for me to really separate

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1 purely the licensing portion from the refurbishing  
2 portion. Because I mean, if you refurbish the plant  
3 for sure that it behaves just like Unit 1, then I  
4 would say I can separate. But there will be other  
5 components probably that will be accepted as these  
6 with the understanding that, for example, take the  
7 fact at issue.

8 You know, you may have to monitor at the  
9 beginning at a different pace or frequency in  
10 different locations to determine there are  
11 differences. If there -- the material, for example,  
12 wasn't replaced, then hopefully you will have some  
13 concern about the ability of it behaving like the one  
14 you have in Unit 1.

15 So with respect, you have a number of  
16 changes in programs, inspection problems and things  
17 of that kind, I don't know how much different the two  
18 plants would be from that perspective.

19 MR. McCONNELL: Well, I guess to kind of  
20 separate out one thing, just when we started our  
21 review understanding that the process was to make  
22 everything following from Watts Bar Unit 1 and as  
23 long as they did that, everything would be okay. We  
24 separated out that thought process. We wanted to

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1 look at it from a totally different objective point  
2 of view where we can say as the plant is now, given  
3 the configuration of the equipment, will -- do we  
4 have the confidence that the equipment can perform  
5 its function?

6 And so we strictly looked at it from  
7 Watts Bar Unit 2 configuration standpoint. So and I  
8 understand your point as far as looking forward for  
9 other components. And I think this kind of detailed  
10 review may be warranted and may be captured and  
11 hopefully -- and I think it will be captured in the  
12 inspection space.

13 CHAIR RAY: John?

14 MEMBER STETKAR: Yeah. A specific  
15 question that might help me to kind of separate the  
16 two things that we have been kind of talking about  
17 here in my own mind. If I look at NUREG-0847 under  
18 corrective action programs, in particular the line  
19 item that says "cable tray and cable supports," I see  
20 a word that says resolved. And what I hear you  
21 saying is that from my perspective in a technical  
22 sense, that issue doesn't seem to be resolved.

23 So I'm trying to understand what that  
24 word really means in this document here.

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1 MR. McCONNELL: Now, the cable supports  
2 themselves, that issue, the way I believe we have  
3 reviewed the aspects of the -- all the details of  
4 that review for the supports and have agreed that  
5 their program is acceptable as it stands today. I  
6 think the more issue I was trying to address is  
7 because there is different caveats as far as not  
8 supporting, cables not being supported, as Pat had  
9 mentioned.

10 Those -- issues like that are still on  
11 the table as far as there are a lot of sub-issues  
12 relating to cable and cable supports. Cables not  
13 being supported, that aspect is still under review.  
14 I don't have, unfortunately, my reference document.

15 MEMBER STETKAR: I think I'm still  
16 confused, because I'm trying to understand in my own  
17 head what this word resolved in this NUREG means.  
18 And I usually read the word resolved as situation is  
19 final. As far as the staff is concerned, that issue  
20 is not on the table as an open technical issue, that  
21 all concerns have been resolved. And I'm not hearing  
22 that, so that's why I'm trying to separate out what  
23 does that resolved -- does that resolved mean that  
24 there are programs in place that you feel confident

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1 if they are fully implemented will solve the problem  
2 or does that mean that the whole issue is actually  
3 resolved?

4 MR. MILANO: If you look -- excuse me.  
5 If you look at the heading for that column, it says  
6 "Program Review Status."

7 MEMBER STETKAR: That's correct.

8 MR. MILANO: That it is only the program  
9 aspect of it. Okay. What we are saying is is that  
10 for the trays and the tray supports what TVA is  
11 proposing to do on Unit 2 and is the same as was done  
12 for Unit 1 and they plan to implement it the same as  
13 Unit 1 and the staff agrees that from a program  
14 standpoint, that that is an acceptable approach.

15 It does not say that that has been  
16 implemented at Unit 2. And that implementation will  
17 be inspected.

18 MR. McCONNELL: Right. And I think  
19 that's -- as far as our review goes, from a  
20 programmatic standpoint, yes, the item is considered  
21 resolved. But what I was, I guess, attempting to say  
22 and I failed to actually get the point across, was  
23 the fact that they may deem that the cable supports  
24 are not adequate and they may have to replace them.

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1 That's something that would be verified later.

2 MEMBER STETKAR: That's implementation of  
3 the program.

4 MR. McCONNELL: Correct, correct.

5 MEMBER STETKAR: Yeah.

6 MR. McCONNELL: Okay.

7 MEMBER SIEBER: Yeah, that's --

8 MEMBER STETKAR: No, no, that helped.  
9 Thanks. You helped.

10 MEMBER SIEBER: You have to understand  
11 also that the program they have today is not the one  
12 that they had when they started construction. And so  
13 what physically exists in Watts Bar 2 may not meet  
14 the standards of the program that the staff says is  
15 okay. That's where the region comes in --

16 CHAIR RAY: Well --

17 MEMBER SIEBER: -- with that issue and  
18 you have to keep those issues separate.

19 CHAIR RAY: We are still struggling with  
20 that is the question that we are trying to address,  
21 okay? And I think at the end of the day it is much  
22 more along the lines that John just pointed out than  
23 it is how to interpret the list status of resolve  
24 versus open. Although, I will confess that there are

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1 some open items in there that would seem to me to be  
2 in the same category from a license basis standpoint  
3 as the one you just mentioned.

4 And I'm not sure why they are open. But  
5 leaving that aside, the real question and I'm not  
6 sure, I'll go back to this reactivation assessment  
7 group. I can't understand why, given where we are  
8 with this now and all that the Electrical Branch has  
9 been doing and so on and all that we will hear that  
10 the region has been doing, on earth isn't that group  
11 that we would crave to talk to, I guess, not in place  
12 or not even have a charter?

13 Because the kind of questions that we are  
14 grappling with are the sort of ones that you would  
15 think that they would address or be thinking about or  
16 something. So it just seems like in terms of what we  
17 have to look at and hear about, it's hard to know  
18 whether or not we can satisfactorily opine unless we  
19 were to find some glaring omission or error here,  
20 because so much of what we really think is important  
21 is in the domain of implementation.

22 And there isn't enough yet on the record,  
23 so to speak, about the implementation that I think  
24 would satisfy our interests. Other questions?

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1 MEMBER BROWN: Excuse me, can I just --

2 CHAIR RAY: Yeah. Charlie, let me go  
3 ahead and --

4 MEMBER BROWN: Okay.

5 CHAIR RAY: -- let him respond and then  
6 I'll be back to you.

7 MR. MILANO: I would like to just respond  
8 to something that Mr. Bonaca said. With regard to  
9 the physical condition of the facility, TVA has to  
10 provide adequate assurance to us in terms of what it  
11 has done and how it is documented. And the region  
12 has to likewise do in its inspection, you know, at  
13 the completion of construction, they have to make it  
14 clear to us that the plant has been built,  
15 constructed in accordance with the design of the  
16 facility.

17 And things like you said, if they should  
18 use as is or some other type of repair that doesn't  
19 fully meet what we approved in terms of the program  
20 and the basic code standards or whatever, then that  
21 has to be evaluated and has to be documented why a  
22 use as is except -- is acceptable when the thing --  
23 when that component was supposed to meet certain  
24 codes and standards. That stuff will be documented

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1 and the region will inspect to that to say whether or  
2 not the use as is -- and in cases like for pressure  
3 boundary materials in accordance with ASME, it will  
4 also have to be reviewed and accepted by NRR.

5 CHAIR RAY: Okay. All right. But wait a  
6 minute. What -- given that, what is the question you  
7 think we are trying to address, at this point in time  
8 then? Because in a sense what you said is a  
9 tutelage. It's simply of course that's the way  
10 things are done. Well, okay. Why are we talking  
11 about it?

12 The question that -- as I said in my  
13 opening statement that you are asking is are we  
14 establishing the right starting point? Well, if the  
15 starting point is just what is documented in  
16 Supplement 21, which was the answer you gave, then  
17 I'm not sure the ACRS has got anything to say really  
18 other than we have checked it over and we didn't --  
19 there didn't seem to be anything missing. But --  
20 huh?

21 MEMBER SIEBER: Not enough detail there  
22 for us to tell.

23 CHAIR RAY: Yeah. So again, I just want  
24 to persuade you not to tell us what we already know,

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1 but what is it that you want us to try and conclude,  
2 at this point in time? And maybe it's a hard  
3 question for you to answer as it is for us, because  
4 this is an unusual circumstance and we are kind of  
5 making it up as we go along here.

6 But we don't want to miss the point.

7 MEMBER SIEBER: Um-hum.

8 CHAIR RAY: And I know Rag will opine on  
9 this and, Charlie, I haven't forgotten that you have  
10 got questions.

11 MEMBER BONACA: I would like to speak my  
12 comment here on this.

13 CHAIR RAY: The chairman wants to speak  
14 here.

15 MEMBER BONACA: Not that I really mean  
16 that, in fact, you will not verify that all codes and  
17 standards are met. The fact is the plant should  
18 start at some point and will have its own problem.  
19 It would be different if -- from the Unit 1. It will  
20 be different because it will have a certain  
21 commitment in the short-term to inspect the monitor  
22 as the plant comes up and, in fact, because not  
23 everything has been changed.

24 So therefore, you are going to monitor

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1 different formats of components and, you know, from a  
2 maintenance and point, too, for some time to make  
3 sure it performs as expected. And hopefully it will.

4 But I'm saying that so there are going to be  
5 differences in the programs between Unit 1 and Unit 2  
6 for a period of time. After a period of time, you  
7 may merge them together because you find that they  
8 are singular. But -- so there are going to be some  
9 differences there. And that may also spill over in  
10 licensing commitments, which may be different.

11 CHAIR RAY: Well, and perhaps, Mario, you  
12 have defined the area that we need to try and focus  
13 our thinking on, I guess, but we are groping here, so  
14 we apologize. You wanted to comment, Rag, and then  
15 Charlie.

16 MR. RAGHAVAN: Yeah. We were exactly  
17 groping on the same issue as to what is it that we  
18 would want ACRS to comment on on this particular  
19 approach. What we were hoping to do is this is our  
20 big time approach. This is the way we are  
21 establishing implementing the SRM. And this is what  
22 we have done so far. And we wanted to establish as a  
23 baseline with which we can start.

24 CHAIR RAY: Okay. But then when we ask

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1 about the things that we have been asking about, the  
2 answer can't be well, we have set out the  
3 requirements, TVA has to comply with them and if they  
4 don't, we will have to approve an exception. I mean,  
5 because we know that. Charlie?

6 MEMBER BROWN: Yeah, it just -- when I  
7 first started looking at this stuff, okay, to come to  
8 the meeting and I was groping what, you know, are we  
9 doing. And the comment on initial conditions, my  
10 first thought when I started looking at this was, and  
11 I can't divorce the physical part from the  
12 programmatic quite as easily as maybe I should, but  
13 the point being without -- there are some parts in  
14 here, some components, some system, some structures  
15 which when you exercise these corrective action  
16 programs and you go do stuff, they are already 25  
17 years-old or 30 years-old.

18 They have been in since 1980 or '81 or  
19 '82 or '83.

20 MEMBER SIEBER: '82.

21 MEMBER BROWN: What are those that  
22 require the different thought process in terms of  
23 applying a corrective action program? I agree,  
24 tungsten motors, people go run those, they redo

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1 insulation systems, but cables, the stress on  
2 supports? Well, they -- you know, what happens when  
3 stuff is just like sitting there? Like now when this  
4 plant gets licensed and it finishes a 40 year cycle,  
5 when it comes up for renewal for another 20 years or  
6 something, it will already have 65 or 70 years of  
7 time in service, whether it is static or dynamic  
8 maybe is irrelevant in some cases.

9 And that was my concern relative to those  
10 parts. What are we missing when we look at these  
11 programs and what is going on from that time aspect?

12 Even though you can say well, we're not stressing  
13 it. It's not pressurized. They are not running.  
14 Therefore nothing has happened. I don't think that's  
15 really the case in all circumstances.

16 I don't know what the answers are, but I  
17 think that's what I was looking for relative to how  
18 do we put the Betty Crocker/Good Housekeeping Seal of  
19 Approval on, or thought process anyway, how we are  
20 going forward? And that was my thought process.  
21 It's kind of -- it tones in with what are we missing?

22 CHAIR RAY: After the break, the  
23 applicant will come and answer all of our questions,  
24 I know. Is there any other questions for the staff,

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1 at this time? They will be coming back this  
2 afternoon along with the region.

3 MEMBER MAYNARD: Not for the staff, but,  
4 you know, I think we are going to need to let the  
5 other -- we need to get through the presentations.  
6 And I think at the end we will have to discuss that,  
7 what do we think we need for the next step or  
8 whatever. I think we are bantering this around quite  
9 a bit and I think if --

10 CHAIR RAY: But we're staying on  
11 schedule, Otto. We are trying to make sure we do the  
12 issues.

13 MEMBER MAYNARD: I mean to save some time  
14 at the end for us to discuss what --

15 CHAIR RAY: We will.

16 MEMBER MAYNARD: I don't think our input  
17 really is that important for this Supplement 21. I  
18 think it's more in the other areas that we have been  
19 talking about.

20 CHAIR RAY: All right. Is there anything  
21 more that you guys would like to say, at this time?  
22 Okay. We will take a break until 10:45.

23 (Whereupon, at 10:24 a.m. a recess until  
24 10:43 a.m.)

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1 CHAIR RAY: Okay. We will resume,  
2 please, and we will now be privileged to hear from  
3 the applicant. Before I turn -- something sounds  
4 like it is tapping on one of the speakers. I'm  
5 looking around here trying to figure out what it is.

6 Anyway, before I turn it over to the  
7 applicant, based on a hallway conversation, let me  
8 maybe give yet another example in our effort to  
9 illustrate what we are trying to grapple with here.

10 Imagine that if one were going to say, as  
11 you may well say, we're going to take all of the  
12 valve actuators and refurbish them and eliminate  
13 thereby any legacy from this long period of lay-up.  
14 That would present, in my mind, a need for a program  
15 perhaps that didn't exist at Unit 1 to ensure, for  
16 example, that you didn't introduce some harsh  
17 environment qualification weakness in the  
18 refurbishment process, because presumably the OEM  
19 isn't going to take the things back and use them.

20 It wasn't needed in the case of Unit 1,  
21 because refurbishment wasn't, I'm hypothesizing here,  
22 required at Unit 1, but now it is part of the Unit 2  
23 program. Is it adequately addressed would be a  
24 question. Do we really know how to do that without

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1 creating a problem?

2 Now, I use that as an illustration just  
3 to the kind of thing that we are trying to grope  
4 with. It's not so much a question are you going to  
5 do it, although some may want to be sure that, in  
6 fact, it will be done in cases where it should be,  
7 but -- well, all right, fine. But now given that we  
8 are going to do it, isn't that something new that we  
9 have to think about are we going to do it and not  
10 create a problem as a result of what we have  
11 undertaken to do?

12 I offer that to you just as food for  
13 thought. With that, please, Mr. Bajestani, proceed.

14 MR. BAJESTANI: Appreciate that. Good  
15 morning. My name is Masoud Bajestani. I'm the Vice  
16 President for Watts Bar Project Unit 2. I appreciate  
17 the opportunity to come to you -- to come here and  
18 talk to you about the completion of Watts Bar Unit 2.

19 I'm going to go through the introduction and  
20 introduce our team here.

21 Zack Rad is our licensing supervisor; Ed  
22 Freeman our engineering manager; Gordon Arent is our  
23 licensing manager; Frank Koontz, mechanical nuclear  
24 specialist; Bill Crouch, our lead mechanical manager;

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1 Steve Hilmes, he is our electrical and I&C manager;  
2 David Osborne, he is our lead civil engineer, civil  
3 manager; Mark Marshner, he is our Westinghouse project  
4 manager; Steve Smith, he is -- he has got actually  
5 active SRO, Senior Reactor Operator, at Unit 1, but  
6 he is also interfaced between Unit 1 and Unit 2; and  
7 Bob Moll, he is also our pre-op starter manager.

8 With that, let me just explain a little  
9 bit about the team that we have. We, essentially,  
10 transferred the team that we had at Browns Ferry, the  
11 TVA Management Team, to Watts Bar. The majority of  
12 our team members, they either had experience at Watts  
13 Bar or Browns Ferry with extensive experience in  
14 construction, engineering and start-up testing.

15 And you know, I was planning to actually  
16 go through the study, but I would like to go ahead  
17 and try to address some of the questions that you  
18 brought up during the discussion.

19 CHAIR RAY: As you wish.

20 MR. BAJESTANI: Okay. Let me start by  
21 talking about the lay-up, which was one of the main  
22 topic in the discussion that we had. We, at Watts  
23 Bar Unit 2 do not take credit actually for the long  
24 lay-up. Whatever we have done, we disregard. What

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1 we are doing actually, we going like we have to  
2 establish the qualified lay-up. We have to establish  
3 essentially refurbished -- the equipment components  
4 to bring it to the original condition that we had  
5 back 30 years ago.

6 And why we are doing that is actually  
7 what we have is, we call it, master equipment list.  
8 Master equipment list actually is a list that has got  
9 almost 66,000 unique IDs, essentially, a tag number  
10 for every component, every piece of equipment that we  
11 have. What we have to do as we go through this  
12 refurbishment process, every component, valves,  
13 motors, thermocouples, transmitters, we go through  
14 that and there is a decision tree that tells us,  
15 essentially, how we are going to figure -- do a  
16 complete replacement, partial replacement,  
17 refurbishment or establish -- actually, we have the  
18 process for EQ, which we have to establish qualified  
19 life.

20 And so we have some equipment actually  
21 that can end up with a limited qualified life when we  
22 get the licensing. So that is the process that we  
23 are going to go through and, essentially, refurbish  
24 all the components.

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1 MEMBER SIEBER: Are you --

2 MR. BAJESTANI: We are not taking credit  
3 for, again, the lay-up. Every piece of equipment we  
4 are going to go through a decision tree. It is going  
5 to say, basically, replace it, partial replacement or  
6 refurbish. Like I'm going to give you some examples.

7 MEMBER SIEBER: Okay.

8 MR. BAJESTANI: Go ahead.

9 MEMBER SIEBER: Are you going to  
10 determine the extent to which qualified life is  
11 limited due to the fact that construction was  
12 suspended? Are you going to do that by analysis?

13 MR. BAJESTANI: Yes. Some equipment when  
14 we go through the calculations like cables  
15 specifically --

16 MEMBER SIEBER: Right.

17 MR. BAJESTANI: -- when we go through the  
18 calculations, it will establish some limited life.  
19 So there is a process actually that is going to  
20 establish the qualified life. It is actually looking  
21 at, I'm going to use again, the cable. The cable  
22 we're going to look at it. It has been sitting over  
23 there for 30 years and in temperatures it has been  
24 sitting in somewhere between 75 to 80 degree or

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1 higher. We're going to actually use that temperature  
2 for that period of time and we'll go look at the  
3 remaining life. Essentially, go through the  
4 calculations and say okay, here is what is left.

5 MEMBER SIEBER: Um-hum. Well, let me ask  
6 another question that's sort of off the subject, it  
7 will help me. We're going to go and visit you, I  
8 think, this summer.

9 MR. BAJESTANI: Right, yeah.

10 MEMBER SIEBER: And when we do, I would  
11 like to look at Unit 2 probably more than Unit 1.  
12 But if you can tell me about roughly percent  
13 completed of the plant, first. Secondly, is the  
14 reactor coolant system fully installed by now? And  
15 was it laid up with nitrogen or something like that?  
16 Third, commodities that aren't installed, for  
17 example, I came from a unit that was delayed for a  
18 period of time. We had a lot of medium voltage  
19 cables stored in the yard outside, which is not the  
20 best place in the northeast to store stuff, so we  
21 ended up warehousing a lot of that stuff.

22 So commodities that you have that are not  
23 installed yet, what are the physical -- how much is  
24 it? What is it? And what are the physical

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1 circumstances under which it was stored? That would  
2 help me understand the kinds of problems that you are  
3 facing. You can give me short answers for those  
4 things.

5 MR. BAJESTANI: Sure. Let me start by  
6 answering the question on the percent completed.

7 MEMBER SIEBER: Okay.

8 MR. BAJESTANI: Percent completion. When  
9 we actually finished -- back in '85 when we stopped  
10 the construction at one time it was about over 80  
11 percent complete, over 80 percent complete.

12 MEMBER SIEBER: Okay.

13 MR. BAJESTANI: But because of all the  
14 work that we have done on Unit 1 to bring Unit 1 to  
15 meet certain standards or requirements, if I -- if  
16 you add all that work that we have done on Unit 1 and  
17 what we have to do to complete this project, we are  
18 literally over 65 percent complete. Somewhere around  
19 65 percent.

20 MEMBER SIEBER: Okay. I know that in a  
21 couple of situations where licensees either canceled  
22 or discontinued construction of the plant that they  
23 used. The plant that they discontinued as a spare  
24 parts warehouse --

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1 MR. BAJESTANI: Right.

2 MEMBER SIEBER: -- for the plants that  
3 were operating. Did you do that and to what extent  
4 did you do it? Borrow things from Unit 2 to put in  
5 Unit 1.

6 MR. BAJESTANI: There are a lot of  
7 equipment that was borrowed from Unit 2 and was  
8 installed either at Watts Bar Unit 1 or Sequoia Unit  
9 1 and 2.

10 MEMBER SIEBER: Okay.

11 MR. BAJESTANI: So the parts were  
12 borrowed from Watts Bar Unit 2. Like I said, it was  
13 used for the other three units that are identical to  
14 essentially what we have. There are a lot of  
15 equipment. And I give you some examples. All 40  
16 active cooling pumps are not there. We've got --

17 MEMBER SIEBER: Motors or the pumps?

18 MR. BAJESTANI: The pump itself.

19 MEMBER SIEBER: Wow. So your reactor  
20 coolant system is broken, it's open?

21 CHAIR RAY: You mean the volute is gone?

22 MEMBER SIEBER: Yes, the pump.

23 MR. BAJESTANI: Actually the pump itself  
24 is gone.

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1 MEMBER SIEBER: Well, everything is gone.

2 MR. BAJESTANI: Yeah. The rotating  
3 element.

4 CHAIR RAY: All right. But the volute is  
5 still in the --

6 MR. BAJESTANI: Yeah, yeah. The bowl is  
7 there, yes.

8 CHAIR RAY: The bowl.

9 MEMBER SIEBER: Oh, okay.

10 MR. BAJESTANI: Yes.

11 MEMBER SIEBER: Yes, that's part of the  
12 pump.

13 MR. BAJESTANI: Exactly. The rotating  
14 elements are gone.

15 MEMBER SIEBER: Okay.

16 MR. BAJESTANI: We have --

17 MEMBER SIEBER: So did you put something  
18 over it?

19 MR. BAJESTANI: Yes, yes.

20 MEMBER SIEBER: Per shot?

21 MR. BAJESTANI: But we did not lay it up  
22 with nitrogen.

23 MEMBER SIEBER: Okay. Steam generators  
24 are installed?

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1 MR. BAJESTANI: Steam generators are  
2 installed.

3 MEMBER SIEBER: They don't meet up in any  
4 way?

5 MR. BAJESTANI: We did not, again, have a  
6 nitrogen blanket on that, but what we did on steam  
7 generator is we actually went ahead and did  
8 inspection on all four steam generators. We did a 25  
9 percent element testing.

10 MEMBER SIEBER: Okay.

11 MR. BAJESTANI: And they all came up in  
12 tip top shape.

13 MEMBER SIEBER: Okay.

14 MR. BAJESTANI: No issues.

15 MEMBER SIEBER: That doesn't account for  
16 the chemical contaminations of the generators being  
17 open for years.

18 MR. BAJESTANI: Right. But --

19 MEMBER SIEBER: What model generators are  
20 they?

21 MR. BAJESTANI: It's D3.

22 MEMBER SIEBER: Okay.

23 MR. BAJESTANI: D3.

24 MEMBER SIEBER: Okay. Is that the one

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1 with the pre-heaters?

2 MR. BAJESTANI: Yes.

3 MEMBER SIEBER: Okay. Okay.

4 MR. BAJESTANI: Did I answer some of your  
5 questions or do I need to explain that?

6 MEMBER SIEBER: We're getting there.  
7 What about commodities that you have stored and not  
8 installed?

9 MR. BAJESTANI: Okay. We have --

10 MEMBER SIEBER: That could be cable, that  
11 could be -- probably not concrete, but supports,  
12 structural members.

13 MR. BAJESTANI: Okay.

14 MEMBER SIEBER: Instrumentation.

15 MR. BAJESTANI: Let me give you an  
16 example on instrumentation. All the transmitters  
17 actually, safety transmitters, we're going to replace  
18 them.

19 MEMBER SIEBER: Okay.

20 MR. BAJESTANI: After we looked at it,  
21 refurbishing transmitters versus replacing it and the  
22 cost benefit, we just decided to go ahead and replace  
23 them.

24 MEMBER SIEBER: Right, yeah.

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1 MR. BAJESTANI: Commodities like cables,  
2 all the cables are installed. They are not outside.  
3 They are not stored outside.

4 MEMBER SIEBER: Okay. Is the building --  
5 are the buildings heated or --

6 MR. BAJESTANI: The container is actually  
7 essential, because it is closed, so it is -- you  
8 know, but as far as heated, it's not that we actually  
9 heated the container, no.

10 MEMBER SIEBER: Okay. But it is not a  
11 cold water plant.

12 MR. BAJESTANI: No, it's not.

13 MEMBER SIEBER: Okay.

14 MR. BAJESTANI: The other thing we did  
15 followed this -- our inspection program. We actually  
16 put about 100 engineers, right at the beginning  
17 before we actually start this project, to mark down  
18 every piece of equipment.

19 MEMBER SIEBER: Okay.

20 MR. BAJESTANI: And look at the condition  
21 of the equipment and tell us what it is before we  
22 actually make a decision and make a recommendation to  
23 TVA board of directors that we want to go ahead and  
24 complete this project.

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1 MEMBER SIEBER: Okay. So you have  
2 records of all that?

3 MR. BAJESTANI: Yes.

4 MEMBER SIEBER: And they are by marked  
5 number, MEL list?

6 MR. BAJESTANI: The MEL? The master  
7 equipment list, it's, like I said, about 66,000.

8 MEMBER SIEBER: You could --

9 MR. BAJESTANI: You can actually go from  
10 one to another, exactly.

11 MEMBER SIEBER: Okay. That should make  
12 tracking down what you have done and where you have  
13 to go easier.

14 MR. BAJESTANI: Exactly, exactly.

15 MEMBER SIEBER: Did you use pull tickets  
16 when you pulled cables? Do you actually know where  
17 the cables go?

18 MR. BAJESTANI: Yes. We actually had to-  
19 - well, we used to have, we call it, I-card actually,  
20 which specifically says here is the cable. It was  
21 pulled from here to here. And this information was  
22 submitted to engineering for their voltage drop  
23 calculations and all this other stuff, you know.

24 MEMBER SIEBER: Right.

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1 MR. BAJESTANI: So we have actually been  
2 able, Steve Hilmes has actually -- he is in  
3 Electrical I&C. Do you want to talk about the cable  
4 pull?

5 MR. HILMES: Yeah. Steve Hilmes,  
6 Electrical I&C. Essentially, we have gone back in  
7 all the safety-related cables. We have a -- pretty  
8 much we have found all the pull records on them.  
9 There is a few where we have a computer database, but  
10 we went back and we actually physically pulled the  
11 paper pull records on them and we are -- yes, sir?

12 MEMBER SIEBER: Do you ever match it with  
13 tags or just look at the records?

14 MR. HILMES: We are looking at the record  
15 and if we can get to, we are validating every cable  
16 that is in the plant that it is installed. In the  
17 case of Class 1E cables, we are documenting anything  
18 that we can off the jacket. Again, some places it's  
19 impossible to get that data. In that case, we will -  
20 - we are relying on the pull record.

21 MEMBER SIEBER: Okay.

22 MR. BAJESTANI: Also, there was a  
23 question that came up during the discussion on  
24 documentation, whether or not we are finding all the

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1 documents that we need for Watts Bar Unit 2. So far  
2 every document that we have been looking for, we have  
3 been able to find. As a matter of fact, we had to go  
4 through extensive preparation for ASME survey,  
5 Section 3, and Bill Crouch is our mechanical lead  
6 engineer, he can tell you how many feet of cable. Go  
7 head, Bill.

8 MR. CROUCH: Thanks for helping me.

9 MR. BAJESTANI: I mean documents,  
10 documents.

11 MR. CROUCH: Bill Crouch. I'm the  
12 Mechanical Nuclear Manager for Watts Bar Unit 2. As  
13 part of going through the effort of verifying what  
14 all we had out there in the plant, we have a two-step  
15 process where we, TVA, are going and verifying all  
16 the work that was installed back in the '80s and  
17 pulling all the weld records, the weld operation  
18 sheets, etcetera.

19 We have been able to find every piece of  
20 it, either through our electronic media or through  
21 our hard copy vault. We have pulled all the CMTRs,  
22 all the MPB1 forms, NPB1 forms, weld records,  
23 etcetera, through the -- all the plaquing that was  
24 installed is being assembled into the, what's called,

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1 ASME N5 package. It is broken up by a system or  
2 portions of systems. And when you stack all this  
3 paper up together, it's going to be about 115 feet  
4 thick of paper to document just the welds in the  
5 plant.

6 MEMBER SIEBER: I know what the -- how  
7 many trailer trucks --

8 MR. CROUCH: Yes.

9 MEMBER SIEBER: -- you will need to haul  
10 it. Let me ask you this. Was TVA the architect  
11 engineer that you have now?

12 MR. CROUCH: We were the architect  
13 engineer.

14 MEMBER SIEBER: So you've got the  
15 records?

16 MR. CROUCH: Yes, we have everything.

17 MEMBER SIEBER: Plus outside people who -  
18 -

19 MR. CROUCH: Yes.

20 MEMBER SIEBER: -- would like to show you  
21 the records.

22 MR. CROUCH: No, we have it all in our  
23 own vaults, either electronic or hard copy.

24 MEMBER SIEBER: Okay. Okay. That's

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1 enough detail for me to understand where you are.

2 MEMBER STETKAR: Let me just ask one  
3 question to follow-up just a bit on Jack. What are  
4 you doing about buried piping? Everything you  
5 mentioned is equipment list and things that I can  
6 walk up to and pretty much touch in the plant. What  
7 are you doing about buried piping?

8 MR. BAJESTANI: Buried piping really -- a  
9 couple of systems that we have buried piping and,  
10 Frank, you want to address that?

11 MR. KOONTZ: Yes, Frank Koontz. I'm an  
12 engineering specialist at Watts Bar. Most of the  
13 buried piping that we have at the plant is either  
14 associated with Unit 1 or a common system.

15 MEMBER SIEBER: Right.

16 MR. KOONTZ: So a lot of that equipment  
17 is under control of Unit 1. It's also in the  
18 maintenance rule program. It consists of our  
19 essential raw cooling water piping or raw service  
20 water piping, high-pressure fire protection piping.  
21 And so a lot of that piping has been maintained over  
22 the years. That's not to say that we haven't had  
23 some leaks that have been repaired. We dig them up  
24 and repair them, you know.

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1 MEMBER SIEBER: Part of the --

2 MR. KOONTZ: And the essential raw --

3 MEMBER SIEBER: You have parts of the  
4 service water though that probably have not been  
5 filled except perhaps inadvertently for leakage and  
6 what have you.

7 MR. KOONTZ: There may be some raw  
8 service water piping that has not been used. The  
9 essential raw cooling water system was turned over in  
10 its entirety. We have 8 pumps down at the intake  
11 pumping station, 4 headers, all of that piping was  
12 turned over to Unit 1 as part of the plant turnover.

13 MEMBER SIEBER: Good move.

14 MR. KOONTZ: Yeah. So --

15 MR. BAJESTANI: Essentially, the answer  
16 is for Unit 2, we really don't have buried piping  
17 that we've got to do something about.

18 MEMBER STETKAR: Yeah, we'll talk to  
19 this. I have some questions about --

20 MR. BAJESTANI: Sure.

21 MEMBER STETKAR: -- shared systems.

22 MR. BAJESTANI: Sure.

23 MEMBER STETKAR: But I think you have  
24 answered my concern. Essentially, what you are

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1 saying is that you don't believe that there are any  
2 unique Unit 2 buried piping systems that --

3 MR. BAJESTANI: That's correct.

4 MEMBER STETKAR: -- haven't been managed  
5 as part of the unit.

6 MR. BAJESTANI: Right, that's correct.

7 MEMBER MAYNARD: The other thing I would  
8 add into that is to make sure -- do you have any dead  
9 legs or anything? I mean, it may be water in or it  
10 may be active, but if you have a dead leg, you create  
11 a problem there.

12 MEMBER SIEBER: Yeah.

13 MR. BAJESTANI: Well, let me explain from  
14 this and I guess we have again pre-op starter manager  
15 here. He can expand on that. We have found some  
16 special underground cooling water that we have had  
17 some dead leg and we have had some leakage from Unit  
18 1 to Unit 2 and we did find some issues and we are  
19 actually going through those piping, this assembly,  
20 and actually hydrolasing or replacing as needed.

21 MEMBER SIEBER: Dead legs aren't all that  
22 bad because if you have a dead leg, there is oxygen  
23 in whatever water is in there.

24 MR. BAJESTANI: Right.

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1 MEMBER SIEBER: It corrodes a little bit.

2 MR. BAJESTANI: That's right.

3 MEMBER SIEBER: The oxygen disappears and  
4 then all you have is an interface.

5 MR. BAJESTANI: That's exactly why we are  
6 hydrolasing some of the piping and cleaning it up,  
7 you know.

8 MEMBER SIEBER: That's right.

9 CHAIR RAY: Okay. Let's proceed.

10 MR. BAJESTANI: Okay. A couple of other  
11 issues that came up, let me just go right into and  
12 also try to address that. Some operational issues,  
13 how we are addressing some of issues on Unit 1 that  
14 we have problem and how we are taking care of it in  
15 Unit 2, I think, you asked that question.

16 As we go through the completion of Watts  
17 Bar Unit 2, there are issues that we know that exists  
18 on Unit 1 and we are actually taking care of it. And  
19 I'm going to provide some examples, so you know what  
20 it is.

21 Low-pressure turbine. All three low-  
22 pressure turbines, they are designed actually for  
23 certain back-pressure. Every summer right now, Unit  
24 1 actually de-rates because of the back-pressure

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1 issue. And we have had actually low-pressure, the  
2 last stage which is low-pressure, Charlie. We have  
3 had weight that actually damaged because of the high-  
4 back pressure.

5 MEMBER MAYNARD: My concern would not be  
6 so much on that, as much as let's take like let-down  
7 heat exchanger. The things that may have been a  
8 problem operating-wise that once you are rated, you  
9 know, that's a high-dose job to go down and do any  
10 repairs or modification to let-down or excess let-  
11 down heat exchange.

12 MR. BAJESTANI: Right.

13 MEMBER MAYNARD: Most of the problem the  
14 industry had was really more to misoperation in the  
15 early life of the plant. But there have been  
16 problems with let-down heat. Anything like that that  
17 you have experienced that would be very difficult or  
18 a high-dose job to modify later would be an ideal  
19 time now to take a look at that.

20 MR. BAJESTANI: We have a list of  
21 actually things that are -- our corporate engineering  
22 actually looked at it, they have provided that list  
23 to us to take a look at it now, specifically for dose  
24 reduction, which we're going through evaluating one

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1 by one and see what we're going to do different.

2 But also, besides the dose reduction,  
3 there are other operational issues that we are,  
4 essentially, fixing on Unit 2, so we don't have the  
5 same problem. I'll give you an example on the  
6 pressurizer pressure control. We've got the  
7 redundancy on the two right now, but it's manual, so  
8 if we lose one channel, one sensor, operator has to  
9 actually manually take control of the pressurizer  
10 pressure control.

11 The new system, digital system that we  
12 put in is actually automatically is going to do that.

13 So there are some operational issues that we are  
14 addressing as we go through this project.

15 MEMBER SIEBER: I apologize for  
16 interrupting.

17 MR. BAJESTANI: Sure, no problem.

18 CHAIR RAY: Masoud, are there any other  
19 things you wanted to address up front?

20 MR. BAJESTANI: Let me see if I -- no, I  
21 think I can -- if I go through the rest of the  
22 presentation perhaps we can address.

23 CHAIR RAY: All right. Fine. Now, we  
24 are going to, at some point here, I guess, get to the

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1 review of the licensing phases, according to the  
2 agenda anyway. Then we will come back to you and  
3 talk about construction reactivation and so on, at  
4 least that's what I have on my sheet.

5 MR. BAJESTANI: Okay. Well, then go  
6 ahead.

7 CHAIR RAY: Okay. When we do that  
8 though, I just want you to note I would like to visit  
9 the question of turnover of responsibility to the  
10 extent it has occurred from TVA Engineering to any  
11 other contractors. In other words, the question was  
12 answered who was the AE before, it's TVA. Is that  
13 changed now in any way? And if so, how?

14 MR. BAJESTANI: And we can explain that.  
15 Ed can explain that as he goes through his  
16 presentation. But I do want to make sure that -- I  
17 know we have future meetings and some of you guys  
18 want to visit Watts Bar, I guess, in July. Any  
19 follow-up, any questions that comes up from here or  
20 any other special topics that you want us to address  
21 and we can't address it here, at this point, we're  
22 going to make sure that we address it in future  
23 meetings.

24 CHAIR RAY: Well, thank you. We will

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1 look forward to that. We are, as you have heard us  
2 say many times, struggling though with whether we  
3 have enough information and there is a need for us to  
4 write a letter and we're kind of focused on that  
5 right now.

6 MEMBER BROWN: Can I also interject?

7 CHAIR RAY: Charlie?

8 MEMBER BROWN: I'm going to screw this  
9 up, but you mentioned you are putting in a new  
10 digital I&C system. You have put the word new in  
11 front of those--

12 MR. BAJESTANI: Yes.

13 MEMBER BROWN: -- words. So I take it  
14 it's going to be different from the Watts Bar Unit 1?

15 MR. BAJESTANI: Yep.

16 MEMBER BROWN: I&C system.

17 MR. BAJESTANI: It will.

18 MEMBER BROWN: And is -- that's -- there  
19 is some interest --

20 MR. BAJESTANI: We're going to address  
21 this.

22 MEMBER BROWN: -- in those systems and if  
23 it is -- and I don't know, I just wanted to know did  
24 I understand that correctly? And will that be

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1 separately evaluated relative to -- you don't have to  
2 answer this now. We've got a lot of other stuff at a  
3 higher level to go through, but --

4 MR. BAJESTANI: We can address that now,  
5 if you want us to do that.

6 MEMBER BROWN: Is it previously  
7 qualified?

8 MR. BAJESTANI: Steve?

9 CHAIR RAY: Go ahead, Steve.

10 MR. HILMES: Steve Hilmes, Electrical  
11 I&C. Our safety-related I&C systems are a duplicate  
12 of Unit 1, as far as SSPS, our Eagle 21 system.  
13 There is a RVLIS system, monitoring system that will  
14 be -- have some differences in it. It's a newer  
15 platform. And we have a -- we are going to fixed in-  
16 core probe system. Okay. Those are on the interplus  
17 more side.

18 The -- as far as what he was talking  
19 about a pressurizer control, that's the non-safety-  
20 related control. Okay. And so what we are having to  
21 do here is there are portions that Unit 1 will  
22 actually have installed prior to Unit 2 coming up,  
23 okay. And what we are doing is we are trying to make  
24 the systems as close as possible from the operator

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1 standpoint for that non-safety-related control stuff.

2 But there will be differences, slight differences we  
3 are evaluating them case-by-case with operations.

4 CHAIR RAY: Okay. That's -- I just  
5 wanted to make sure it gets brought in, so that those  
6 things which are different --

7 MR. BAJESTANI: Yes.

8 CHAIR RAY: -- or changes will be with  
9 sufficient detail. I emphasize that strongly.

10 MR. BAJESTANI: Sure.

11 CHAIR RAY: Sufficient detail to allow  
12 both the staff and any key facts or other  
13 presentations they have for us to cover those areas.

14 That's all. I mean, I thought I read in some of the  
15 papers about it was going to be the same. You said  
16 new. You're saying it's really the same except for a  
17 couple of other pieces.

18 MR. BAJESTANI: Right.

19 CHAIR RAY: So we can stop there.

20 MR. BAJESTANI: Exactly.

21 CHAIR RAY: Okay.

22 MR. ARENT: All right. My name is Gordon  
23 Arent. I'm the licensing manager for Watts Bar Unit  
24 2. I had a fairly lengthy discussion on, I guess,

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1 the history behind the licensing of Watts Bar Unit 1  
2 and kind of the overall TVA fleet. I don't want to  
3 repeat a lot of what Pat talked about, so I do want  
4 to touch on a couple of specific topics. And then I  
5 want to go into some detail about how we actually  
6 built the tables that you now see in SSER-21 and the  
7 process that TVA went through to develop those to  
8 maybe answer some of the questions that we heard this  
9 morning.

10 So in 1985, of course, TVA had shutdown  
11 its Sequoia and Browns Ferry plants and suspended  
12 construction on Watts Bar units. And in 1988, as a  
13 result of that, we developed the NPP or the Nuclear  
14 Performance Plan for Watts Bar Unit 2 over the Watts  
15 Bar site for recovery of that site.

16 The key attributes to that plan were  
17 strengthening the management organization of Watts  
18 Bar, management control and involvement at our  
19 Employee Concerns Programs and how we had not  
20 effectively used those previously, the resolution of  
21 CAP and Special Programs, which we will talk about in  
22 some detail in a few minutes and then operational  
23 readiness for bringing the plant on-line. And we  
24 started that in the 1988 time frame.

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1 In parallel with the work that we were  
2 doing on Watts Bar Unit 1, we did recover the Sequoia  
3 units in 1988. We recovered Browns Ferry Unit 3 --  
4 I'm sorry, Unit 2 in 1991. And then moved on to the  
5 Browns Ferry Unit 3 unit in the '91 through '95 time  
6 frame.

7 Next slide, Zack. By 1995, we had  
8 developed and gotten ourselves in the position to  
9 again request an operating license for Watts Bar Unit  
10 1. In Amendment 91 to the Final Safety Analysis  
11 report, was that license. We have talked about it a  
12 little bit, there were some significant systems that  
13 were turned over at the time that Watts Bar Unit 1  
14 was licensed that were Unit 2 systems.

15 Emergency raw cooling water was one of  
16 those systems, emergency diesel generators was  
17 another one of those systems. So there has been some  
18 turnover of safety-related systems and those have  
19 been maintained under the maintenance rule since that  
20 time frame.

21 MEMBER SIEBER: Okay.

22 MR. ARENT: In 2000, Watts Bar was  
23 officially declared in deferred plant status. And  
24 how that occurred was in 1999, we came in for a

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1 construction permit extension for Watts Bar Unit 2.  
2 And a request for additional information was asked as  
3 to whether or not that plant was actually in the  
4 policy statement deferred status. And at that time,  
5 we said that we were officially in deferred status  
6 for Watts Bar Unit 2.

7 That does not preclude the fact, however,  
8 that when we suspended operation on Watts Bar, that  
9 we did put system in lay-up, and Ed Freeman will talk  
10 about that later today, beginning in 1985. And he  
11 will talk through the sequence of how that occurred.

12 Between 2002 and 2007, we actually  
13 recovered Browns Ferry Unit 1. And we will talk at  
14 some length, Mr. Bajestani will talk in some length,  
15 about lessons learned from that experience and the  
16 team that was involved in that.

17 And then once we got Watts -- or once we  
18 got Browns Ferry Unit 1 back on-line, we did come in  
19 for the key assumptions in our approach to completing  
20 the construction project at Watts Bar Unit 2.

21 So in April of that year, 2007, we came  
22 in with a key assumptions letter that basically had  
23 two key assumptions. First, that we wanted to  
24 complete construction under 10 CFR Part 50 and not

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1 under Part 52. And then the second item was that we  
2 wanted to utilize the Unit 1 licensing basis, which  
3 we talked about in some detail already this morning.

4 MEMBER SIEBER: Do you have the licensing  
5 basis clearly developed?

6 MR. ARENT: For Watts Bar Unit 1?

7 MEMBER SIEBER: For Unit 2.

8 MR. ARENT: Yes. Actually, SSER 21 does  
9 clearly define what the licensing basis for Watts Bar  
10 Unit 2 is.

11 MEMBER SIEBER: Okay. Does the staff  
12 agree with that?

13 MR. RAGHAVAN: Yes.

14 MEMBER SIEBER: Okay.

15 MR. ARENT: Okay. And when we get to the  
16 next slide, I want to talk a little bit about what  
17 resolved means, because there were some questions  
18 this morning earlier on about what resolve means.  
19 And I'll tell you what resolve means from the TVA  
20 perspective and we'll go from there.

21 MEMBER SIEBER: Okay.

22 MR. ARENT: And then again, Pat talked  
23 about the SECY-07-096 that basically set the  
24 guidelines for how we were going to go about

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1 licensing Watts Bar Unit 2 in a very broad picture.  
2 So we'll move on.

3 CHAIR RAY: You mentioned the essential  
4 raw cooling water --

5 MR. ARENT: Essential raw cooling water  
6 system?

7 CHAIR RAY: -- having been turned over to  
8 Unit 1.

9 MR. ARENT: Um-hum.

10 CHAIR RAY: At what point will be talk  
11 about the effect of that now supplying both units?

12 MR. ARENT: We can talk about that now.  
13 Bill?

14 MR. CROUCH: Yeah.

15 MR. ARENT: Bill Crouch, who is our lead  
16 mechanical, can speak to that.

17 CHAIR RAY: Hum?

18 MEMBER STETKAR: Let's wait until this  
19 afternoon when we talk about it, because I have  
20 several questions.

21 CHAIR RAY: Yeah. I just want to know  
22 when we're going to do it.,

23 MEMBER STETKAR: This might drag on  
24 longer if we want to get them through the licensing

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1 basis.

2 CHAIR RAY: Okay.

3 MEMBER SIEBER: Yes. I was just --

4 MEMBER STETKAR: Just the issue this  
5 morning.

6 CHAIR RAY: All right. Well --

7 MEMBER SIEBER: Make us wait.

8 CHAIR RAY: It came up in the context, in  
9 my mind, of the licensing basis, but in any event,  
10 that's all right.

11 MR. BAJESTANI: We'll address it.

12 CHAIR RAY: We'll do it later.

13 MR. ARENT: We will take a note to make  
14 sure that we do that. SSER 21, which was the  
15 development, basically, the Watts Bar Unit 2,  
16 licensing basis, the way that we at TVA developed  
17 that was that we took the SERs that had been  
18 developed for Watts Bar Unit 1 and again, SERs from  
19 No. 1 through No. 4 were basically for both units in  
20 all cases.

21 SER -- SSER 5 through 20, for the most  
22 part, did address both units. There were probably  
23 all in all about close to 70 percent of all of the  
24 SSERs that we looked at addressed both units. And

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1 what we did was we went back and said did the  
2 approach to how that was resolved on Unit 1, was that  
3 approach approved for Unit 2?

4 The engineering process you were going to  
5 use, the design process you were going to use, were  
6 those approved for Unit 2? And what we found in  
7 those SSERs was yes, they were in 70 percent of the  
8 cases.

9 The other thing that we looked at was  
10 what do we consciously know that we are going to  
11 change today? So as an example, Steve talked a  
12 little bit about the fact that we were going to  
13 change our I&C processors. In SSER 21, you will find  
14 that that line item is open. So anything that we  
15 knew we were physically going to do different on Unit  
16 2, we left open right from the front end, right from  
17 the get-go.

18 The other thing that we looked at was  
19 what has changed on Unit 1 from the time it was  
20 licensed in 1995 until today? So we looked at  
21 everything that was done under the 10 CFR 50.50  
22 process or anything that we did that came in for a  
23 tech spec amendment on. And we said okay, those  
24 items are changes. Those items are open in the SSER

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1 21.

2 So those were the major attributes that  
3 we looked at as we developed the front end part of  
4 those tables, the SSER part of the table. So there  
5 was a question this morning about did we prioritize?

6 We did, in fact, look at the things that we knew we  
7 were going to change and made sure those were left  
8 open. And then we looked at things that we -- may  
9 change and left those open.

10 The final thing that we have done and  
11 it's on the next slide, but I'll talk about it now is  
12 we have built, what we call, a Licensing Basis  
13 Preservation Program. And it is a codified program  
14 with checklists that requires design engineering,  
15 when they develop a modification that is going to go  
16 into Unit 2, to look at the design and licensing  
17 basis for that modification and ask the question,  
18 does it alter what has previously been approved by  
19 the staff in the SSER 21?

20 So that's the process that we have used  
21 in developing the SSER. And that's how we got to the  
22 first part of the SSER 21.

23 Generic letters and bulletins were  
24 reviewed in a similar manner. Again, we took the

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1 approach that was used on Unit 1 and we said can we  
2 perform the same approach on Unit 2? In some cases,  
3 we couldn't because it has been overcome by time.  
4 You know, one has had to make two or three revisions  
5 to the way to approach the generic letter. We took  
6 the latest approach that was done on Unit 1, the last  
7 time that it was addressed.

8 In some cases, like the new generic  
9 letters that we have on high point vents, we are  
10 addressing those in parallel with Unit 1. But for  
11 historical things, we have looked at the latest  
12 version of the generic letter, generic communication  
13 and we addressed that issue in that manner.

14 CHAIR RAY: Well, there is a lot of open  
15 items listed here. I don't want to --

16 MR. ARENT: Um-hum.

17 CHAIR RAY: -- try going through them,  
18 but from what you said, it sounds like where there is  
19 an open item, it would reflect doing something  
20 different. Is that what you meant to say?

21 MR. ARENT: Yes. So what we would have  
22 to do is we would have to build --

23 CHAIR RAY: Take flooding protection just  
24 because it's on the first page. Flooding protection,

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1 you are going to do something different or is that  
2 just not resolved, because there is --

3 MR. ARENT: There are some questions --

4 CHAIR RAY: -- some questions that  
5 haven't been answered?

6 MR. ARENT: -- that deal with flooding  
7 and those evaluations will be done later this year.  
8 And once those are done, then we will go back and  
9 revisit what we currently have and we will be able to  
10 submit and say that what was validated originally is  
11 still correct or we have to make some changes and  
12 submit those changes.

13 CHAIR RAY: Okay. Go ahead.

14 MR. ARENT: Okay. So getting back to the  
15 generic communications. We have looked at all the  
16 generic communication responses for Unit 1 and have  
17 submitted those that were previously approved for  
18 both units and also those that we know that we have  
19 to provide initial responses for.

20 It is important to understand that on  
21 things like generic communications and then when we  
22 get into the corrective action and special programs,  
23 that there is a whole secondary attribute that the  
24 region will have to come in and inspect our

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1 implementation on.

2 So the front end that we are doing in  
3 SSER 21 right now is simply the design piece. Simply  
4 the NRR piece. And then Bob Haag and his folks will  
5 come out and do the inspection piece for how we  
6 actually implement the plan and validate that that is  
7 done prior to telling us we are ready for our  
8 license.

9 CHAIR RAY: So you would conclude from  
10 that, I guess, that anything we would say, at this  
11 point in time, would be just relevant to the  
12 licensing basis in Part 21, since everything else is  
13 perspective?

14 MR. ARENT: Correct. It's just saying  
15 that our approach to use Unit 1 or to say we've got -  
16 - we're coming up with something different is the  
17 appropriate thing, at this point.

18 CHAIR RAY: All right.

19 MR. ARENT: Okay. A corrective action  
20 program, Pat went into this in some detail, but I  
21 guess one of the things I wanted to talk about a  
22 little bit was there were some questions on cable  
23 tray supports. That was kind of one of the topic  
24 areas that we talked about earlier. And I want to

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1 give you a little bit more detail/background on what  
2 cable tray supports was about.

3 There were deficiencies found in the  
4 cable tray supports, and this is on Unit 1, that  
5 included things like inadequate tray connections,  
6 inconsistencies between as designed versus as built  
7 and some -- in some cases the orientation of the  
8 cable trays in the field.

9 What we did on Unit 1 was the following  
10 items: We assured the structural adequacy and  
11 compliance with the design on Unit 1 and we did a  
12 review of the design. We reviewed the development of  
13 the design output, the calculations, the drawings,  
14 whatever went into the design output with the design  
15 criterion and ensured that they had been translated  
16 correctly.

17 We walked down all of the field  
18 configurations and identified deviations from the  
19 design output as well as any degradations that we  
20 found in the field from maybe someone running into a  
21 cable tray or whatever the case might be. And then  
22 we did modifications to the field conditions to bring  
23 them to design basis.

24 And when we say we're going to take the

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1 same approaches on Unit 2 as we do on Unit 1, those  
2 five bullets that I just went through as to what we  
3 specifically did on Unit 1 will be done on Unit 2  
4 today.

5 MEMBER STETKAR: Gordon, this may not be  
6 fair, but I'll ask it anyway.

7 MR. ARENT: That's okay.

8 MEMBER STETKAR: Because we don't have to  
9 be fair, I guess. When you say that, for example, we  
10 have learned a lot in the last 25 to 30 years about  
11 seismology in the Tennessee region. We have learned  
12 a lot about the effects of high-frequency ground  
13 accelerations. When you say you are going to go back  
14 and reevaluate Unit 2, is it relative to what we know  
15 today regarding seismic accelerations or is it  
16 relative to the seismic licensing basis for Unit 1 30  
17 years ago or more than 30 years ago?

18 MR. ARENT: I'll let Dave Osborne, he is  
19 our structural guy, respond to that.

20 MR. OSBORNE: Well, we have evaluated or  
21 will evaluate the plant to the site-specific response  
22 spectra. It was original. If you're not familiar  
23 with it, there is original site response spectra,  
24 which was the modified NUMARC and then there is a

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1 site-specific response spectra, which is an  
2 additional set, what we call Set B. The first one is  
3 Set A. The second is Set B.

4 Set B is the site-specific response  
5 spectra and it is somewhat larger than the original.

6 And we will evaluate everything on Unit 2 to this  
7 new -- to the site-specific response spectra. And we  
8 have made a commitment -- if we do modifications,  
9 there is also a Set C. And Set C is the -- is a --  
10 the original response spectra that modified NUMARC  
11 that has been updated to the latest techniques,  
12 modeling techniques.

13 So what we have committed to when we do  
14 modifications that we will modify anything to what we  
15 call a B + C. And B + C is not directly additive,  
16 but it is a curve that encompasses both the B and the  
17 C. So any modifications that we do -- and we also  
18 have committed to doing any attached piping to the  
19 reactor coolant system to the B + C, which is a  
20 larger spectra.

21 MEMBER STETKAR: Not quite knowing what  
22 A, B and C is precisely, does the C have a high-  
23 frequency acceleration part?

24 MR. OSBORNE: We terminated ours. We

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1 terminated ours at 33 hertz.

2 MEMBER STETKAR: Okay. So the answer is  
3 no.

4 MR. OSBORNE: Thank you.

5 MEMBER SIEBER: Another quick question,  
6 which I would prefer just be a yes or no. Does  
7 anything you do in Unit 2 apply to Unit 1?

8 MR. OSBORNE: Ask that again.

9 MEMBER SIEBER: Yes or no? Anything you  
10 find in Unit 2, as far as seismic, hangers and  
11 supports, would it apply to Unit 1? Yes or no?

12 MR. BAJESTANI: That's a tough way to say  
13 yes or no. Let me expand on that.

14 CHAIR RAY: Well, wait a minute. I'm not  
15 sure we want to get into the answer to that, because  
16 this is a public meeting and I'm not sure we want to  
17 start asking questions about Unit 1.

18 MEMBER SIEBER: Okay.

19 CHAIR RAY: Let's stick with Unit 2  
20 operating license.

21 MEMBER SIEBER: Probably the answer is  
22 no.

23 MR. ARENT: Okay. Moving on with  
24 corrective action programs and special programs.

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1 When we reviewed the historical programs from Unit 1,  
2 we did use, in fact, the last approved revision to  
3 that program that usually occurred in the early '90s,  
4 so '91/92 time frame was our starting point for most  
5 of the CAP and special programs.

6 What we did then was we went and looked  
7 at whether or not the 1991 or 1992 programs had been  
8 superseded by time. So we looked to see if there had  
9 been new regulations that had come out, if there were  
10 lessons learned from Unit 1 that had come out. And  
11 we made sure that as we developed the fixes on Unit  
12 2, that we applied those programs from Unit 1 and the  
13 lessons learned.

14 The other thing that we have done, and  
15 now is probably the best time to bring this up is, we  
16 have developed, what we call, historical document  
17 review. And one of the things that we were not were  
18 of based on the length of time between the time we  
19 licensed Unit 1 and the time -- actually, we shutdown  
20 Unit 2, and the time that we are today is, did we  
21 consistently capture all of the things, the lessons  
22 learned, the broken pieces parts in the plant that we  
23 found on Unit 1 and did we duplicate that issue for  
24 Unit 2?

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1           And we had no level of confidence that we  
2           had done that consistently from 1985 until today. So  
3           we put together a team of folks and we, basically,  
4           identified 43,000 documents that were historical  
5           inspection reports, historical correction action  
6           program write-ups, any other type of --

7           MR. BAJESTANI: Employee concerns.

8           MR. ARENT: -- employee concerns, any  
9           other type of item that we had out in the field and  
10          we are reviewing each of those 43,000 documents for  
11          applicability to Unit 1 or Unit 2. And most of those  
12          are closed Unit 1 items.

13          We had, when we started the project,  
14          about 500 open Unit 2 items. And we looked at the  
15          population of things we actually looked at at Unit 1  
16          and said these can't be right. So we went back and  
17          looked at all the closed Unit 1 stuff to make sure  
18          that -- whether or not it was applicable to Unit 2.  
19          And we have transferred, right as of today, about 68  
20          percent of each document we have picked up has gone  
21          over to Unit 2 for resolution.

22          So if that track record stays, we will  
23          end up with about 26,000 items to address on Unit 2.

24          CHAIR RAY: That's part of your program?

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1 I mean, you described what you have been doing.

2 MR. ARENT: Yes.

3 CHAIR RAY: But it's --

4 MR. ARENT: Yeah, that's a codified  
5 program.

6 CHAIR RAY: -- requirements so that the  
7 NRC can follow-up?

8 MR. ARENT: Oh, yeah. In fact, they have  
9 come out and inspected the initial phases of that  
10 program. And the first phase of the program is  
11 expected to be done here about the 1<sup>st</sup> of May.

12 The next slide. The licensing basis  
13 preservation, I have talked about that a little bit.

14 And again, that's to look at all the things that we  
15 are currently doing from an engineering standpoint to  
16 make sure that we are not undoing something that has  
17 currently been completed or at least our approach has  
18 been considered resolved for Unit 2.

19 We have extended the construction permit  
20 to 2013. It was originally due up in December 2010.

21 And we expect that to be sufficient to allow us to  
22 complete the project. We have submitted our final  
23 Supplemental Environmental Impact Statement and that  
24 was submitted originally last summer and then we did

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1 do a Severe Accident Mitigation Alternatives  
2 evaluation and that was completed in January. And  
3 that has also been submitted.

4 We have developed a draft. I'm sorry, we  
5 developed an actual Safety Analysis Report, Amendment  
6 92, which is the baseline Unit 2 Safety Analysis  
7 Report. It reflects the fact that we now have a two-  
8 unit station and it also reflects items that have  
9 been completed for common systems to date. And that  
10 was submitted to the staff.

11 And right now, the plan is as we continue  
12 with design and engineering, that we will do four  
13 submittals over the remainder of the year, one in  
14 April, one in August, one in November and then one at  
15 the end of the year. That will complete validation  
16 of the design basis of the plant.

17 Operation license application. We have  
18 done an update to the 1976 operating license. We  
19 have developed a set of technical specifications for  
20 Watts Bar Unit 2 that is a template instead of  
21 specifications that are based on the current Unit 1  
22 specifications. It includes all the amendments that  
23 have been done to date. And we have worked with Unit  
24 1 on making sure that our schedules are complementary

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1 to get us to a licensing standpoint.

2 We have built a technical requirements  
3 manual. We have updated our emergency plan in draft  
4 form to include NUMARC-style emergency action levels  
5 for Watts Bar Unit 2. We have completed security  
6 plan review and determined, first off, that the plan  
7 is applicable to both units and that no plan changes  
8 will be required. There are implementing procedure  
9 changes that we will have to make, but the plan, as  
10 it stands, is acceptable.

11 And of course, we are evaluating the new  
12 security plan for impacts on Watts Bar Unit 2. There  
13 are some areas that are clearly -- we have been  
14 exempted from as part of that new security plan or  
15 security rule, but there are other areas like  
16 cybersecurity that will apply to Unit 2.

17 And then finally as part of that report,  
18 we did provide a decommissioning report for Watts Bar  
19 Unit 2. And that's it.

20 CHAIR RAY: There is this somewhat  
21 interesting admonition the Commission gave the staff  
22 about encouraging you to adopt updated standards.  
23 Can you give me any example of where you have been  
24 encouraged to do that and have agreed to do it and to

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1 the contrary, where you thought it best not to?

2 MR. ARENT: To date, the only one that we  
3 have really addressed, at this point in time, has  
4 been cybersecurity. As part of the new security  
5 rule, the cybersecurity standard for what plants have  
6 to have in place, we will adopt that.

7 MEMBER MAYNARD: Yes, but you are being  
8 required to adopt that, aren't you?

9 MR. ARENT: Right.

10 MEMBER MAYNARD: Yeah, okay. I think you  
11 were asking more on the voluntary basis.

12 CHAIR RAY: Yeah. Yeah, I just wondered  
13 how that encouragement worked.

14 MR. ARENT: To date, we have not actually  
15 discussed in any detail any new standard that we  
16 should consider applying.

17 CHAIR RAY: Um-hum.

18 MR. ARENT: So --

19 MEMBER SIEBER: That's sort of a  
20 difficult question, because you almost have to change  
21 your licensing.

22 MR. ARENT: Right, right.

23 MEMBER MAYNARD: That's right.

24 MR. ARENT: Exactly.

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1 MEMBER SIEBER: I'm not sure that that  
2 would work out when you have most of the equipment  
3 already there installed.

4 MR. ARENT: Right.

5 MEMBER SIEBER: I'm sure the  
6 Commissioners can say they wish you did.

7 MR. BAJESTANI: But, you know, as to the  
8 cable issue that we had, the discussions that we had  
9 with Electrical Branch, we did commit to use the  
10 latest IEEE standard for future installation of any  
11 new cable.

12 MEMBER SIEBER: Right. I can understand  
13 that.

14 CHAIR RAY: Well, okay. I guess I'm  
15 still pondering all of these open items and wondering  
16 what the heck they represent, but this is not the  
17 place to try and go through them. There is a lot of  
18 open items listed in SSER 21.

19 MEMBER SIEBER: I sort of got the feeling  
20 that there has not been an analysis, but just a  
21 retabulation of what has already happened at the  
22 staff level. And that's what the NUREG seems to  
23 represent is a status report of where the reviews  
24 were at the time they were suspended. Is that

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1 correct?

2 MR. MILANO: Yes, it was. And with the  
3 exception of what Mr. Arent said that when TVA  
4 recognized that they were going to be doing something  
5 different in an area which would cause that section  
6 to be reopened, the staff accepted the fact that it  
7 was-- that something that we would have considered to  
8 be closed, based on the SSER and the SSER supplements  
9 that were done in the past, we probably would have  
10 come to the conclusion that a topic should be closed.

11 But based on the fact that they told us  
12 that they were going to be doing something different  
13 and would be submitting that information, we just  
14 accepted the fact that it would stay open.

15 MR. ARENT: Yeah, I will give you an  
16 example. If you go to page 1-9, Line Item 132 on  
17 Combustible Gas Control Systems --

18 CHAIR RAY: 132?

19 MR. ARENT: Line Item 132.

20 CHAIR RAY: Yeah.

21 MR. ARENT: When Unit 1 and Unit 2 were  
22 originally designed, they included a hydrogen  
23 recombiner system as well as hydrogen igniters. As  
24 part of supplemental or recent changes in the

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1 requirements or regulations, basically, all we need  
2 is one now. We need the hydrogen igniters. And so  
3 for the Unit 2 project, we will not be installing  
4 hydrogen recombiners. We will actually be abandoning  
5 in place.

6 MR. BAJESTANI: Abandon in place. We  
7 already installed, but you would abandon them.

8 MR. ARENT: That's a change to what was  
9 clearly site approved for Watts Bar and for Watts Bar  
10 2. So this item remains open until our engineering  
11 is done, our analysis is complete to show that we can  
12 operate with just the igniters and don't need the  
13 recombiners. And at that time, we will make a  
14 submittal and this item will be resolved.

15 MEMBER SIEBER: There's a lot of plants  
16 that have done that already.

17 MR. ARENT: Yes.

18 CHAIR RAY: Well, it's comforting to see  
19 the fire protection is resolved. On the other hand,  
20 you wonder why that is resolved and some of these  
21 other things like emergency diesel engine lube oil  
22 system is open. But again, this is not --

23 MEMBER SIEBER: That would be months for  
24 me to review.

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1 CHAIR RAY: -- seismology. Yeah.

2 MEMBER SIEBER: If I had a copy of the  
3 SAR and the SER, you know, I'm sure that we can get  
4 it out of our files and put it on a disk. And then I  
5 could make sense out of all these references.

6 MR. MILANO: We do have the SAR on disk  
7 and we could provide it to Ms. Banerjee.

8 MEMBER SIEBER: That will help. I have  
9 got about 25 gigs left on my stick here.

10 MEMBER ABDEL-KHALIK: Does the fact that  
11 you have a licensing basis preservation program, is  
12 that inherently counter to the SRM encouragement to  
13 use updated standards?

14 MR. ARENT: Actually, we are using it  
15 more as a protective device than anything that would  
16 try to offset what the SRM might say. We are really  
17 using it more to prevent my engineering brethren from  
18 actually changing something without my recognition of  
19 it and not without my ability to let the staff know  
20 that we have made a change. So it's really more of a  
21 protective device for us. It's not there to prevent  
22 us from thinking outside the box or potentially  
23 recommending that we do something, you know,  
24 different in accordance with the SRM.

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1                   MEMBER ABDEL-KHALIK:    But if that is so,  
2                   the guidance that you are giving to engineering that  
3                   you want to preserve the licensing basis, isn't that  
4                   sort of inherently counter to this encouragement?

5                   MR. ARENT:   We don't believe it is.   And  
6                   so far my engineering folks have not been shy in  
7                   asking me if we can do something different.   So we  
8                   have not seen that as what I would consider anything  
9                   that would defer them from making a request at least.

10                  CHAIR RAY:   Any other questions on the  
11                  licensing basis?   Well, never knowing when this train  
12                  will go off the rails, I would like to use the  
13                  remaining 20 minutes before lunch productively, if  
14                  possible, Mr. Bajestani, and ask if you or someone  
15                  would introduce us at least to the transition and  
16                  responsibility to the extent it has occurred for the  
17                  engineering and construction work from what it was in  
18                  the past to what it is as we speak today.

19                  If there has been no change and  
20                  everything is as it was 25 years ago, why fine.   But  
21                  I would just like to begin to understand how the  
22                  responsibility for the design and the implementation  
23                  of the licensing basis in the physical plant is now  
24                  being managed.

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1 MR. BAJESTANI: I think we are going to  
2 cover that part of the presentation, unless you want  
3 me to cover it now.

4 CHAIR RAY: Well, we have got time and I  
5 thought it might fit into this period, if you can do  
6 it.

7 MEMBER STETKAR: Harold, if they are  
8 planning to do that, perhaps as a time-filler, I hate  
9 to call it that --

10 CHAIR RAY: It's a wise use of the time.

11 MEMBER STETKAR: Okay. Wise use, a  
12 productive use of the time then. If you had planned  
13 to address that issue in a presentation coming up  
14 this afternoon, we had questions earlier about shared  
15 systems, which is -- which are more kind of statement  
16 of fact, laundry list-type things. And I don't see  
17 that particular topic addressed, at least not in much  
18 detail in your presentation.

19 CHAIR RAY: Go ahead, John, that's  
20 correct.

21 MEMBER STETKAR: Yeah, I mean, could you  
22 tell us very briefly, in particular, what systems are  
23 shared between the two units? And this is just, you  
24 know, you mentioned emergency raw cooling water. You

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1 mentioned, I think, emergency diesel generators.  
2 What -- and if you could, please, don't just limit  
3 yourself to safety-related systems, also non-safety  
4 systems.

5 MR. BAJESTANI: We have quite a few  
6 systems actually. Raw cooling water is non-safety-  
7 related system. It is a shared system. We have all  
8 the electrical systems, that is 6.9. It actually  
9 starts from the switchyard and comes down, you know.

10 Switchyard, the start bus goes to 6.9 kV to 480 volt  
11 shutdown board and load, actually 220 volts. Those  
12 are all shared systems, including the DC systems, AC  
13 and DC systems.

14 MEMBER STETKAR: So it's a fully  
15 integrated shared AD/DC, effectively?

16 MR. BAJESTANI: Right.

17 MEMBER STETKAR: Okay.

18 MR. BAJESTANI: And then, obviously, we  
19 have some radiation monitor that --

20 CHAIR RAY: Well, wait. Before you go on  
21 then from electrical --

22 MR. BAJESTANI: Sure.

23 CHAIR RAY: -- each unit has its own  
24 emergency diesel generators, I presume?

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1 MR. BAJESTANI: No, no. We have four  
2 diesel generators that is assigned for two-unit  
3 operation.

4 MEMBER STETKAR: So this is more like a  
5 configure -- I'm somewhat familiar with Browns Ferry.  
6 This looks a lot like Browns Ferry Units 1 and 2  
7 then?

8 MR. BAJESTANI: Exactly.

9 MEMBER STETKAR: Okay. Thanks.

10 MR. BAJESTANI: Not Unit 3.

11 MEMBER STETKAR: That may not help other  
12 Committee Members.

13 MR. BAJESTANI: It doesn't look like San  
14 Onofre at all.

15 MEMBER STETKAR: It does not look like  
16 San Onofre.

17 CHAIR RAY: Okay. Thanks.

18 MEMBER STETKAR: That helps me at least  
19 on the electrical side if not other Committee  
20 Members, but I know what it looks like then.

21 MR. BAJESTANI: 40gs. They are both  
22 units.

23 MEMBER STETKAR: Yes.

24 MEMBER SIEBER: Yeah.

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1 MEMBER BONACA: Each one of them is given  
2 a driving RCCS.

3 MR. BAJESTANI: Yes. And obviously, as  
4 we go through the completion of this project and when  
5 we get into the testing part of it, we have to test  
6 this diesel generator based on the load on Unit 2,  
7 you know, provide the accident signal, loss of off-  
8 site power, ready for all the loads that are tied to  
9 Unit 2 that are going to become sequenced and start  
10 under, basically, sequenced timing. They are going  
11 to start and, you know, load through the diesel  
12 generator.

13 That's the part that has to be done as we  
14 go through the completion of this project, the  
15 testing part of it. But the electrical system,  
16 essentially, is common systems.

17 MEMBER BONACA: Are you going to recover  
18 the power for Unit 2 also? But to raise the power  
19 level for Unit 2?

20 MR. BAJESTANI: No, no. We want to stay  
21 actually on the megawatt-thermal. We're going to  
22 stay with the original license 34 --

23 MR. MILANO: 3411.

24 MR. BAJESTANI: -- 11. On the mechanical

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1 side of it, under balance of plant part of it, we are  
2 changing the low-pressure turbine, high-pressure  
3 turbine and moisture separator reheater as a result  
4 of changing all those with the new design. We are  
5 expecting to get about 50 or 55 megawatts more  
6 electrical output than what we are getting on Unit 1.

7 MEMBER MAYNARD: Yeah, now, from what I  
8 understand, you intend to stay with the original 3411  
9 to get through this licensing process. Then you may  
10 try to recapture instrument uncertainty and some of  
11 the others --

12 MR. BAJESTANI: That's correct.

13 MEMBER MAYNARD: -- after you get Unit 2  
14 up and running and licensed?

15 MR. BAJESTANI: That's correct.

16 MEMBER SIEBER: I presume then that the  
17 balance of plant construction effort will take into  
18 account the fact that you may some day want to  
19 upgrade to thermal power.

20 MR. BAJESTANI: Actually, on the  
21 megawatt-thermal --

22 MEMBER SIEBER: Yeah.

23 MR. BAJESTANI: -- the philosophy, this  
24 is again one of the lessons learned that we had from

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1 Browns Ferry, we decided on this project, actually,  
2 to stay with the original design not to consider --  
3 because just the magnitude of the work that we have  
4 to do if -- there's going to be a lot of changes.

5 MEMBER SIEBER: Okay.

6 MR. FREEMAN: We are making sure that the  
7 hardware will support the entire power rate once we  
8 are ready to do that.

9 MR. BAJESTANI: No, I think what he is  
10 referring to is not that 1.4 percent that we are  
11 going to get as a result of the LEFM. He is actually  
12 talking about the power uprate.

13 MEMBER SIEBER: Right.

14 MR. BAJESTANI: Which we haven't looked  
15 at.

16 MEMBER SIEBER: You may be able to get 6,  
17 7, 8 percent.

18 MR. BAJESTANI: Yes.

19 MR. FREEMAN: I was dealing with the --

20 MR. BAJESTANI: No, not that 1.4 percent.

21 MR. FREEMAN: -- concerned team.

22 MR. BAJESTANI: Okay.

23 MEMBER MAYNARD: Back to the shared  
24 systems. One of the things I think you and the staff

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1 is going to have to be real careful of, and that's  
2 the testing program, all these integrated systems and  
3 I know that we are not here for licensing Unit 1, but  
4 as you are doing the testing for the Unit 2, I think  
5 also you have to make sure that there is no adverse  
6 implications to Unit 1 from these shared systems.

7 MEMBER SIEBER: Right.

8 MEMBER MAYNARD: Especially in some of  
9 the electrical systems and stuff.

10 MR. BAJESTANI: Exactly. Actually, I  
11 have a presentation on that. What are we doing to  
12 make sure that we are not impacting Unit 1 operation?

13 CHAIR RAY: Yes, we will be looking  
14 forward to that, yeah. Charlie?

15 MEMBER BROWN: On talking about four  
16 diesel generators that are shared for the entire  
17 plant, two plants, when you are operating. Does that  
18 -- if you have an event in one plant, and so the  
19 emergency -- that system is up and it is doing what  
20 it is supposed to do now, you know, and then later  
21 subsequent is it sized still to handle a subsequent  
22 event in the remaining plant or is there an  
23 assumption that the remaining plant will not -- you  
24 know, is it sized to handle both plants

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1 simultaneously?

2 Not at the same time, but I mean, once  
3 you have already had an event in one plant, now you  
4 could be a day or half a day or five hours and all of  
5 a sudden you have an event in the other plant, can it  
6 then handle those events power-wise also?

7 MR. BAJESTANI: Accident signal on one  
8 unit and hot standby on the other unit.

9 MEMBER BROWN: Okay.

10 MR. BAJESTANI: That's what is designed.

11 MEMBER BROWN: So that is -- okay. Let  
12 me ask the question again. Does that mean if you  
13 have an event in one, you have to go to hot standby  
14 on the other when it occurs? Is that -- may -- did I  
15 screw that up? No, I'm trying to understand when you  
16 say--

17 MR. BAJESTANI: No, that doesn't mean  
18 that you have to go to shut the unit down.

19 MEMBER BROWN: Are both units operating?

20 MEMBER SIEBER: You don't have to  
21 shutdown.

22 MEMBER BROWN: Okay. And then one has an  
23 event.

24 MR. BAJESTANI: Right.

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1 MEMBER BROWN: So the system kicks off,  
2 starts sequencing dose, whatever it is.

3 MR. BAJESTANI: Right.

4 MEMBER BROWN: And I'm not talking -- I'm  
5 not trying to imply there is a double failure, but  
6 once you are into an event sequence, that doesn't  
7 mean something can't happen in the other plant that  
8 then asks for a similar demand of its systems. Is  
9 the plant sized to handle that or does the other  
10 plant have to be -- now once an event occurs, do you  
11 then have to go to some other condition, like reduced  
12 power, something like that, shut it down, blah, blah,  
13 blah, whatever while you are doing that?

14 MR. BAJESTANI: What is the other event?  
15 Is it loss of power?

16 MEMBER BROWN: I have no idea. I have no  
17 idea.

18 MR. BAJESTANI: Okay. I guess we have to  
19 define that, because loss of off-site power,  
20 obviously, yeah, you're going to shut the unit down,  
21 yeah.

22 MEMBER SIEBER: Well, if --

23 MEMBER BROWN: I'm sorry, Jack.

24 MEMBER SIEBER: The ultimate would be a

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1 loss of off-site power and LOCAs in each plant. Do  
2 you have enough diesel capacity to do that? Probably  
3 not.

4 MR. BAJESTANI: No. Go ahead, Steve.

5 MR. HILMES: Let me answer this.

6 MR. BAJESTANI: Add that.

7 MR. HILMES: Okay. The way the diesels  
8 are set up at Watts Bar is, essentially, you have a  
9 Train A that is predominant at Unit 1 and a Train A  
10 that is predominant at Unit 2. The same thing on the  
11 B Train, okay. The only pumps on those boards that  
12 are really, really shared for both units is ERCW,  
13 okay, large pumps. Those pumps won't be any  
14 different than what we have now.

15 You require 4 ERCW, one on each diesel,  
16 for one unit operation and one on each diesel for two  
17 unit operation.

18 MEMBER SIEBER: Okay.

19 MR. HILMES: Okay. So unlike the way  
20 Browns Ferry works with a complicated logic to decide  
21 which unit is in the accident and all this common  
22 accident signal-type thing, essentially,  
23 electrically, electrically I'm talking now, if I put  
24 an accident on both units, at most I get is one set

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1 of safety injection on each of the diesels. Okay?  
2 It's not nearly as complicated as some of the other  
3 systems out there.

4 MEMBER BROWN: So is that answer a little  
5 bit different?

6 MR. HILMES: It is.

7 MEMBER BROWN: Is that an event that it  
8 would handle -- the power is there to handle the  
9 safeguard systems for both plants simultaneously?  
10 I'm trying to put this in very simple understandable  
11 language. Is that a yes?

12 MR. HILMES: From a diesel generator  
13 standpoint, that is correct. From an off-site power  
14 standpoint, we analyze one unit and accident at a  
15 time.

16 MEMBER SIEBER: Okay. All right.

17 MEMBER BROWN: That's the only way I --  
18 okay.

19 MR. HILMES: One accident.

20 MEMBER BROWN: Okay. All right. That  
21 clarifies. I was just trying to get an understanding  
22 of how that worked. Go ahead.

23 MEMBER ABDEL-KHALIK: Historically --

24 CHAIR RAY: John? I'm sorry, Said?

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1 MEMBER ABDEL-KHALIK: I was just going to  
2 ask historically, have the MSPI indications for the  
3 diesels been green?

4 MR. ARENT: Frank, can you answer that  
5 question on the MSPI indicators for the diesels?  
6 Have they been green historically?

7 MR. KOONTZ: I haven't been following the  
8 MSPI, but the diesels have been performing well and  
9 they meet the reliability standards, so I'm assuming  
10 that it's looking good for the diesels.

11 MR. ARENT: We can follow-up. We can get  
12 a follow-up answer on that, specifically, the MSPIs.

13 CHAIR RAY: Okay.

14 MEMBER BROWN: Are there requirements  
15 that have been -- if diesels are out of service to  
16 change the one diesel/two diesel, that you change the  
17 plant configurations allowed, power levels allowed?

18 MR. BAJESTANI: Power level? Not the  
19 power level.

20 MEMBER BROWN: I threw a bunch of things  
21 in.

22 MR. BAJESTANI: No, not the power level.

23 CHAIR RAY: There is limiting conditions  
24 for operation, I'm sure.

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1 MR. BAJESTANI: Right. You've got a 7  
2 day requirement, 7 days or we've got 14 days.

3 CHAIR RAY: All right.

4 MR. MILANO: 14 days.

5 MR. BAJESTANI: 14 days there.

6 MEMBER BROWN: All right.

7 MR. BAJESTANI: Then you have to  
8 basically shut the unit down.

9 MEMBER BROWN: You have answered my  
10 question.

11 CHAIR RAY: John, did you have a  
12 question?

13 MEMBER STETKAR: Only I'm not convinced  
14 that the laundry list is complete yet.

15 MR. BAJESTANI: No, no.

16 MEMBER STETKAR: So I mean, I didn't  
17 think it was and we have 8 minutes to complete it.

18 MR. BAJESTANI: There are other systems  
19 that -- Steve, do you want to expand on that?

20 MEMBER STETKAR: You started talking  
21 about radiation monitors. Well, we got to radiation  
22 monitors and we kind of got off.

23 MR. BAJESTANI: Yeah. Steve, do you want  
24 to go ahead and cover --

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1 MR. HILMES: I think Bill has got  
2 something.

3 MR. BAJESTANI: -- the other? Oh, Bill?

4 MR. CROUCH: This is Bill Crouch,  
5 mechanical. You want -- this -- just sitting here  
6 off the back of our envelope here we're writing stuff  
7 down. We've got the ERCW, central raw cooling water.  
8 You've got the raw cooling water, the non-segregated  
9 raw cooling water. You've got the emergency diesel  
10 generator and its attendant fuel oil and starting air  
11 systems. You've got the component cooling system  
12 that supplies the cooling water to the segregated  
13 coolers. And you've got --

14 MEMBER STETKAR: That's completely -- CCW  
15 is completely shared?

16 MR. CROUCH: No, CCS.

17 MEMBER STETKAR: CCS.

18 MR. CROUCH: Cooling system, component  
19 cooling.

20 MR. BAJESTANI: And all five pumps  
21 actually has been turned over as part of the -- which  
22 is for both units, they have been turned over to  
23 operation for part of the Unit 1 start-up.

24 MR. CROUCH: You have got like ERCW that

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1 provides one side of those heat exchangers and the  
2 other side of those heat exchangers provides a  
3 cooling to your safety-related heat exchangers.

4 MEMBER STETKAR: But this is the safety-  
5 related component cooling?

6 MR. CROUCH: Yes, yes, whatever you call  
7 it.

8 MEMBER STETKAR: Okay, right. Thanks.  
9 Keep going.

10 MR. HILMES: Yeah, a lot of people  
11 confuse it and call it the wrong thing.

12 MEMBER STETKAR: They have different  
13 names in different plants.

14 MR. CROUCH: Then you have got the HVAC  
15 system for the Aux building as common. Control air  
16 and service air are common. What I call chillers for  
17 the ice condensers are common, non-safety related.  
18 Auxiliary building gas treatment system, the system  
19 that draws the secondary containment down to a  
20 negative pressure.

21 The emergency gas treatment system  
22 filters, the system that draws the annulus down to a  
23 negative pressure, the filters are common. And Steve  
24 talked about the AC and DC systems, the RAD monitors

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1 are common. High-pressure fire protection has common  
2 things to it. Thank you.

3 CHAIR RAY: Well, it will be a  
4 challenging start-up test program.

5 MR. CROUCH: Yes. And let me say one  
6 more thing. On things like the ERCW and the raw  
7 cooling water and the component cooling system, what  
8 we have done is we have gone and created a steady-  
9 state computer flow, computer calculation modeling  
10 the system in both -- with two units operation in the  
11 various modes of operation for one unit in accident  
12 and one unit in hot shutdown.

13 We have gone through all the various  
14 operating scenarios you have to encounter with two  
15 units of operation to make sure that we have enough  
16 capacity in the system to handle two units. One of  
17 the things we are doing this is, obviously, the plant  
18 was originally built for two units, but over time,  
19 pumps degrade.

20 When we originally installed the ERCW  
21 pumps, they never quite met their original design  
22 characteristics. We are in the process of replacing  
23 those pumps with new pumps. And so we have taken all  
24 the new characteristics of new equipment and the

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1 current characteristics of equipment and put in these  
2 computer flow models to make sure that we are going  
3 to have enough capacity on these water systems to  
4 handle two unit operation.

5 CHAIR RAY: What is the ultimate heat  
6 sink?

7 MR. CROUCH: Tennessee River.

8 MEMBER SIEBER: Yeah.

9 CHAIR RAY: Okay.

10 MEMBER SIEBER: It's official.

11 CHAIR RAY: All right. Any other  
12 questions from Members? All right. We will adjourn  
13 for lunch and resume then at 1:00.

14 (Whereupon, the meeting was recessed at  
15 11:54 a.m. to reconvene at 1:00 p.m. this same day.)  
16  
17  
18  
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A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

1:00 p.m.

CHAIR RAY: Okay. We're a little late. Come to order, please. And the applicant has got the floor.

MR. BAJESTANI: Thank you. In July of 2007, the NRC Commission approved the NRC staff recommendation for licensing and inspection program for -- approach actually for Unit 2, which is essentially the Unit 1 is being used as a reference for this inspection and licensing approach.

When we received that letter, we actually went to -- we received that in July. And in August of 2007, we went to TVA Board of Directors to get, essentially, a recommendation to approve completion of Watts Bar Unit 2 Project. We actually had, essentially, four different studies before we made that recommendation.

We did a power supply planning study, which, basically, that study showed that we need some base load generation. Even today with the economy the way it is, we still need Watts Bar. We can use Watts Bar today, Watts Bar Unit 2. The power supply planning study was completed. Then what we did, we

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1 actually mentioned this before, we put 100 engineers,  
2 we did, what I'll call, detailed scoping, estimating  
3 and planning studies.

4 It's the same process that we used at  
5 Browns Ferry, for Browns Ferry Unit 1 to actually  
6 estimate the costs and schedule and the condition of  
7 the equipment. We did that study and the study,  
8 essentially, came up and told us what the cost and  
9 schedule is going to be and also it showed that the  
10 plant equipment and material condition is in good  
11 shape.

12 Also, Watts Bar Unit 2 is identical to  
13 unit -- Watts Bar Unit 1 and Sequoia Unit 1 and 2,  
14 which is a proven technology with a good operating  
15 capacity factor. Actually, it is over 86 percent  
16 operating capacity factor so far.

17 We looked at the project risks study. We  
18 actually looked at the financial and that was another  
19 study that we did. Again, based on all these various  
20 studies that we did, we went ahead to the board and  
21 made a recommendation to approve this project.

22 Next one. The guiding principle and  
23 philosophy behind the construction completion is:  
24 No. 1 to make sure that public health and safety; No.

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1 2 is make sure that, basically, whatever we do on the  
2 Unit 2 is not going to impact operation of Unit 1.  
3 Essentially, we put the right process and procedure  
4 in place to avoid any interruption of, essentially,  
5 any-- creating any new -- creating any problems for  
6 applicant site.

7 And fidelity of the Unit 1 and Unit 2 as  
8 we talked about the design basis of Unit 1 and Unit 2  
9 is going to be identical. And maintaining a  
10 consistent, predictable and transparent process for  
11 completing -- completion of the licensing part of the  
12 Watts Bar Unit 2.

13 What we did -- another part of the  
14 philosophy behind completion of Watts Bar Unit 2 was  
15 we looked at any modification, any changes that Watts  
16 Bar Unit 1 has done since start-up, which was back in  
17 1996. And any new capital improvement project that  
18 they had for the next five years, which started  
19 October of 2007, actually. We incorporated any  
20 improvement from, like I said, start-up and anything  
21 that was in the plan for the next five years, we  
22 incorporate all that into the scope of what we were  
23 going to do for Watts Bar Unit 2.

24 On top of that, I have already mentioned

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1 some additional improvement of your making on Watts  
2 Bar Unit 2, which eventually Watts Bar Unit 1 is  
3 going to do the same modification and bring both  
4 units, essentially, to be identical.

5 MEMBER ABDEL-KHALIK: What are the main  
6 items in that five year plan of capital improvement  
7 for Unit 1?

8 MR. BAJESTANI: Some of the issues --  
9 well, let me -- Steve, do you want to address  
10 electrical issues, if there was anything on the  
11 electrical issues? I know feedwater heater was one.

12 MR. HILMES: Steve Hilmes with Electrical  
13 I&C. They are doing an upgrade to their feedwater  
14 system to, essentially, put in a digital feedwater  
15 system. Let's see, there is the changes we're  
16 actually doing for the -- eliminating the hydrogen  
17 recombiners is in that five year plan. And the  
18 elimination of the pass facility is in that five year  
19 plan.

20 Frank, do you remember any other ones?  
21 Oh, yes, and as part of the EPA issues with freon, we  
22 are replacing our, what I call, chillers. In  
23 reality, that is being -- for the ice condenser, that  
24 is actually being done for -- under the Unit 2

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1 project.

2 MR. BAJESTANI: So essentially, what we  
3 did, we looked at the list, whatever it was in the  
4 next five year plan, and we incorporate that into the  
5 project. And also, like I said, on some of the  
6 specific improvements that we are doing on Unit 2,  
7 which Watts Bar Unit 1 eventually is going to catch  
8 up with some of the changes that we are making on  
9 Unit 1 -- on Unit 2.

10 On the project oversight. Essentially,  
11 we have three major contractors that are being  
12 awarded for Watts Bar Unit 2. We have Westinghouse,  
13 which is doing the entry plus part of it, that's  
14 calculations, analysis and equipment like reactor  
15 coolant pump, Eagle 21. We are going through  
16 Westinghouse and purchasing all that through  
17 Westinghouse.

18 Then we have Bechtel, which is  
19 essentially the EPC, Engineering Procurement and  
20 Construction. And then we have Siemens, which is  
21 doing all the turbine generator and auxiliary work.

22 But what we have, we have one QA plant,  
23 which governs all contractors, vendors and  
24 subcontractors.

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1 CHAIR RAY: How is this arrangement  
2 different than what Unit 2 experienced before the  
3 deferral?

4 MR. BAJESTANI: Okay. The difference  
5 between what we have today and what we had when we  
6 went through Watts Bar Unit 1, Watts Bar Unit 1,  
7 essentially, was managed by TVA. We didn't have an  
8 EPC actually. What we are doing, we have EPC, which  
9 is Bechtel is doing engineering procurement  
10 construction and then we have, like I said,  
11 Westinghouse, which is doing the entry plus side, and  
12 then Siemens which is doing turbine generator and  
13 auxiliary.

14 What we have created for Unit 2, we have  
15 created, what we call, parallel organization,  
16 essentially. Like if Bechtel has got construction  
17 manager, engineering manager, refurbishment manager  
18 and QA manager, and I can go on, we have created  
19 identical organization in the TVA side for the  
20 oversight, which we did not have that when we went  
21 through Watts Bar Unit 1.

22 CHAIR RAY: Well, it seems like there  
23 must have been some turnover from what had been a  
24 responsibility at TVA to primarily, I guess, Bechtel

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1 now take place. Is that right?

2 MR. BAJESTANI: The turnover?

3 CHAIR RAY: The turnover of design  
4 responsibility.

5 MR. BAJESTANI: The overall  
6 responsibility still falls under TVA. But as far as  
7 the turnover of what we have completed and what we  
8 turn over to Bechtel, yes, there was a process, you  
9 know, basically, that says here it is, Bechtel. This  
10 is what is left to do.

11 CHAIR RAY: Well, I guess I'm trying to  
12 understand somebody is responsible for the  
13 engineering. Is that still TVA?

14 MR. BAJESTANI: Yes. Ed Freeman, he is  
15 our engineering manager. Essentially, he has got the  
16 responsibility for overall engineering.

17 CHAIR RAY: Well, that's not oversight  
18 though. I'm talking about that you have it under a  
19 heading here of "Oversight." I'm trying to figure  
20 out who has the responsibility for doing,  
21 implementing the engineering design?

22 MR. BAJESTANI: Okay. The engineering  
23 design actually, like I said, Bechtel actually has  
24 staff. We have over 700 engineers, actually, that--

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1 CHAIR RAY: That used to be TVA?

2 MR. BAJESTANI: That used to be TVA.

3 CHAIR RAY: All right. Now, so be  
4 definition --

5 MR. BAJESTANI: Some call it this.  
6 Excuse me, some call it.

7 CHAIR RAY: All right. Well, okay.  
8 Whatever part of it used to be TVA is now Bechtel.  
9 There must have been some turnover take place of  
10 that. I mean, that's the only way I can think about  
11 it is somebody is implementing, doing the design  
12 engineering and that's now somebody else. And that  
13 means there has to be a turnover. Otherwise, the  
14 engineer has -- who is working today doing the design  
15 work, I don't know what he assumes about the design  
16 work done previously.

17 MR. BAJESTANI: Well, okay. Let me  
18 explain this and then I'm going to turn it back to  
19 Ed, maybe he can expand on this. When we put the  
20 contract together for Bechtel to do engineering work,  
21 it was -- the scope of engineering is going to be,  
22 essentially, do what we have done on Unit 1, plus  
23 some improvement. Okay. Modifications have been  
24 done since the start-up of Watts Bar Unit 1 and

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1 again, the five year plan.

2 Here is the scope of this work. You are  
3 going to establish baseline. You're going to walk  
4 down every system. You've going to look at all  
5 calculations, update the calculations. You're going  
6 to look at all the programs like 89.10, motor-  
7 operated valve, establish the calculations  
8 requirement for any new changes that we have to do on  
9 motor-operated valves.

10 So it was a scope that was turned over,  
11 basically, that says, Bechtel, here is your scope of  
12 work. The oversight part of it is really, like I  
13 said, we have created, essentially, on the  
14 engineering side we have 11 very experienced basic  
15 TVA people that are overseeing what Bechtel is doing  
16 and helping case-by-case, like here it is, here is  
17 how we did it and here is what we need to do.

18 Does that answer your question?

19 CHAIR RAY: Well, I'm thinking about it.

20 I mean, I imagine myself, having been in this  
21 position before, with some design problem. I would  
22 expect Bechtel to say don't look at me, that was done  
23 by these guys over here. I'm just making it like  
24 Unit 1. And that's what I'm wondering about.

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1           Who is in charge of the design? And how  
2 is that being effected or is it just a matter of make  
3 it like it was at Unit 1? I don't think that's the  
4 case. That's not what you are saying, so --

5           MR. BAJESTANI: Well, the direction is  
6 really to follow the design basis, but if they run  
7 into a problem and there are issues that we want to -  
8 - we have to do something different, based on the  
9 calculations or based on the new program, Bechtel  
10 guys they come in and go through Ed and his people.  
11 And they say specifically, okay, this is what we've  
12 got to do different or what's your recommendation?  
13 Ad End and his staff, they make a recommendation here  
14 is how we're going to approach it.

15           MR. FREEMAN: Bechtel is doing the  
16 engineering. And while they are not effectively  
17 starting from scratch, they are doing the same  
18 programs as Masoud described, you know, the baseline  
19 verification program. They were looking at every  
20 calculation that has been produced. The ones that  
21 are for both -- that can be for both units, they are  
22 reviewing and making sure that that's correct and  
23 making them applicable to Unit 2.

24           The ones that they have to do a pure Unit

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1 2 calculation, they do that. So the mantra is kind  
2 of, you know, make it like Unit 1. We are doing the  
3 same programs that we did for Unit 1 to make sure  
4 that that design is sound. But Bechtel is doing that  
5 work for us.

6 CHAIR RAY: Okay. So I would take it  
7 from what you just said that Bechtel would accept  
8 responsibility for the adequacy of the design.

9 MR. BAJESTANI: Yes.

10 CHAIR RAY: Okay. Well, that's, to me, a  
11 turnover from TVA to Bechtel. Okay.

12 MR. BAJESTANI: Yes.

13 MR. FREEMAN: When you say turnover, I  
14 mean, we didn't walk up and hand them anything or  
15 have a turnover process where they signed you had it,  
16 we've got it.

17 CHAIR RAY: Okay.

18 MR. FREEMAN: But they have more or less-  
19 - well, they are pretty far into that work right now.  
20 And it is all a matter of, you know, they start out  
21 with a list of calculations and other design  
22 documents that must be reviewed or produced and --

23 CHAIR RAY: Well, when they review them,  
24 they take the responsibility for the correctness, I

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1 assume?

2 MR. FREEMAN: Yes.

3 CHAIR RAY: Or should I assume that?

4 MR. FREEMAN: Yes, that's true.

5 CHAIR RAY: Okay.

6 MEMBER BROWN: Can I ask a question? Who  
7 is responsible for -- that's a design engineering  
8 turnover. There is still a site that has to be  
9 managed, all the construction work done. You talk  
10 about bringing in Westinghouse for this, bringing  
11 these components, Siemens coming into TVA's  
12 auxiliary, etcetera. Do Westinghouse and Bechtel --  
13 I mean, Siemens work for Bechtel? Are they  
14 subcontractors to Bechtel? Are they subcontractors  
15 to TVA?

16 MR. BAJESTANI: Siemens and Westinghouse,  
17 they are direct contractor to TVA.

18 MEMBER BROWN: So all the work they do  
19 on-site is under whose tutelage?

20 MR. BAJESTANI: Under one QA plant. The  
21 QA plant that establishes actually TVA, a Bechtel QA  
22 plant, so the work that they are doing is actually  
23 under Bechtel care.

24 MEMBER MAYNARD: Do you have an overall

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1 construction manager?

2 MR. BAJESTANI: Yes, thank you, yes.

3 MEMBER MAYNARD: Is that a TVA --

4 MR. BAJESTANI: Bechtel has over our  
5 construction manager and TVA has construction  
6 manager.

7 MEMBER MAYNARD: Okay. But is the TVA  
8 construction manager that if there is an issue  
9 between Westinghouse and Bechtel that the TVA  
10 construction manager would be it?

11 MR. BAJESTANI: That is correct.

12 MEMBER BROWN: Who is in charge was what  
13 I was asking.

14 MR. BAJESTANI: And the way we do this,  
15 actually, we have had meetings after meetings with  
16 Siemens, Bechtel, TVA. Siemens, Bechtel, TVA and  
17 Westinghouse was -- we actually defined roles and  
18 responsibilities, written who is doing what. Like  
19 when Siemens is doing a certain job, they need  
20 support from Bechtel on certain things.

21 So that's all been defined, but the  
22 program again, if you look at it just from the  
23 perspective of QA plant, every procedure, every  
24 process that new, it goes through essentially Bechtel

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1 approving before it actually goes in the site.

2 MEMBER BROWN: There is a conflict of  
3 work? Siemens has a conflict because they can't get  
4 Bechtel to tell them their work takes precedence over  
5 somebody else. Does that settle it or do they come  
6 to TVA now for adjudication?

7 MR. BAJESTANI: They try to settle it  
8 themselves. It doesn't get resolved, it actually gets  
9 escalated and gets to our construction manager.

10 MEMBER BROWN: Either TVA --

11 MR. BAJESTANI: TVA.

12 MEMBER BROWN: TVA.

13 MEMBER ABDEL-KHALIK: Do you actually  
14 have all the engineering calculations for Unit 1?

15 MR. BAJESTANI: What do you mean?

16 MEMBER ABDEL-KHALIK: All calculations  
17 that were done for design calculations, all the  
18 engineering calculations are housed and controlled by  
19 TVA?

20 MR. BAJESTANI: Yes, yes.

21 MEMBER ABDEL-KHALIK: Rather than any of  
22 the vendors?

23 MR. BAJESTANI: Yes. Unit 1, all TVA  
24 calculations we actually have a database, it is

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1 maintained by TVA design.

2 MEMBER ABDEL-KHALIK: But there must have  
3 been a lot of Westinghouse calculations as well.

4 MR. BAJESTANI: Right.

5 MEMBER ABDEL-KHALIK: Do you have control  
6 over those?

7 MR. BAJESTANI: Contractually. We  
8 actually look at the result of some of those studies,  
9 calculations, but Westinghouse has those  
10 calculations.

11 MEMBER ABDEL-KHALIK: So how is that  
12 information conveyed to Bechtel?

13 MR. BAJESTANI: There is a Letter,  
14 essentially, of Agreement between Westinghouse and  
15 TVA -- I mean, Bechtel that basically says you can  
16 use this information for this project only. Not to,  
17 essentially, release it to the third-party. So that  
18 has been established.

19 MEMBER BROWN: It's a non-disclosure  
20 agreement?

21 MR. BAJESTANI: That's right. That's  
22 correct.

23 MR. FREEMAN: That is correct.

24 MEMBER MAYNARD: That's similar to what

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1 has been done at most plants, because usually in SSS  
2 and the AE you are --

3 MR. BAJESTANI: That's right.

4 MEMBER MAYNARD: I think Bechtel and  
5 Westinghouse are used to arguing about that.

6 MR. KOONTZ: This is Frank Koontz in  
7 engineering. We have -- like Masoud mentioned, there  
8 is a proprietary agreement between Westinghouse and  
9 Bechtel and it has been working very well. They  
10 release documents and on their document they will say  
11 this may be provided to Bechtel. So even though the  
12 contracts between TVA and Westinghouse, they give us  
13 permission and release that information to Bechtel,  
14 so they can finish the design.

15 MEMBER MAYNARD: The biggest conflict I  
16 have seen has been more between the construction  
17 organization and the design organization as to whose  
18 fault it is that something doesn't work. Is it a  
19 design problem or did the constructor put it together  
20 wrong.

21 CHAIR RAY: Proceed.

22 MR. BAJESTANI: Okay. I mentioned about  
23 the, essentially, three major contractors. The  
24 oversight is provided especially and the Bechtel it's

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1 provided by field managers, supervisor observations.

2 We have quality control inspections of the water  
3 activities that is specified by engineering, any  
4 engineering requirements, any inspection requirements  
5 that is in the package. Obviously, QC is going to be  
6 doing the inspection.

7 Then we have the Bechtel QA. These are  
8 all Bechtel. Bechtel quality assurance oversight of  
9 Appendix B requirements, which, obviously, they do  
10 some sampling of various process procedures,  
11 implementation. And then what we have is in the  
12 Bechtel side Project Management Review Committee.  
13 This is a committee that on a weekly basis they look  
14 at all repairs, problems, evaluation reports, which  
15 is a part of the corrective action plan. They look  
16 at that. They look at the disposition and they look  
17 at the train. These are essentially what we have on  
18 the Bechtel side of it.

19 The on the TVA oversight of the EPC, we  
20 have the TVA management which both -- again in all  
21 engineering procurement and construction, like in  
22 engineering, we have 36 TVA actually that is  
23 overseeing what Bechtel is doing on engineer side.

24 MEMBER ABDEL-KHALIK: Let me go back to

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1 the issue of documentation.

2 MR. BAJESTANI: Yes.

3 MEMBER ABDEL-KHALIK: Does Bechtel review  
4 the calculations that were done by Westinghouse?

5 MR. BAJESTANI: Bechtel review the  
6 calculations by Westinghouse.

7 MR. KOONTZ: This is Frank Koontz again.  
8 Generally, we don't have Bechtel do review of the  
9 Westinghouse calculations. Those are done under the  
10 Westinghouse QA Program. TVA may look at the results  
11 of those calculations and see if they remain  
12 reasonable, if they are consistent with Unit 1, if  
13 something else needs to be done. But we generally  
14 don't have Bechtel do that review function.

15 MEMBER ABDEL-KHALIK: So by and large,  
16 any calculations that were done by Westinghouse for  
17 Unit 1, they are pretty much taken as gospel by  
18 Bechtel for Unit 2?

19 MR. KOONTZ: Well, no.

20 MEMBER ABDEL-KHALIK: Oh.

21 MR. KOONTZ: This is Frank again. On --  
22 what we are doing in the area of calculations for  
23 Westinghouse is they are redoing some calculations.  
24 For example, they are redoing the large-break LOCA

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1 calculation for Unit 2. They are redoing the small-  
2 break LOCA calculation for Unit 2. And that will  
3 resolve any deficiencies that have been noted over  
4 the years in those methodologies.

5 In addition, they are evaluating other  
6 Unit 1 methodologies and calculations to see if they  
7 are still bounding from Unit 1 over to Unit 2. As  
8 part of the issue, we replaced the steam generators  
9 on Unit 1, so some of those calcs have been upgraded  
10 to show replacement steam generators.

11 So we have to go back to the older  
12 version of the Unit 1 calculations, evaluate it, see  
13 if there is anything that needs to be done to those  
14 calculations and if so, have those calculations  
15 redone. And that's all part of the Westinghouse  
16 scope of supply.

17 MEMBER ABDEL-KHALIK: Okay. Thank you.

18 MR. BAJESTANI: Okay. I mentioned about  
19 the TVA management oversight. In engineering, we  
20 have 36 TVA people that essentially watching and  
21 overseeing what Bechtel is doing in the procurement.  
22 We have 5 people in construction. We have got 9  
23 people overseeing what Bechtel is doing.

24 Then we have our TVA quality assurance

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1 manager oversight which is 7 people. And then we  
2 have a TVA Board Advisory Committee for Watts Bar  
3 that was assigned by the board actually to watch the  
4 progress of Watts Bar Unit 2. Then what we have is  
5 Construction Completion Management Review Committee,  
6 which is a committee that -- again, we look at PERs.

7 If this is Problem Evaluation Report, any issue that  
8 comes up in the field or on the engineering side of  
9 it, we look at the average trend. We look at any NRC  
10 submittals. And we look at audits and assessment.

11 And on top of that we actually use  
12 independent industry expert. This is what -- we just  
13 recently had an INPO assist visit, which we asked  
14 specifically for that to come in and look at certain  
15 areas. Any questions?

16 Continuing on the project oversight.  
17 This just to give you some staffing level where we  
18 are so far. Engineering --

19 MEMBER BONACA: That's really not  
20 oversight, right? I mean, Bechtel here has 1,500  
21 people. It has engineers doing work.

22 MR. BAJESTANI: Are you talking about the  
23 engineering, TVA engineering?

24 MEMBER BONACA: Yeah. When I look at

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1 this table, you know, if you count the number on the  
2 Bechtel side, it's about 1,300 people. So this must  
3 be the work force that does the actual engineering  
4 work.

5 MR. BAJESTANI: That's correct.

6 MEMBER BONACA: So the oversight probably  
7 is what the TVA oversight?

8 MR. BAJESTANI: It's the TVA oversight.

9 MEMBER BONACA: Okay. Good. All right.

10 MR. BAJESTANI: Yeah, yes. Again, just  
11 the numbers give you the number of engineering.  
12 Bechtel manual, non-manual, which non-manual just  
13 defines it as field engineers, planners, procedure  
14 writers. And then project control, which is really  
15 scheduling and cost. And then nuclear assurance,  
16 which Bechtel has got 33 of them and TVA 6, actually  
17 7.

18 And then the supply chain procurement  
19 specifically, we've got 33 Bechtel and 7 TVA.  
20 Engineering is fully staffed, at this point, you  
21 know. The overall staffing for Watts Bar, we are  
22 looking at going on the Bechtel side of it going to  
23 2,300 people. On the TVA side of it, we're looking  
24 at going, right now TVA Watts Bar Unit 1 the TVA

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1 staffing is about 500 people.

2 With two unit operations, we're going to  
3 go to 800 people. And we have actually hired 140  
4 that are going through various training, so when we  
5 get to -- close to the end of the project, all those  
6 people are going to be trained and ready to support  
7 Unit 2 operations. Any questions?

8 Next page. I'm going to go through some  
9 of the lessons learned. Again, some of these lessons  
10 learned from various either industry, Watts Bar Unit  
11 1, Browns Ferry Unit 1, and also the first cycle of  
12 operation of Browns Ferry Unit 1.

13 Organizational structure. We are  
14 different than how we did work at Browns Ferry then -  
15 - and Watts Bar actually, than what we are today. We  
16 have created, what we call, nuclear generation group  
17 versus the nuclear power. Nuclear power is just  
18 going to be focusing on the operation side of it.  
19 Nuclear generation is going to be, basically,  
20 responsible for a new nuclear generation, which Watts  
21 Bar Unit 2 falls under that category.

22 And the difference is before we were  
23 reporting to chief nuclear officer and the chief  
24 nuclear officer used to report to chief operating

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1 officer. Today we report to senior VP of nuclear  
2 generation, which he reports directly to chief  
3 operating officer.

4 Safety-conscious work environment. We  
5 have two programs. Actually, one program, but two --  
6 one for Bechtel, one for TVA with managers for TVA  
7 and manager for Bechtel. Gordon mentioned that part  
8 of our historical data review was to look at those  
9 43,000 historical data that we have from Watts Bar  
10 Unit 1 operation, we have from Watts Bar Unit 1  
11 construction. We are looking at every one of those  
12 and we are picking up any employee concerns that we  
13 have had from Watts Bar Unit 1 to look at the  
14 applicability for Unit 1 -- I mean, for Unit 2 and  
15 how we are going to disposition that.

16 We have actually created a group with,  
17 approximately, 15 people just to look at those  
18 historical values.

19 CHAIR RAY: I'm wondering whether the use  
20 of the word conscience was deliberate or meant to  
21 convey something else or whether you meant conscious.

22 MR. BAJESTANI: Conscious.

23 CHAIR RAY: Spell check.

24 MR. BAJESTANI: Spell check. Yeah, we

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1 got it.

2 CHAIR RAY: Well, no, it could be  
3 intended.

4 MR. BAJESTANI: I wish it were. Also,  
5 what we have done on the safety-conscious work  
6 environment is we have had independent assessment of  
7 employee issues and policing how we're doing on the  
8 safety-conscious work environment. The results of  
9 some of this independent assessment that we have had  
10 so far has been very good. The program is solid.

11 The difference again between this program  
12 and what we had at Watts Bar Unit 1, besides the two  
13 different organizations that we had, Bechtel employee  
14 concerns, TVA employee concerns, we also have created  
15 like exit interview. Everybody that leaves the site  
16 we go through an exit interview and ask them for any  
17 issues that they had before they leave the site, so  
18 we make sure that we take appropriate action.

19 And as of last week, we have had actually  
20 about 500 people that they have come to Watts Bar  
21 Unit 2 and they have left. So the program is working  
22 very well as of --

23 MEMBER BROWN: What do you mean by that,  
24 they have -- 500 people have come and left?

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1 MR. BAJESTANI: Yes.

2 MEMBER BROWN: What do you mean? They  
3 didn't want to work for you?

4 MR. BAJESTANI: No. And let me explain  
5 to you. Just some --

6 (Simultaneous speaking)

7 MR. BAJESTANI: I'll give you some  
8 explanation here. Some of them, obviously, better  
9 opportunities, a lot of them. Some of them, they  
10 come in, the job is done. Like I'll give you an  
11 example. We retube the condenser with stainless  
12 steel. We used to have copper. The 50 to 70 people  
13 that we had for that job, the job was completed and  
14 they are gone. So that's how we count. The total  
15 number --

16 MEMBER BROWN: But you interviewed them.

17 MR. BAJESTANI: Yes, we interviewed,  
18 exactly. We interviewed every one of them that  
19 leave.

20 MEMBER BROWN: Including the disgruntled  
21 ones that decided to leave because they didn't want  
22 to work for you any more?

23 MR. BAJESTANI: That's right.

24 MEMBER BROWN: I'm saying that with a

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1 little tongue in cheek.

2 MR. BAJESTANI: No, that's okay. Okay.  
3 Let me talk a little bit about the configuration  
4 control. One of the major issues that we had at  
5 Watts Bar Unit 1 was our configuration control. What  
6 I mean by configuration control is really the field  
7 didn't match what we had on the paper.

8 What we have done for this project, the  
9 first thing that we did was establish -- essentially,  
10 for 6 months we put people to look at, to walk-down  
11 every system, large bore, small bore, cables, small  
12 piping, pipe support, basically to establish our  
13 baseline. Where are we as far as today with respect  
14 to the drawing that we have?

15 So we spent a lot of time, you know, like  
16 I said for the last 6 months that has practically  
17 been the major part of the engineering work. And  
18 then when we finish with this walk-down, we get all  
19 these packages. These packages actually sent to  
20 engineering for input to the design, like for stress  
21 analysis. All the data that we get on the small  
22 bore, large bore piping is actually done by first and  
23 second party verification. Then we have, what we  
24 call, walk-down data package. We review that and

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1 then we turn it over to engineering. Engineering  
2 looks at it and then they use that data for the  
3 stress analysis.

4 So we establish --

5 MEMBER ABDEL-KHALIK: Where does the  
6 licensing basis preservation program interact with  
7 this process?

8 MR. BAJESTANI: Licensing basis? Okay.  
9 Any changes that engineering issue, design output  
10 document, before they actually issue that design  
11 output document, there is a checklist that they go  
12 through. And they say, okay, the change that we are  
13 making it impacts, if it does impact, the response  
14 that will be provided to NRC on generic  
15 communication.

16 So there is a checklist. There is a  
17 process actually that, I think, Gordon kind of  
18 explained that, that engineering goes through to make  
19 sure the changes that we are going to make is not  
20 going to impact what we have already committed or  
21 what we have already submitted.

22 MEMBER ABDEL-KHALIK: Okay.

23 MEMBER MAYNARD: Or if it does, you  
24 identify it so you can resubmit or what?

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1 MR. BAJESTANI: If it does, we have to  
2 come back and do through the approval through NRC  
3 again.

4 MEMBER MAYNARD: Okay.

5 MR. BAJESTANI: Again, what we wanted to  
6 do really the difference between this project and the  
7 other project that we have had, we wanted to spend  
8 the time up front to establish a good configuration  
9 control and that's what we have done so far. Any  
10 questions on configuration control? If not, I will  
11 talk a little bit about the corrective action.

12 MEMBER MAYNARD: Are you taking advantage  
13 of the newer electronic media for -- at your field  
14 walk-downs and your design and stuff? Are you going  
15 to come out basically with a paper design or is it  
16 going to be electronically available?

17 MR. BAJESTANI: It's going to be  
18 electronically available. Do you want to respond,  
19 Ed?

20 MR. FREEMAN: Well, if it needs to be, I  
21 mean, drawings and calculations and everything reside  
22 in an electronic database these days and can be  
23 called up by anybody and viewed and printed.

24 MR. BAJESTANI: And the corrective action

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1 program, we have -- what we have done, essentially,  
2 we are using the same corrective action program that  
3 the operating site uses. And obviously, the process  
4 and procedure that the operating site uses is based  
5 on all the lessons learned from industry and within  
6 the TVA. We are using the same process for  
7 identifying problem in the field and how -- this  
8 disposition.

9 MEMBER BROWN: Well, this is different  
10 from the other corrective action programs, the 29?

11 MR. BAJESTANI: Yes. That is different.

12 MEMBER BROWN: This is actual  
13 implementation.

14 MR. BAJESTANI: Right.

15 MEMBER BROWN: More control, okay.

16 MR. BAJESTANI: Yeah. If you --

17 MEMBER BROWN: I got it.

18 MR. BAJESTANI: -- go back to the early -  
19 - late '70s and early '80s, it's really essential in  
20 the construction side of it. The only issue that we  
21 were documenting in all this was under nonconformance  
22 report. Here we are documenting every issue under  
23 human performance trends, adverse trends, all that.  
24 It is all captured by corrective action program. A

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1 big difference between what we used to have versus  
2 what we have today.

3 And year to date, actually, on this  
4 project I looked at the report the last time and we  
5 had a little bit over 1,500 PERs that we have written  
6 on different projects. I mean, on different issues.

7 And the other thing that we have, which we didn't  
8 have when we went through Watts Bar Unit 1 is the  
9 anonymous PER. Anybody can identify issues. If they  
10 don't want to be identified, they can actually write  
11 the issue and drop it in a box. We look at it. We  
12 evaluate it and we disposition what we are going to  
13 do, which has helped us also to eliminate some of the  
14 issues that we had with employee concerns and other  
15 issues that we went through as we were going through  
16 Watts Bar Unit 1 construction.

17 Some of the lessons learned from Browns  
18 Ferry. Again, Browns Ferry, when we went through the  
19 Browns Ferry completion, we had to decide the  
20 completion of the project. We also took license  
21 renewal and extended power uprate. So what we are  
22 doing, like I explained before, we are really going  
23 to stay with what we need to do to start up Watts Bar  
24 Unit 2 limit the scope of the work that we are going

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1 to do.

2 I mentioned about the several  
3 organization and the NGDC, nuclear generation, and  
4 how we're going to do this. It's different again  
5 than what we did for Watts Bar Unit 1.

6 At Browns Ferry some of the work force  
7 issues that we had when we went through Browns Ferry  
8 completion, we had some shortage of pipefitters,  
9 welders, pipefitter welders and we had a shortage of  
10 some electricians. And for this project, so far we  
11 haven't had really any issues, obviously, because of  
12 the economy. And we don't expect to see really any  
13 problem to get the right number of craft that we need  
14 for this project.

15 We did have some issues at Browns Ferry  
16 on the scales, specifically on some instrument  
17 tubing, compression fittings. And what we have done  
18 for this project, we have put the process and  
19 procedure in place that we are going to limit the  
20 number of people that they are going to do certain  
21 scales, which is, like I said, under instrument  
22 tubing. We're going to train them more than what we  
23 did at Browns Ferry. And we are going to provide  
24 additional supervision to make sure somebody listens,

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1 some of the issues we had at Browns Ferry is not  
2 going to happen here at Watts Bar Unit 2.

3 Material and contract issues. Again, at  
4 Browns Ferry some of the material we had late  
5 delivery. And what we have done here for this  
6 project actually before we started this project, we  
7 went ahead and set aside some money to go ahead and  
8 get some of these long-lead material, specifically  
9 forging. We actually committed back in 2007, summer  
10 of 2007 on some of those forging. It is being built  
11 right now in Italy, Germany, Japan and Korea  
12 actually, some of the large forging that we have  
13 specifically for turbine generator.

14 So we learned from Browns Ferry. We have  
15 captured the lessons and we incorporated that into  
16 this project.

17 And the construction lessons learned.  
18 The area of construction, specifically, we learned  
19 that any time that we start something new, it's  
20 something that craft doesn't have the right -- that  
21 they don't do this on a regular basis, that's put it  
22 this way. We found that what we have to do is really  
23 go through additional training and through some type  
24 of checklist.

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1           So we have created, what we call, first-  
2           time evolution checklist for anything that we do new  
3           that is not routine. We actually go through this  
4           first-time evolution checklist and make sure all of  
5           the pre-job briefing everybody understand what are  
6           some of the issues that we have had on this specific  
7           issue like turbine installation, rake and splices,  
8           what are some of the stuff that we got to be worried  
9           about.

10           We pull actually the operating experience  
11           from various databases and we go through it and say  
12           okay, here is what we learned from it and we want to  
13           make sure we don't make the same mistakes. So again,  
14           that's different than what we did on some of the  
15           other projects.

16           Same thing with the non-routine  
17           activities. Again, that's additional training,  
18           additional checklist to make sure that we don't make  
19           the same mistake that we made at Browns Ferry or  
20           Watts Bar Unit 1.

21           Another issue that we had at Browns  
22           Ferry, some of the equipment that we bought, it was  
23           manufactured outside the U.S. and we didn't have some  
24           of the vendor support when we actually start going

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1 through the pre-op start-up testing. And it did  
2 create some problems. And what we are doing for this  
3 project for anything that requires vendor technical  
4 support, we plan on this and we have been so far like  
5 we actually installed, what we call, a secondary  
6 containment door.

7 We brought the vendor when we went  
8 through the start of the testing program for this.  
9 So we learned from it at Browns Ferry. We want to  
10 make sure that we have that technical support. That  
11 technical support is really necessary to go through  
12 the pre-op start-up type activities.

13 And then the other thing that we have  
14 done is we actually developed an orientation package,  
15 because, obviously, here is the construction unit and  
16 right next to it we have the operating unit. We got  
17 to be worried about a whole bunch of different things  
18 as we go through completion, construction completion  
19 of Watts Bar Unit 2. The craft, the supervisors,  
20 they have to be worried about a whole bunch of  
21 different things.

22 And we are training those guys to do  
23 these specific needs, like the secondary containment,  
24 fire protection, so on and so forth. Part of the

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1 orientation package, actually, we had a picture that  
2 shows what they need to be worried about. Again,  
3 this is lessons learned from Browns Ferry.

4 The other thing --

5 MS. BANERJEE: Excuse me.

6 MR. BAJESTANI: Sure.

7 MS. BANERJEE: Do you have any color  
8 coding in between two units?

9 MR. BAJESTANI: When we finished with the  
10 two units, yes. We're going to have a different  
11 color on Unit 1 than Unit 2.

12 MS. BANERJEE: Unit 1 doesn't have a  
13 specific color, so that people know they are --

14 MR. BAJESTANI: There are.

15 MS. BANERJEE: -- giving out this. It's  
16 a unique drawing of Unit 2?

17 MR. BAJESTANI: There are some systems  
18 that they have a color specification. Like fire  
19 protection is red. The lube oil system is yellow.  
20 But the rest of the -- like we want to make sure that  
21 there is a difference, just like what we did at  
22 Browns Ferry, between Unit 1 and Unit 2 and the  
23 performance.

24 MS. BANERJEE: Right. Yeah, that's what

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1 I'm saying.

2 MR. BAJESTANI: And we're going to do the  
3 same thing. We're going to have a different color.

4 MS. BANERJEE: But they are not there  
5 yet?

6 MR. BAJESTANI: Not yet, no.

7 MEMBER SIEBER: Some folks actually paint  
8 the walls of the buildings of one unit a different  
9 color than the other unit.

10 MR. BAJESTANI: We have Steve, he is  
11 actually from Unit 1, is the active SRO. Steve, do  
12 you want to expand on that?

13 MR. SMITH: Yeah.

14 CHAIR RAY: Get to a microphone.

15 MR. SMITH: Steve Smith. I'm a SRO in  
16 Unit 1 right now doing the interface between Unit 1  
17 and Unit 2. Back in the '90s when we did our initial  
18 component labeling, we did establish Unit colors.  
19 Unit 1 has a color of yellow. Unit 2 is the color of  
20 light blue and the common systems are white. So we  
21 do have a unit color-coding system that is setup.  
22 All the labels that are in the plant are labeled that  
23 way.

24 As a matter of fact, for this separation

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1 he is fixing to talk about, we have painted stripes  
2 in the floor that says, it's a yellow stripe, you are  
3 now entering Unit 1 operated area, so that the people  
4 working on Unit 2 will see that to go there. So  
5 there is a unit separate based on colors. I just  
6 wanted to clarify.

7 MEMBER SIEBER: When you are in the  
8 construction mode, will you actually fence off or  
9 wall off certain areas, so that you don't have  
10 people, construction workers wandering into the  
11 operating plant for some reason or other?

12 MR. BAJESTANI: I can go -- that's the  
13 next slide I was going to talk about.

14 MEMBER SIEBER: Okay.

15 MR. BAJESTANI: The unit separation.

16 MEMBER SIEBER: Okay. I'll wait.

17 MR. BAJESTANI: Okay. The others are  
18 lessons learned that we have done. Actually, we have  
19 picked up any lessons learned that was issued from  
20 NRC, INPO, NEI, like INPO-805 on historical  
21 construction experience to apply on the new plant,  
22 NRC information notice on experience related to  
23 assurance of the quality and construction nuclear  
24 plant.

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1 And, like I said, there are a whole bunch  
2 of different documents and that we have looked at  
3 those to make sure that we understand what those  
4 issues are and learn from it and make sure that we  
5 have incorporated that into Watts Bar Unit 2  
6 construction completion.

7 Unit separation. We have a operational  
8 separation and physical separation. Operational  
9 separation is actually done by lifting wires,  
10 removing handwheel on the valve or installation of  
11 the blind flanges. Okay.

12 On the physical separation, we have  
13 actually put fence and chain. We have tagged and  
14 marked what is Unit 1, what's Unit 2, especially  
15 where the area that we have the common system that  
16 one side is Unit 1, one side of it is Unit 2. It  
17 shows that Unit 1, Unit 2. All the Unit 2 craft  
18 personnel, they wear yellow hardhat, which is anybody  
19 walks into the site, they can see who is working  
20 where, you know, that helps us to identify the Unit 2  
21 personnel.

22 We have designated walkway. As Steve  
23 mentioned, we have actually painted certain area of  
24 the plant. This is the walkway that we want to make

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1 sure that Unit 2 people walk.

2 MEMBER STETKAR: It's a really petty  
3 little thing, but, Steve, didn't you just say that  
4 Unit 1 color was yellow?

5 MR. SMITH: The hardhats are color --

6 MEMBER ABDEL-KHALIK: Turn the mike on.

7 MR. SMITH: Oh, I'm sorry. The hardhats  
8 they use are a darker yellow. It's a light yellow  
9 for the Unit 1 color. But we had a lot of hardhats  
10 the right color, so we used that to identify the Unit  
11 2 people.

12 MEMBER STETKAR: Okay.

13 MEMBER BROWN: Say that again.

14 MEMBER STETKAR: Okay.

15 MR. BAJESTANI: Okay. You mentioned that  
16 the --

17 MEMBER BROWN: Dark yellow is really  
18 blue?

19 MR. BAJESTANI: No, no, no.

20 MEMBER STETKAR: There's a lot of colors  
21 I would have picked. Yellow probably wouldn't have  
22 been one of them, but I just wanted to make sure.  
23 Since you capitalized yellow.

24 MS. BANERJEE: It does not come to color

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1 blindness, I guess.

2 MR. BAJESTANI: Again, when we finish  
3 actually doing the coloring, right now if you look at  
4 the turbine generator, I know some of you guys are  
5 going to come visit Watts Bar, if you go on the  
6 turbine deck, the generator is actually brown. So  
7 it's not really that we have color. Actually, we  
8 have painted the unit to the system that it is  
9 supposed to be.

10 So you're going to see very clearly where  
11 Unit 2 personnel are working with the yellow hardhat.

12 MEMBER SIEBER: And so every construction  
13 worker will have a protected area access permission?

14 MR. BAJESTANI: Yes. If they are going  
15 to deviate from the route that Unit 2 personnel are  
16 allowed to go, they have to go through work control,  
17 operation work control, which is David Webb, and then  
18 he calls the -- he actually authorizes specific area  
19 that they are going to deviate from normal path, if  
20 they have to go, if there is a need for them to go  
21 certain areas.

22 MEMBER SIEBER: Yeah, I'm just asking  
23 about your security arrangement. You know, everybody  
24 gets badged the same way regardless of whether they

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1 are working on the operating plant or the  
2 construction plant.

3 MR. BAJESTANI: Right.

4 MEMBER SIEBER: Okay.

5 MR. BAJESTANI: We are actually -- I'm  
6 going to get to -- let me go through this and then  
7 I'll explain how the access --

8 MEMBER ABDEL-KHALIK: What is the control  
9 room layout?

10 MR. BAJESTANI: The control room layout,  
11 again, the common control room Unit 1 on one side,  
12 Unit 2 on the other side and then middle where we  
13 have all the common equipment. So each charter is on  
14 one side of it. Diesel generator, CCS, ERCW and  
15 those are on the other side of the -- between the two  
16 horseshoes. We've got horseshoes on Unit 1,  
17 horseshoe on Unit 2, common equipment on one side,  
18 common equipment on the other side.

19 MEMBER SIEBER: Are you going to build a  
20 wall through the middle of the control room while  
21 they are working on Unit 2?

22 MR. BAJESTANI: No. We do not want to  
23 build a wall and the reason for that is when we  
24 described the electrical system, there are some

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1 electrical systems right now today in the horseshoe  
2 on 6.9 kV that is actually required for Unit 1  
3 operation. So if we put a wall, the operator on Unit  
4 2 is not going to be able to see it.

5 But what we are doing is we are looking  
6 at putting a noise reduction curtain that when we  
7 start drilling the panels, because we are,  
8 essentially, moving a lot of switches and gauges to  
9 make sure we reduce the noise on the other --

10 MEMBER SIEBER: Distraction.

11 MR. BAJESTANI: Exactly.

12 MEMBER SIEBER: It's a distraction for  
13 operators.

14 MEMBER BONACA: This is a suggestion.  
15 When you come back for the whole Committee meeting,  
16 it will be useful to have some, you know, visual  
17 aids.

18 MR. BAJESTANI: Sure.

19 MEMBER BONACA: I mean some maps or  
20 pictures of the control room to get a sense of the  
21 layout for the construction progress and also a  
22 layout of the plant.

23 MR. BAJESTANI: Yes, the last bullet here  
24 is construction access. To eliminate some of the

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1 traffic on the Unit 2 side, because the way that the  
2 unit is set up, in order for us, for Unit 2, to go in  
3 containment, you have to go through Aux building,  
4 auxiliary building. Which you go through auxiliary  
5 building, you're going to have to go through RCA, the  
6 Radiological Control Area.

7 So what we decided to do to minimize this  
8 distraction on the operating side, we went ahead and  
9 cut two holes, essentially, on lower containment to  
10 access to the containment without going through RCA.

11 And we have an opening on the upper containment that  
12 is going to go through additional equipment building  
13 to the upper containment part. And we did that  
14 specifically to minimize the traffic in the Unit 1.

15 MEMBER MAYNARD: So you are putting --  
16 you are cutting a hole in containment or through  
17 another building to get into containment?

18 MR. BAJESTANI: Through another building  
19 to the access building to the containment.

20 MEMBER MAYNARD: Okay. That's all right.  
21 Okay.

22 MR. BAJESTANI: So to answer your  
23 question on future work, because what we did actually  
24 we went through Unit 2 containment to make sure that

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1 there is no radiation, no contamination, no --

2 MEMBER SIEBER: Yeah.

3 MR. BAJESTANI: So we have always  
4 repeatedly -- the essential containment, that's when  
5 they actually did the containment opening. And we  
6 look at it in the future of whether or not we need to  
7 have the people that are going into containment that  
8 we need to have additional -- do we need to basically  
9 have all the requirements like going through RADCON  
10 containment. We don't need to have really go through  
11 the RADCON training to get to the containment any  
12 more.

13 MEMBER SIEBER: Um-hum.

14 MR. BAJESTANI: So we're going to look at  
15 it and see what we need to do to eliminate that  
16 requirement.

17 Okay. We talked about the organization.

18 Now, let me talk a little bit about the -- how we  
19 review work that is common to both units. And what  
20 do we do.

21 Work in the operating environment. Any  
22 work that we are doing that's in the operating area,  
23 we actually look -- first of all, it's identified  
24 right on the first page of the construction and it is

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1 being reviewed on a daily basis what that work is and  
2 what potential impact is. There is a discussion,  
3 detailed discussion on that on a daily basis. And  
4 Steve again, he is actually a Unit 1 SRO, he sits in  
5 that meeting and, obviously, he pays a lot of  
6 attention to all these areas.

7 MEMBER ABDEL-KHALIK: But who is in  
8 charge?

9 MR. BAJESTANI: Who is in charge of?

10 MEMBER ABDEL-KHALIK: Of work in  
11 operating spaces that are -- have to be accessed by  
12 construction people. Is it the SRO of the operating  
13 unit? Is it the shift manager of the operating unit?  
14 The people in charge?

15 MR. BAJESTANI: It goes through what  
16 management. It goes through -- essentially, if it is  
17 common area and it's going to impact -- it could  
18 impact Unit 1, it goes through Unit 1 operations.  
19 The work is actually scheduled in Unit 1. So  
20 everybody knows what everybody does.

21 MEMBER MAYNARD: Work management has a  
22 tie to the operating plant, does it not?

23 MR. BAJESTANI: Yes, yes.

24 MEMBER MAYNARD: Okay.

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1 MR. BAJESTANI: Yes.

2 MEMBER MAYNARD: The way you do business  
3 today, right?

4 MR. BAJESTANI: Exactly. That's the way  
5 we do business today. Again, also for any work that  
6 we are doing on the Unit 2 side, still every work  
7 order is reviewed by experienced ex-SROs or operator  
8 that used to work at TVA or Watts Bar, specifically.

9 We still review all the -- even work that we do on  
10 Unit 2 side through experienced operational  
11 personnel. And also, any Problem Evaluation Report,  
12 PER, is also reviewed by operations, which is Unit 1  
13 operation, on a daily basis to see if there are  
14 issues that impact Unit 1. So that is also being  
15 reviewed on a daily basis.

16 And like I said, any work that is  
17 actually common to -- any work on a common system  
18 actually goes through work management on Unit 1 in  
19 operations. Any questions? Did I answer the  
20 question on the physical separation?

21 MEMBER SIEBER: Yeah.

22 MR. BAJESTANI: Okay. If there is no  
23 other questions, I'm going to turn it to Ed Freeman.  
24 He is going to -- okay, Ed?

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1 MR. FREEMAN: Okay. I've got a couple of  
2 slides here talking about the project schedule.  
3 Masoud and Gordon have kind of already laid the  
4 ground work for this.

5 Our project was approved, as mentioned,  
6 in August of '07 by the TVA Board and the official  
7 kick-off was in October of that year. It is a 60  
8 month to commercial operation schedule. And we are  
9 pushing to try to bring the project in a little bit  
10 early, naturally.

11 In order to achieve this, I'll direct  
12 your attention to the -- about the middle of that  
13 slide there that shows that the major engineering  
14 complete milestone would be done by the end of this  
15 calendar year, with the operating license update and  
16 FSAR submittal to be in March of next year.

17 Those milestones are key, of course, to  
18 delivering the project on time and to give the NRC  
19 ample time to review those documents associated with  
20 that.

21 CHAIR RAY: And what's the allowance if  
22 there is hearings required? Do you accommodate that  
23 here somehow, if there is a hearing required?

24 MR. ARENT: Yes, the hearings are

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1 accommodated in parallel and our expectation  
2 currently would be is that they would begin some time  
3 in the first calendar quarter of 2011.

4 CHAIR RAY: Okay.

5 MR. FREEMAN: Other of our major  
6 milestones shown on that page is completing the work  
7 on the turbine deck in October of 2010. We call that  
8 our 10/10/10 date. Completing the cold hydro, the  
9 primary hydro in May of 2011. And our hot functional  
10 testing that is in August of 2011. Ready for fuel  
11 load in April of 2012 and commercial operation in  
12 October of 2012. And again, we are hoping to  
13 establish some margin to that schedule.

14 If you go to the next slide, I'll get  
15 into some specifics of the project critical path.  
16 Our critical path is through the ERCW system. This  
17 is one of the shared systems. And as Mr. Crouch has  
18 mentioned previously, we do have some work to do on  
19 this system replacing all eight of the pumps.

20 Our flow model showed that there was,  
21 basically -- the system was okay as originally  
22 designed, but there was no margin to account for  
23 instrument inaccuracies or degradation of the pumps  
24 with regards to their capabilities. So we are -- we

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1 have elected to replace all of our pumps with higher  
2 capacity pumps. The pumps that we have selected have  
3 about 20 foot ahead and should allow the system to  
4 take on the second unit of operation, have more  
5 relaxed, if you will, maintenance frequency due to  
6 degradation and stuff like that.

7 We have that -- because they are shared  
8 systems, we have to coordinate the replacement of the  
9 pumps with the operating units to be sure that the  
10 work windows fit their needs and requirements and we  
11 can look through the pumps one at a time and get the  
12 pieces that will be refurbished at the same time back  
13 from our vendors and get them all installed.

14 And once the pumps are installed, and I'm  
15 walking you through here the time line to show you  
16 why this is a critical path, once we have sufficient  
17 pumps installed, we have to go through the process of  
18 beginning to introduce flow into the Unit 2 flow  
19 pass. And that's kind of a deliberative process that  
20 we have to go through and be sure that we continue to  
21 meet the operating unit's requirements as we divert  
22 flow from the system through those flow paths and  
23 rebalance the system as we go.

24 That will take some time to work through

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1 that. We expect a lot of oversight from the  
2 operating -- from our operating staff, as you might  
3 imagine. And we'll just have to plan that well and  
4 be sure that we execute it well.

5 We have other work on the system as well.

6 You know, having only one unit in service has been  
7 convenient when it comes to doing maintenance on the  
8 system. And now with the second unit it is coming  
9 on-line doing activities like strainer maintenance.  
10 It really can't be done, because there will always be  
11 one unit or the other in service.

12 So we have -- are planning to, at this  
13 upcoming outage this fall, install cross-tie headers.

14 It is downstream of the strainers, but it will be  
15 between the 1-alpha and the 2-alpha, the ERWC  
16 headers, and 1-bravo and 2-bravo in order to continue  
17 flow while we have a strainer out for maintenance.

18 Similarly, the way that the bays are  
19 arranged, you know, and again because we won't be  
20 able to take the system out of service during  
21 refueling outages any more, we will be installing a  
22 diver protection system. It will basically be a  
23 still cable net in between to kind of split the bay  
24 into two pieces, so that divers can go down and do

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1 the necessary inspections in the intake structure and  
2 clean out silt and do those types of maintenance.

3 Again, we expect to install or at least  
4 partially install that this upcoming outage with the  
5 possibility of additional work in the next outage.

6 Bill, do you have anything to add? Did I  
7 miss anything? Okay. I'll move on.

8 CHAIR RAY: Just out of curiosity, does  
9 that mean done under 50.59 for --

10 MR. FREEMAN: Yes, it is. Because it is  
11 turned over to the plant, its design change using the  
12 Unit 1 process and 50.59.

13 CHAIR RAY: An interesting write-up.

14 MR. FREEMAN: Continuing, there is three  
15 systems that I mentioned here that are near critical  
16 path. I mentioned moisture separator reheaters. The  
17 turbine deck worked just in particular. As Masoud  
18 has mentioned, we are replacing all of the turbine  
19 elements with higher efficiency elements and that  
20 includes installing new moisture separator reheaters.

21 Those were basically taken for Unit 1 purposes years  
22 ago and so we have to purchase new ones.

23 What is making this a new critical path  
24 is delivery of the last of these is set for the

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1 spring of next year. And the process of getting  
2 these big commodities up on the deck and connecting  
3 all the large piping and small piping and the  
4 instrumentation and electrical connections, it runs  
5 right up to our target of October 2010 in order to  
6 get that complete.

7 Another system is the ice condenser  
8 system. Again, this one is near critical path  
9 because of the piece parts that we need. Ice  
10 condenser containments are not common in the  
11 industry, so I mean, the parts that had been taken  
12 for spare parts, I think someone mentioned, you know,  
13 about our unit becoming a spare parts warehouse for  
14 Unit 1 and Sequoia.

15 There have been some parts taken. There  
16 are some parts damaged. And we secured a vendor to  
17 manufacture those parts for us, but actually getting  
18 them made and getting them here is going to push that  
19 system out late as well.

20 And the third system mentioned on the  
21 slide is reactor protection. We are installing  
22 Westinghouse's Eagle 21. Again critical path because  
23 of the delivery cycle for this system. It is due to  
24 arrive in June, I believe, of 2010. A lot of wires

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1 going to this system, so basically once we receive  
2 it, we have to install it in the auxiliary instrument  
3 room, pick up all of those electrical connections, do  
4 our in situ testing of the racks themselves. And  
5 then begin to do the full loop test with the systems  
6 that it interfaces with.

7 It interfaces with many of our safety-  
8 related systems. And this testing has about two  
9 months of float to the critical path of the first  
10 system that requires it to be in operation.

11 So as we continue to receive information  
12 on this system, we may refine our schedule and  
13 establish a little more margin to the critical path.

14 But as of today, that's where those systems stand  
15 and where our schedule stands.

16 MEMBER SIEBER: Okay. Let me break your  
17 train of thought.

18 MR. FREEMAN: And I was going well.

19 MEMBER SIEBER: Your control room is  
20 going to have two different instrument systems in it.

21 So I presume Unit 2's control layout, perhaps the  
22 logic, will be different than Unit 1?

23 MR. FREEMAN: No, not substantially. Our  
24 -- I have a slide in here that talks about unit

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1 differences.

2 MEMBER SIEBER: Well, when you get to  
3 that slide, we want to talk about the differences.  
4 Keep in mind my question and my question is are you  
5 going to have dual licenses for operators who are  
6 going to have operator's license one for -- one group  
7 for Unit 1 and one for Unit 2?

8 MR. FREEMAN: Yes, I do plan to address  
9 that specifically between myself and Mr. Hilmes. We  
10 will walk you through that.

11 MEMBER SIEBER: Okay.

12 MR. FREEMAN: Okay. The next slide,  
13 please. The next slide just shows some of the  
14 commodities. Some of these are estimates from the  
15 original project estimate that Masoud mentioned.  
16 Some have been refined or discounted a little bit as  
17 we worked through the engineering processes. We have  
18 learned that the scopes are going to be less than  
19 expected. If you have any specific questions, I'll  
20 address it, but otherwise, we'll move on to the  
21 refurbishment slide.

22 MEMBER SIEBER: On this slide, do you  
23 happen to know or have available easily to you what  
24 the already installed commodity amounts are?

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1 MR. FREEMAN: I don't.

2 MEMBER SIEBER: These are totals, right?

3 MR. FREEMAN: Ah --

4 MEMBER SIEBER: This is --

5 MR. BAJESTANI: This is what we're going  
6 to be replacing. But we don't have the number of  
7 what has already been installed.

8 MEMBER SIEBER: Okay. Thanks.

9 MR. FREEMAN: Okay.

10 MR. BAJESTANI: We can follow-up and give  
11 you that.

12 MEMBER SIEBER: Well, it's not that  
13 important.

14 MR. BAJESTANI: Okay.

15 MR. FREEMAN: Okay. If you would go to  
16 the next slide, please? The next slide is entitled  
17 Refurbishment. Now, we have talked about this some,  
18 so a lot of what I'm about to say might be a repeat  
19 or maybe a new emphasis on some of the key points  
20 that we wanted to bring out.

21 I'll first go to the second major bullet  
22 there where it says "no credit for lay-up" and  
23 emphasize that. What that means, basically, is we  
24 are not reducing any of our refurbishment or

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1 inspection activities just because something was in  
2 lay-up for, you know, X number of years.

3 We will approach this, you know, with the  
4 intent to disassemble this and inspect it and  
5 visually verify it and replace all the lubrication  
6 that we have to to establish an as-new condition. So  
7 when we say no credit, that's what that means. We  
8 are not reducing any of those requirements as a  
9 result of being in lay-up.

10 Now, Gordon mentioned, you know, that  
11 there was interest in the lay-up time line and I took  
12 advantage of some of our time and laid out a rough  
13 time line for when things were in lay-up and when it  
14 began and when it ended for the major commodities.

15 We began to put equipment into lay-up in  
16 around 1985. Over -- of course, over the time of  
17 about three years, from '85 into '88, we got  
18 substantial parts of the Unit 2, the equipment that  
19 would not be required for Unit 1 into a lay-up  
20 condition. And '88 was the time that TVA made the  
21 decision that they were going to focus on Unit 1. We  
22 were going to focus on our other units that were  
23 operating. And Unit 2 for now is put off.

24 From that time frame, 1989, the Nuclear

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1 Performance Plan that has been previously mentioned  
2 said that Unit 2 was in a lay-up condition. And for  
3 the next 12 years, up until the 1999/2000 time frame,  
4 it remained in that lay-up condition. That lay-up,  
5 of course, was dry, warm air being blown through the  
6 systems, rotating the large equipment that required  
7 it and doing those kind of things, preventative  
8 maintenance tasks ultimately.

9 MEMBER BONACA: So you feel you had  
10 consistently good lay-up?

11 MR. FREEMAN: I'm sorry?

12 MEMBER BONACA: You feel that you had a  
13 consistently good lay-up?

14 MR. FREEMAN: We do. For that time frame  
15 we did.

16 MEMBER BONACA: What does that mean? At  
17 Browns Ferry 1, you didn't?

18 MR. FREEMAN: I'll speak to Browns Ferry.

19 MEMBER BONACA: Of the same time frame,  
20 you had some issues.

21 MR. BAJESTANI: Yeah, you know, it goes  
22 back to what we -- what Ed discussed and what -- we  
23 really are not taking credit, essentially, for the  
24 long lay-up. We are disassembling equipment, sending

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1 it to the vendor for complete refurbishment.

2 MEMBER BONACA: Yes, but, you know, a  
3 good lay-up is credit. Bad lay-up, that's penalty.  
4 And you know, how do you deal with it? The  
5 inspection is being done to verify the lay-up  
6 conditions, because it's an issue.

7 MR. FREEMAN: Well, thus far, even though  
8 as Masoud mentioned, they are really not crediting  
9 lay-up towards reduced inspection requirements. Thus  
10 far, the fact that it was -- that the equipment was  
11 largely in lay-up condition through -- and my  
12 continued time table here went to about 2004 when we  
13 started removing from lay-up the last of the  
14 equipment, there was 20,000 components that were in  
15 the lay-up program up until about 2000. And then we,  
16 you know, changed the QA plan and began to reduce  
17 that number substantially.

18 In 2004, basically, the large pump,  
19 including the safety-related pumps and motors and a  
20 few cranes that we continue to use. But while we  
21 don't credit that to reduce the inspection  
22 requirements we have got, it has left the equipment  
23 in pretty good condition. That and, you know, the  
24 fact that the systems, the components have been

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1 installed inside basically. The things that we have  
2 had apart have been in good condition, you know, as  
3 found.

4 MR. BAJESTANI: I want to just use one of  
5 the examples, let's say, the control rod drive.

6 MR. FREEMAN: Well, our control rod drive  
7 system, our OEM Westinghouse came on site and  
8 actually did the testing of the pull timing to make  
9 sure everything is moving like it is supposed to.  
10 And I think we've got really good results. They have  
11 no issue at all. A boroscopic inspection did show  
12 some-- a little bit of corrosion up inside, which  
13 they are advising us on, but all the mechanisms and  
14 everything moves very well.

15 MR. BAJESTANI: We have specific phases  
16 for rod-drop testing, essentially, that's really what  
17 Westinghouse did.

18 MEMBER BONACA: The reason why I raised  
19 the issue is that this happened in the '80s. And the  
20 industry did not have really good guidelines for lay-  
21 up until the '90s when EPRI came up with very solid,  
22 you know, base to lay-up. So anybody who was  
23 involved in lay-up knew that some components were  
24 short-changed by just simply there were no very good

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1 lay-up guidelines. So I would expect that you would  
2 check the components.

3 MR. FREEMAN: Well, I understand. And we  
4 are checking the components. Again, we are not  
5 really taking credit for it. I'm just mentioning it  
6 because of the --

7 MEMBER STETKAR: I guess to reinforce  
8 Mario's point, it might be useful when you come back  
9 for the Full Committee, rather than emphasizing the  
10 fact that you haven't taken credit for lay-up in  
11 terms of reducing the amount of inspections that you  
12 might need to do, do you have any examples where  
13 simply because something was in lay-up you have had  
14 to increase those inspections because you are  
15 concerned about the equipment status, because it was  
16 in lay-up?

17 So not in the sense of not taking credit  
18 for lay-up to reduce the level of effort, are there  
19 any examples where concerns have been raised where,  
20 indeed, you have had to increase your level of  
21 inspection or -- and I think it would be useful, you  
22 know, to kind of allay those concerns, if there are,  
23 to kind of explain where you have looked at that.

24 MR. BAJESTANI: There are some specific

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1 examples of, I guess, poor lay-up that we know  
2 specifically on raw cooling water. Bob, just go  
3 through a little bit of detail on what we are finding  
4 on the raw cooling water.

5 MR. MOLL: Like over here?

6 MR. BAJESTANI: Yes.

7 MR. MOLL: Bob Moll, TVA, Pre-op Start-up  
8 Manager. I came to Watts Bar in late 2007 and we  
9 experienced some of the lay-up issues at Browns Ferry  
10 when I was there not being laid-up good. So first of  
11 all, one of the inspections, the boroscope inspection  
12 we did on the control rod drive mechanisms, all of  
13 them, was done to confirm that the lay-up did work at  
14 Watts Bar. We did that to make sure the lay-up was  
15 good.

16 We spent a lot of time in late 2007  
17 looking at the raw water systems at Watts Bar,  
18 because we had issues with bad lay-up at Browns Ferry  
19 Unit 1 on raw water systems, both safety and non-  
20 safety-related.

21 What we found historically back at Watts  
22 Bar, I'm going to say I think it was probably during  
23 the first cycle of operation, the interface valves  
24 that were isolating the Unit 1 and 2 raw cooling

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1 water systems leaked by and they did get water in the  
2 raw cooling water system on Watts Bar Unit 2.

3 As a result of that, we have gone out and  
4 did, I think was somewhere around, 24 or 25 UT  
5 inspections at the interface point boundaries, both  
6 on the Unit 1 side and the Unit 2 side. We are doing  
7 -- and basically, those results came out okay. We  
8 are not seeing any nick in the piping and  
9 degradation.

10 We are currently in the process of going  
11 through as we open up the raw cooling water system on  
12 the Unit 2 side, we are in the process now of  
13 cleaning that. Essentially, we've got a game plan  
14 laid out to clean all of the supplies to all of the  
15 raw cooling water loads on the Unit 2 side based upon  
16 these inspections we have seen.

17 We have also looked on the ERCW side,  
18 kind of looking at the same thing. We went and first  
19 looked at the dead-legs on the unit, on the ERCW  
20 system, isolating the Unit 2 side. And actually,  
21 those legs have all been in the Unit 1 UT Program  
22 since it started up and the plant has been routinely  
23 monitoring those. They are all stainless steel  
24 versus carbon steel, which is what we saw in the raw

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1 cooling water side.

2 Then the other thing we have confirmed is  
3 we have not seen any signs of any raw water getting  
4 into the Unit 2 ERCW loads. They have been  
5 adequately isolated. We have done some internal  
6 boroscope inspections during DSIP, but there has been  
7 no signs of water over there.

8 We have also opened up any -- pretty much  
9 any time somebody opens up the secondary side, we  
10 have been out doing inspections, my start-up group  
11 has, and we have seen signs of water that got into  
12 the condensate system and identified that piping as  
13 it has opened up, that we need to go clean it out,  
14 vacuum it. It is not near as bad as what we saw in  
15 the raw cooling water side, but we are out there  
16 doing those inspections as those components are  
17 opened up.

18 MR. FREEMAN: Okay. I'll read, if you'll  
19 bear with me. I do have a copy of a refurbishment  
20 program here and I'll read a passage from it, just so  
21 that you'll understand what the overall objective is.

22 Refurbishment as described by the program  
23 involves inspections, cleaning, testing, lubrication,  
24 replacement of shelf-life limited parts, such as

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1 gaskets and packing and elastomers. In some cases it  
2 will be more economical to replace the whole  
3 components, rather than refurbish. Consideration  
4 will be given to specific engineering requirements,  
5 such as environmental qualification when establishing  
6 the refurbishment activities required for specific  
7 components.

8 Lessons learned for reliability issues  
9 noted during Unit 1 operation will also be considered  
10 when establishing those refurbishment activities for  
11 those given components. So this is our starting  
12 point. I mean, this doesn't need to be -- this isn't  
13 necessarily the end all, but we are taking the  
14 approach you had talked about, you know, having to  
15 think differently when you -- you know, how to  
16 address these specific equipment that has been  
17 sitting around for a while.

18 Yes, we will inspect, I forget who said  
19 it, but inspect, the bearings to be sure that there  
20 are no flat spots. We will take the components apart  
21 and do visual inspections. We have secured vendors,  
22 either the original equipment manufacturers or  
23 specialty vendors, to address a lot of our large  
24 components.

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1           So just for example, our RCP motors are  
2 back at Westinghouse to be refurbished. Our safety-  
3 related motors are going to the power service shop,  
4 that's a part of TVA that does the other nuclear  
5 units' motor maintenance, who largely does the motor  
6 maintenance for those operating plants. Safety-  
7 related pumps largely, I think, all but two of them  
8 are going to the original equipment manufacturer for  
9 refurbishment and inspection.

10           Limit torque operators, the safety-  
11 related operators, we found that it was cheaper to  
12 replace them all with new, rather than, you know, try  
13 to disassemble those and remove all the old  
14 lubrication greases and stuff that would harden over  
15 time. And we negotiated a pretty good deal to bring  
16 new ones in for those.

17           A program that is supplemented by the  
18 system's flush and cleanliness program will be done  
19 as part of the start-up process. The component  
20 testing program where, you know, things will be  
21 actuated for the first time, of course, the pre-op  
22 test program will demonstrate that everything meets  
23 its design requirements.

24           Pre-service inspection program, which

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1 will go out and inspect some of the system welds and  
2 system piping. And we have some cases, other cases,  
3 you know, that has been mentioned. The safety-  
4 related transmitters will be replaced. The EQ  
5 components will be replaced, rather than trying to  
6 start over with those.

7 And the group is comprised of, you know,  
8 some TVA veteran maintenance folks. So we are  
9 getting the benefit of their experience for  
10 reliability issues and those kinds of things and  
11 we're taking advantage of that. Any questions on  
12 that?

13 MEMBER MAYNARD: For your pressure  
14 boundary type pipes, RCS pipe, steam generators and  
15 stuff, are you providing primarily on the flushing  
16 and cleaning program or are you doing assessment to  
17 see if there has been any chemical contamination? If  
18 this were a bad lay-up program, it can cause you more  
19 problems than another lay-up program. What do you do  
20 to make sure there hasn't been some contaminants or  
21 something that could rapidly degrade the pressure  
22 boundary capabilities? RCS piping, steam generators.

23 MR. BAJESTANI: We're going to be  
24 replacing some of the valves in RCS. You know, I

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1 mean, there is already going to be the walk-down  
2 baseline -- based on the application.

3 MEMBER MAYNARD: The valves and stuff.

4 MR. BAJESTANI: Right. We opened the --  
5 when we open the valve, we're going to look at the  
6 system. We're going to look at it and see what we  
7 need to do. What is the contaminant? Then based on  
8 that, we decide what we're going to be doing. So  
9 anyone of the units, there are quite a few valves  
10 actually that are missing.

11 MEMBER MAYNARD: We can actually --

12 MR. BAJESTANI: Sometimes the  
13 contaminants they are not visible. We'll go to Frank  
14 and see --

15 MEMBER MAYNARD: Another question.  
16 Something I want the NRC to take a look at.

17 MR. KOONTZ: Yes, this is Frank Koontz  
18 again. One of the things we did for ASME is we had  
19 Westinghouse walk-down the NSSS components and they  
20 went in and they looked at the surfaces of all the  
21 components for arc strikes to see if there was any  
22 damage. They went down inside the vessel and looked  
23 at the bottom welds down in the vessel. They looked  
24 at the vessel itself.

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1           There was some residue in the vessel. It  
2           was sampled to make sure it wasn't bad, deleterious,  
3           you know. Sorry about that. And checked that out to  
4           make sure it was okay. We will be doing on the steam  
5           generators a FOSAR and a sludge lancing on the  
6           secondary side to make sure it is all cleaned out.  
7           And of course, we are doing a 100 percent eddy  
8           current exam on the steam generators before we start-  
9           up.

10           MEMBER MAYNARD: I just -- there is --  
11           you know, welds are always a sensitive area. You  
12           know, anything that can accelerate pressure, the PSIG  
13           or the intergranular stress corrosion cracking or any  
14           of the stress corrosion cracking phenomena.

15           CHAIR RAY: You said the steam generators  
16           at Unit 1 had been replaced?

17           MR. BAJESTANI: Yes.

18           CHAIR RAY: You expect the same thing to  
19           happen on Unit 2 or is there something that will  
20           prevent that?

21           MR. BAJESTANI: What we have done based  
22           on the inspection that we have done and based on some  
23           additional work that we are going to be doing before  
24           we start-up Unit 1 -- I mean, Unit 2, we expect to

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1 get actually more life out of the Unit 2 steam  
2 generator than what we did on Unit 1. Specifically,  
3 we are removing all the copper from secondary site.  
4 We did not do that on Unit 1.

5 We are going to be doing zinc injection,  
6 which we didn't do on Unit 1. So we started up the  
7 water chemistry wasn't as good as it should have  
8 been. So there are a bunch of stuff that we have put  
9 in place to get more life out of the Unit 1 -- I  
10 mean, Unit 2 steam generators than what we did at  
11 Unit 1.

12 So far we know we're going to get from --  
13 at least from what we have done on Unit 1, we know  
14 we're going to get about 12 years of qualified life.

15 But we expect to get more than that. We expect to  
16 get more life out of the steam generator than 12  
17 years.

18 MEMBER SIEBER: Um-hum.

19 MR. BAJESTANI: Okay.

20 MEMBER SIEBER: Does Unit 2 have a  
21 condensate polisher?

22 MR. BAJESTANI: Yes, yes.

23 MEMBER SIEBER: You will use mole  
24 chemistry control?

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1 MR. BAJESTANI: Ah, we have. That part  
2 of it, anybody back there can answer that question?  
3 Frank?

4 MR. KOONTZ: Steve might be able to  
5 answer that. I guess the question, Steve, was what  
6 kind of chemistry controls do we do on steam  
7 generator?

8 MR. SMITH: You know, they got -- this is  
9 Steve again. We've got -- on Unit 1 we use -- the  
10 chemistry uses pH control and injects the -- sorry,  
11 can't think of all the chemicals, but keep the iron  
12 under control, all the chemistry aspects for the  
13 sodium sulphates, if that's what you're talking  
14 about.

15 MEMBER SIEBER: Well, yeah. They try to  
16 balance the chemicals that are in there in addition  
17 to maintaining pH and --

18 MR. SMITH: Correct.

19 MEMBER SIEBER: -- conductivity, so that  
20 you don't end up -- you know, you can balance pH and  
21 have a lot of ions in there. And the idea is to be  
22 able to do the balance without having a lot of  
23 chemical injections, that's called mole chemistry  
24 control. Westinghouse has used it for years. So I'm

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1 sure if there's a problem --

2 MR. SMITH: We do have a molar ratio  
3 thing that we're talking about.

4 MEMBER SIEBER: Right.

5 MR. SMITH: Yes, sir, we do. We do have  
6 that on our chemistry page where we monitor molar  
7 ratio and maintain it within a band.

8 MEMBER SIEBER: Has anybody taken  
9 boroscope and looked at the tube sheet in the steam  
10 generators? Like welding rod fits and stuff like  
11 that.

12 MR. BAJESTANI: We have -- actually in  
13 modification that is coming up on steam generator  
14 that we're going to have to do that. We are  
15 modifying the drains and the -- so we have to get  
16 there and we're going to have to look at that, at  
17 that time.

18 MEMBER SIEBER: Yeah, that's a good thing  
19 to do. You know, every once in a while you find a  
20 welding rod in there.

21 MR. BAJESTANI: Right.

22 MEMBER SIEBER: Do you have a blow-down  
23 system?

24 MR. BAJESTANI: That we do, yes.

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1 MEMBER SIEBER: Okay.

2 MR. BAJESTANI: A steam generator blow-  
3 down, yes.

4 MEMBER SIEBER: Sometimes when they put  
5 them in the condensate polisher, they say you can  
6 save money with that by not putting it in and you  
7 find out you can never get it into specs, because the  
8 polisher won't do it by itself.

9 MR. BAJESTANI: We make sure under future  
10 meetings that we discuss the chemistry in a little  
11 bit more detail.

12 MEMBER SIEBER: Okay.

13 MR. KOONTZ: Yeah, I can probably add a  
14 little bit. This is Frank again. But, Steve, we  
15 normally run on steam generator blow-down. We don't  
16 use the condensate polishers at Watts Bar on Unit 1.

17 MR. SMITH: Yeah, on the start-up.

18 MR. KOONTZ: So they keep the chemistry  
19 very clean on the blow-down system. And as far as  
20 the --

21 MEMBER SIEBER: It's got a pretty good  
22 capacity, I take it, for blow-downs?

23 MR. KOONTZ: Blow-downs, yes.

24 MEMBER SIEBER: Not just a blow-down in

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1 name only.

2 MR. KOONTZ: Right. Chemistry monitors  
3 that and then if there is anything that needs to be  
4 done, they install -- you know, they will put a  
5 polisher in to take care of it.

6 MEMBER SIEBER: Okay.

7 MR. KOONTZ: On the weld rod, we, as I  
8 mentioned, will be doing the hydrolasing and the  
9 foreign object search and retrieval for the  
10 generators.

11 MEMBER SIEBER: Hydrolasing is sort of a  
12 surprise? Because I wouldn't expect a lot of stuff  
13 in there. On the other hand, parts and junk from the  
14 manufacturer sometimes shows up unexpectedly.

15 MR. BAJESTANI: Yes.

16 MR. KOONTZ: I have seen some of that.

17 MEMBER SIEBER: Okay.

18 CHAIR RAY: Okay. Are we in to the  
19 differences discussion here?

20 MR. FREEMAN: Yes.

21 CHAIR RAY: Go ahead.

22 MR. FREEMAN: I am --

23 CHAIR RAY: Unit differences. You are  
24 done with --

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1           MR. FREEMAN: Yes, that's fine. The next  
2 slide shows the unit differences. The approach that  
3 we are taking. We are committed to reducing those  
4 differences, so that, at a minimal level, basically,  
5 that bullet in the middle there that talks about dual  
6 operator licenses, that that is not required.

7           The procedures require us to identify  
8 those operational and maintenance differences through  
9 the Unit 1 staff, so that training can be prepared to  
10 administer, you know, well in advance of it becoming  
11 necessary to the installation being done. But in  
12 cases where, you know, equipment is -- you know, it  
13 needs to be different because of obsolescence or the  
14 technology has advanced and it would be a good thing  
15 to put in the new stuff.

16          The objective is to make it look and  
17 feel, to select and specify equipment that looks and  
18 feels and responds to the operator the same way that  
19 the Unit 1 equipment does. And even though it may  
20 be, you know, the controller itself, it might have a  
21 push button instead of a toggle kind of switch, when  
22 the operator touches it, it will respond the same  
23 way.

24          The fidelity between the two units, you

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1 know, is something that we are paying close attention  
2 to, so if the plant has a specific reaction, we want  
3 that licensed operator, whichever unit that it is, to  
4 pull the same procedure, to respond to the same  
5 action steps and for the plant to respond to him the  
6 same way.

7 MEMBER SIEBER: Yeah, one thing I found  
8 important for dual units is location of the  
9 instruments and the controls on the board are in the  
10 same position.

11 MR. FREEMAN: Well, we're going through  
12 the CR.

13 MEMBER SIEBER: Not reversed, not over  
14 here on the unit and down here on another. I mean,  
15 that makes a big difference, because operators are  
16 under a lot of pressure in accident situations. And  
17 while they think and they look, they also move by  
18 instinct and feel.

19 MR. FREEMAN: You are exactly right.

20 MEMBER SIEBER: And always think of when  
21 you are doing your control room design and human  
22 factors, always think of your worst operator and for  
23 that guy.

24 MR. FREEMAN: Okay.

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1 CHAIR RAY: Would there be separate  
2 simulators?

3 MR. FREEMAN: Pardon?

4 CHAIR RAY: Will there be separate --

5 MR. FREEMAN: No.

6 CHAIR RAY: -- simulators?

7 MR. FREEMAN: Unit 1 will be the unit of  
8 record for our simulator and we will train on the  
9 differences between the two units. Steve was wanting  
10 to comment on the CRDR and that's --

11 MR. HILMES: Yes, Steve Hilmes with  
12 Electrical I&C. We have been very careful we keep  
13 the instruments, no matter what, up. As mentioned,  
14 the controller may look somewhat different, but we  
15 have tried to standardize the controller, so there  
16 isn't much learning there, that they understand them.

17 MEMBER SIEBER: The biggest factor is  
18 position.

19 MR. HILMES: Yes. And everything will be  
20 in the same position.

21 MR. FREEMAN: So we are striving for that  
22 and those differences that do exist again, we're  
23 making sure that the Unit 1 staff is aware of those  
24 and training is administered as it must be. There is

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1 a couple of -- I'm sorry.

2 MEMBER STETKAR: You mentioned, this came  
3 up, I used to be an operator, the -- what is the  
4 protection system on Watts Bar Unit 1? You mentioned  
5 Unit 2 is going to be Eagle 21.

6 MR. FREEMAN: It's Eagle 21.

7 MEMBER STETKAR: It is Eagle 21.

8 MR. FREEMAN: Yes.

9 MEMBER STETKAR: Okay.

10 MR. BAJESTANI: Identical.

11 MEMBER STETKAR: Fine.

12 MR. BAJESTANI: Right.

13 MR. FREEMAN: And I think Mr. Hilmes  
14 mentioned the control systems earlier. And even  
15 though that engine is going to be, you know,  
16 different down in the office instrument room, the,  
17 other than the controller differences that he has  
18 mentioned, control room will still be laid out the  
19 same. And again, we are striving for the same  
20 response and same feel in the Unit 2 side.

21 There is a couple of systems that are  
22 mentioned there that we are installing the new  
23 technology. Steven mentioned the RVLIS system,  
24 that's Reactor Vessel Level Indication System or

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1 Inadequate Core Cooling Monitor System. We are  
2 installing Westinghouse's new Common Q System. It  
3 will look a little different. It is -- I think it's  
4 a touch screen instead of the old LED screens and  
5 push buttons and stuff, but it will be laid out  
6 similar to where the operator can navigate through it  
7 using similar hand actions.

8 MEMBER SIEBER: Hopefully, you won't use  
9 RVLIS very often.

10 MR. FREEMAN: Yes. We are against that.  
11 And another difference is we are installing the  
12 Common Q System instead of the old traveling, the  
13 traversing in-core probe system. It's a fixed probe  
14 system. That's used primarily by the reactor  
15 engineering, so the operator interface with that will  
16 be less, but it is new technology that we are putting  
17 in.

18 MEMBER SIEBER: Are you going to have  
19 digital rod position indication?

20 MR. HILMES: Yes. Steve Hilmes. Yes, we  
21 will.

22 MEMBER SIEBER: In Unit 1?

23 MR. HILMES: We already have it in Unit  
24 1. We will have the same system.

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1                   MEMBER SIEBER:     It solves a bunch of  
2 problems?

3                   MR. HILMES:    Yes.

4                   MEMBER SIEBER:   Okay.

5                   MR. FREEMAN:     I have completed my  
6 material. Any other questions?

7                   CHAIR RAY:     Well, that's good timing-  
8 wise. It works for us. Let's see, this is our last  
9 chance to, in this session anyway, direct questions  
10 to the applicant. And we have got a few minutes, so  
11 anybody who has a question, please, pursue it.

12                   MEMBER STETKAR:   Does -- I'm not familiar  
13 enough and this is again the danger of ending too  
14 soon. Does some of the new I&C stuff use fiber optic  
15 cables so you are into different cable pulling and  
16 stuff?

17                   MR. HILMES:    Again, this is Steve Hilmes.  
18       Yes, it does. For example, the rod position system  
19 uses fibers. The BLP controls will have fiber, will  
20 all be fiber. We have quite a bit of experience with  
21 routing fiber, especially at Browns Ferry. We have  
22 done quite a bit. We have had a number of lessons  
23 learned along those areas, but yes, it --

24                   MEMBER STETKAR:    I was just curious,

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1 because, you know, the word cable and Watts Bar are  
2 two words that --

3 MR. HILMES: Yes. Our current  
4 specifications for installing cable does address the  
5 fiber optics. We test the fibers as far as  
6 diminishing signal, all those types of things.

7 MEMBER SIEBER: I understand the hard  
8 part is terminations.

9 MR. HILMES: It's not as bad as it used  
10 to be. They have gotten a lot better. And what we  
11 have -- one of the

12 MEMBER SIEBER: It was hands-on for a  
13 while.

14 MR. HILMES: One of the lessons learned,  
15 we learned at Browns Ferry, is we have a  
16 telecommunications group and they make it a whole lot  
17 easier. I mean, they can -- you see a lot less  
18 problems when they do the installation.

19 MEMBER SIEBER: They did ours, too.

20 MR. HILMES: Yes.

21 MEMBER STETKAR: Thank you.

22 CHAIR RAY: Anything else? Okay.

23 MR. KOONTZ: This is Frank Koontz again.  
24 I had one open item from this morning. Someone

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1 questioned what the NSIP was for the diesel  
2 generators. I did verify with my counterpart on Unit  
3 1.

4 CHAIR RAY: MSPI.

5 MR. KOONTZ: MSPI, I'm sorry, MSPI. That  
6 it is green for the diesels and has always been  
7 green.

8 CHAIR RAY: Thank you. Okay. Let me --  
9 we will take our break 15 minutes early, but before  
10 we do that, let me say for the applicant and also for  
11 the staff who will be coming back after the break,  
12 that the time on the agenda shown as Subcommittee  
13 deliberations will be a time at which we will be  
14 talking about whether we understand what the purpose  
15 of a letter would be, should we write one, I've got  
16 the Chairman on my left, the Vice Chairman on my  
17 right, for the Full Committee, so I'll get a lot of  
18 help in trying to work to a conclusion there.

19 But I -- and I think primarily this is a  
20 dialogue that would perhaps engage us with the staff.

21 I take it that the applicant doesn't have any  
22 craving for a letter from the ACRS, at this point in  
23 time. Am I correct?

24 MR. BAJESTANI: I don't think so. At

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1 least from our side of it, no.

2 CHAIR RAY: All right. Well, I just  
3 wanted to say that if you hear us, if you stick  
4 around and hear us discussing this, we are going to  
5 be trying to come to some conclusion here, because  
6 although we have a lot interest you heard them  
7 expressed here, what we need to focus back on is  
8 well, all right, what is it that we would opine on,  
9 if anything, at this stage of the game?

10 We haven't come to a conclusion about  
11 that, but we will. Okay. With that, we will take a  
12 15 minute break and resume at a little after 12:45.

13 (Whereupon, at 2:30 p.m. a recess until  
14 2:57 p.m.)

15 CHAIR RAY: Okay. The hour of 3:00  
16 having near enough arrived, we'll resume. Bob?

17 MR. HAAG: Good afternoon. My name is  
18 Bob Haag. I'm the branch chief with the NRC's Region  
19 II Office in Atlanta Georgia. And my branch is  
20 responsible for implementation of Watts Bar 2  
21 Construction Inspection Program.

22 Several items that were brought up  
23 earlier this morning, as far as questions, I have  
24 captured and I plan on talking about later on. But I

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1 wanted to get through a couple of slides and kind of  
2 just give you the overall structure of the inspection  
3 program and kind of how the region is organized as  
4 far as the inspection program.

5 This slide right here depicts the  
6 traditional Construction Inspection Program that has  
7 been implemented for Watts Bar Unit 1 and all  
8 previous operating sites. It includes, you know, the  
9 three major programs: 25.12, 13 and 14. And each of  
10 those have a large number of individual inspection  
11 procedures that have to be done to be able to say  
12 that aspect of the construction inspection program is  
13 finished before we proceed on the next one.

14 And ultimately, what has happened is once  
15 we have completed all our inspections and are  
16 satisfied that the plant is properly built, the  
17 regional administrator would make a recommendation to  
18 the Director of NRR as far as issuance of a license.  
19 So that's the expectation as far as how we would  
20 proceed with this one.

21 Clearly though, it's recognized and it  
22 was brought up earlier today, there is a number of  
23 unique situations and the history of Watts Bar Unit 2  
24 dictate that we do more than traditional construction

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1 inspection programs. And I'll try to talk about  
2 those, some of the activities that we have got  
3 planned. And what you will hear mostly will be what  
4 our plans are.

5 You will see as far as our implementation  
6 inspections, we have done a years worth of  
7 inspections, but we're just starting our real  
8 inspection program. Likewise, TVA is really just  
9 starting their construction as far as safety-related  
10 work in the area that will have an emphasis on.

11 The next slide deals with our  
12 construction organization. We fall under the new  
13 organization that was developed in Region II a couple  
14 of years ago that was intended for new reactors.  
15 When Watts Bar 2 came along, it was decided that it  
16 would be a good fit to put my group within that  
17 division and use the resources from the division as  
18 far as the engineering needs, the specialty needs for  
19 several reasons.

20 One of the reasons is we didn't want to  
21 impact the inspection program or the operating sites.

22 We wanted to minimize on our tests there. And we  
23 wanted to get an opportunity of developing the new  
24 inspectors for the construction inspection program

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1 utilizing them at Watts Bar, gaining them experience  
2 when doing construction inspections.

3 As far as the -- my branch, it falls  
4 under the Division of Construction Inspection. My  
5 branch is solely responsible for Unit 2. We have no  
6 other responsibilities or duties. My organization is  
7 broken down into the site inspectors, resident  
8 inspectors and I've got regional inspectors that  
9 report directly to me.

10 As far as the resident inspectors, we've  
11 got a senior resident inspector and two resident  
12 inspectors. They have been in place for a little  
13 over a year doing inspections, following TVA's  
14 activities. For 2008, we did a number of inspections  
15 and I'll discuss those later on.

16 Within the region, we have got  
17 individuals solely responsible for inspecting Watts  
18 Bar Unit 2. They fall within my branch. I have got  
19 senior project inspector and two project inspectors.  
20 And then we have got the other organization,  
21 Division of Construction Inspection.

22 And I'm not sure if you are familiar with  
23 the way a region typically is organized, but you will  
24 have divisional reactor projects, DRP, who handle the

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1 resident inspectors on day-to-day activities. And  
2 then you have got a division of reactor safety, DRS,  
3 who have the specialized areas, the welding  
4 engineers, fire protection, people like that.

5 And the construction organization is  
6 similarly organized where we will pull on those  
7 expertise to provide inspections in the areas that  
8 might -- may not have those capabilities.

9 As far as staffing, one of the items I  
10 wanted to mention, right now our staffing level is 10  
11 FTE. My branch takes about 4 -- excuse me, about 6  
12 FTE and we rely on the remaining 4 FTE to provide  
13 those specialized inspections from Division of  
14 Construction Inspection.

15 We will be looking at staffing at the  
16 site and with the possibility of increasing reg  
17 inspector by one. We will be looking at that later  
18 this summer. We have got a placeholder where once we  
19 better understand the level of on-site construction,  
20 how that fits as far as whether it is better suited  
21 for a resident inspector or a regional inspector. We  
22 will make that decision then. And if we do decide to  
23 have another res inspector, the goal is to have them  
24 there before the end of the year.

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1 MEMBER ABDEL-KHALIK: Do you believe the  
2 staffing levels are appropriate, adequate?

3 MR. HAAG: For what we have been able to  
4 develop so far, as far as the scope of our  
5 inspections, you know, what we need to do, I believe  
6 they are adequate. And certainly with the level of  
7 activities that have been formed to date, we have had  
8 adequate resources to be able to cover those as our  
9 program depicts.

10 And keep in mind, a lot of our effort has  
11 been towards developing the inspection program. We  
12 took the existing program, 25.12, 13 and 14,  
13 understood what those requirements are, but added in  
14 all these other additional considerations to develop  
15 what our inspections ought to be. So a lot of our  
16 time this past 18 months has been developing,  
17 defining the scope of our inspections.

18 I want to pause here and go over a couple  
19 of items that you had mentioned you have an interest  
20 in. Really it's the status of Unit 2 during the time  
21 period of 1980 to 2007, what was going on there with  
22 the systems, particularly, what we were doing as far  
23 as our inspections.

24 We have an inspection that is required

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1 for plants in a deferred status. There is an  
2 inspection procedure that is laid out for there. We  
3 were doing those either once or twice a year. And it  
4 looked at the typical things you would expect, you  
5 know. It samples their preventive maintenance  
6 programs. It looks at their corrective action  
7 program, QA programs, things like that.

8 So we were doing those inspections up  
9 until TVA decided to go ahead and reactivate  
10 construction. I don't have all the -- I'm not going  
11 to provide all the details on that, but we did  
12 identify some problems. There were some violations.

13 But for the most part, we felt like TVA was doing a  
14 good job in implementing their program within the  
15 requirements that we had set forth.

16 Once they decided to reactivate  
17 construction, the Commission Policy Statement  
18 requires certain things that we need to look at to  
19 kind of give a baseline of where the project is to be  
20 able to look forward to what our inspections are.  
21 And one of the things that it requires inspection is  
22 to look at the lay-up program, the preventive  
23 instrument program and see how effective that has  
24 been to decide what level of activity needs to be

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1 performed for future.

2 And when we did a readiness inspection  
3 earlier in 2008, and I'll allude to the reasons why  
4 we did a readiness inspection, but part of that was  
5 to fulfill that requirement of the Commission Policy  
6 Statement. We looked at, you know, historically what  
7 their lay-up and preventive-maintenance programs  
8 were. We discussed in our inspection report how that  
9 program was initially set up. And later on in the  
10 early 2000s, as Masoud mentioned, you know, they had  
11 stopped -- the essentially stopped most of those  
12 programs.

13 So once it got to mid-2000, there were  
14 very few lay-up and preventive-maintenance  
15 activities. We documented then our inspection report  
16 and that goes towards our belief that the program for  
17 refurbishment is a critical point or critical aspect  
18 of what TVA needs to do and what we need to inspect.

19 And I would characterize it as that is one of the  
20 other areas that our inspection program doesn't  
21 dictate us to do, but we clearly understand that's a  
22 necessity.

23 MEMBER ABDEL-KHALIK: Now, the plant was  
24 put in a deferred status and they stopped these lay-

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1 up programs. Have your inspections continued at the  
2 same frequency?

3 MR. HAAG: As I said, yeah, earlier, we  
4 were doing them either once or twice a year,  
5 depending upon the intervals. We didn't have it set  
6 it had to be done every nine months.

7 MEMBER ABDEL-KHALIK: And despite the  
8 fact that these lay-up programs were terminated, your  
9 periodic inspections did not reveal anything of  
10 concern?

11 MR. HAAG: Well, it -- our inspection,  
12 when you go back and look at it, it recognized they  
13 followed their process as far as changing their  
14 Quality Assurance Program to allow them to do that.  
15 I mean, that's within our regulations, they can do  
16 that. So I mean, it wasn't like that was a violation  
17 that they were not meeting our regulatory  
18 requirements. It's an acknowledgement that they made  
19 the decision to stop those programs.

20 And as far as future inspections,  
21 clearly, as I talked about, you know, we will be  
22 looking at the refurbishment program. We have looked  
23 at their initial procedure they developed that gives  
24 the broad umbrella on how they plan to do

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1 refurbishment. We have provided comments. There  
2 were some areas that we felt like that the plan could  
3 be improved. Passive systems, it had very limited  
4 information, discussion on passive systems.

5 So we provided that information to TVA,  
6 as far as, you know, our review, you know, your  
7 umbrella program really doesn't provide a lot of  
8 guidance to implement this refurbishment program.  
9 And they put that item in their corrective action  
10 program.

11 You mentioned Appendix B and  
12 implementation of that in what we are looking at as  
13 far as Appendix B, quality assurance. If you go back  
14 and take a look at 25.12, there is a number of  
15 inspection procedures at 25.12 that deal with quality  
16 assurance looking at the program -- looking at the QA  
17 manual and several other areas.

18 So my answer to you as far as how we are  
19 going to inspect and verify the actual quality  
20 assurance program is by implementing those inspection  
21 procedures in 25.12. And we have taken the decision  
22 to complete those totally. We are not going to try  
23 to rely on previous inspections to say, you know,  
24 they had adequately implemented quality assurance

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1 programs. For the recognition, this is a new program  
2 that Bechtel here are working on. So we felt like we  
3 needed to do those procedures completely.

4 CHAIR RAY: Well, let's take something  
5 like concrete or cad welds or something of that kind,  
6 it's history.

7 MR. HAAG: Um-hum.

8 CHAIR RAY: The only thing you have is  
9 the QA records, the testing that was done of the  
10 concrete when it was poured and the rebar was being  
11 welded and so on. You have to -- I guess the  
12 question is what is your attitude toward those  
13 records? Those records are all you've got.

14 MR. HAAG: Yeah, yeah. On that specific  
15 example, and I'm jumping a little ahead in this  
16 explanation, but I'll provide it for you. Part of  
17 our effort to look at what we have done as far as our  
18 inspection record, you know, for example concrete.  
19 We have got a series of inspection procedures that we  
20 had that we need to implement for concrete placement.

21 We went back and looked at what  
22 inspections were done historically. How did those  
23 inspections satisfy the inspection requirements of  
24 the individual IPs? So we have done that baselining.

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1 We are also going to look at the -- there is a  
2 corrective action program dealing with concrete. We  
3 will make sure that that is properly done to ensure  
4 any of the historical issues dealing with concrete  
5 were satisfied.

6 That's kind of our strategy in looking at  
7 the historical records to -- for an area that is  
8 essentially complete. Concrete is a very good  
9 example where there will be very little future work  
10 on concrete. So how are we going to be able to  
11 satisfy ourselves, you know, in 2010, 2011 that the  
12 inspection program was satisfactorily performed?  
13 That's kind of our strategy.

14 CHAIR RAY: Okay. It's got to parts  
15 then. One is reviewing the record of what was done  
16 then and also whatever the corrective action program  
17 had to say on the subject, I guess. So that if, for  
18 example, I'm making this up, but, there were some  
19 deficient conditions that needed to be addressed, you  
20 would make sure that those were addressed?

21 MR. HAAG: Yes.

22 CHAIR RAY: I don't know what those  
23 deficient conditions would be, but --

24 MR. HAAG: Yeah. There was a per section

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1 program to address an area. Clearly, if there was  
2 some work that needed to be done, we would inspection  
3 those areas to make sure they were done  
4 satisfactorily.

5 CHAIR RAY: Well, it might involve  
6 calculations to show that the concrete was okay, even  
7 though it wasn't what was originally specified.  
8 Again, I'm making up an example. But that would be  
9 the kind of thing you would have to do.

10 MR. HAAG: As far as our inspection  
11 verification, correct. CAPs and SPs and that was  
12 another area that came out this morning as far as to  
13 what we want to look at and that's just a  
14 continuation of this discussion we are having.  
15 Earlier there is a temporary instruction that  
16 requires us to look at each CAP and Special Program  
17 as far as performing an inspection and being able to  
18 satisfy the inspection requirements and saying that  
19 CAP and SP are properly implemented.

20 So that's programmatically what is  
21 requiring us to do those inspections.

22 MEMBER ABDEL-KHALIK: Now, your  
23 inspection -- you used the word these CAPs and SPs  
24 had been properly implemented. Does your inspection

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1 also address the adequacy of these with regard to the  
2 change in the initial condition of the plant?

3 MR. HAAG: We talked about earlier, you  
4 know, the adequacy of the CAP and SP as being as it  
5 was submitted by TVA to the staff for the staff to  
6 look at the adequacy of the program. You know, is  
7 the program acceptable? And that's more our function  
8 as far as deciding whether the program  
9 programmatically it will address the issue. We're  
10 focusing on implementation.

11 MEMBER ABDEL-KHALIK: But as far as you  
12 know, none of these has changed where all of these  
13 had been ruled to be adequate?

14 MR. MILANO: With the exception of ones  
15 that we talked about this morning. Yes, the  
16 remaining ones we agreed with that programmatically  
17 they were fine.

18 MR. HAAG: Now, our approach to looking  
19 at these CAPs will not be just going straight looking  
20 at what, you know, TVA has submitted. What we will  
21 do is we will have several phases. We will go back  
22 and, you know, we will have an inspector assigned to  
23 a CAP or an SP and they will be responsible for  
24 ensuring those inspections are done. They will

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1 review the historical aspects, as far as, you know,  
2 what was done on Unit 1? What did we do as far as  
3 our inspection? What were our sample sizes? How do  
4 we document inspection report?

5 We will develop an inspection plan. You  
6 know, that will be reviewed and approved by regional  
7 management as far as what is going to be the scope of  
8 our inspections for the effort on Unit 2? And we  
9 will take any additional guidance from temporary  
10 instruction and ensure that is properly incorporated  
11 into that plan and go out and implement that plan.

12 And it will be typical NRC inspection  
13 sampling. You know, we will do a sampling aspect.  
14 We're not going to do 100 percent review.

15 Oh, excuse me. But getting back to the  
16 slides right here, I wanted to go over kind of the  
17 program development and our approaching the  
18 construction inspection program.

19 We developed an inspection manual,  
20 Chapter 25.17, with the recognition that we are  
21 taking this existing program that is historical in  
22 nature, manual chapters, the individual inspection  
23 procedures, the last time they were done was in the  
24 mid-1990s. The majority of it was done way earlier

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1 for earlier plants.

2 We made the decision, we collectively the  
3 NRC, that we weren't going to upgrade those  
4 individual manual chapters and those individual  
5 inspection procedures without current guidance and  
6 our current perspective on how we want to do  
7 business. We would develop kind of this overarching  
8 manual chapter that addressed areas that we wanted to  
9 do differently and provide guidance to the inspection  
10 staff on how to do business.

11 And example are probably the best way for  
12 me to explain why we need to do that. Our assessment  
13 process when you look at 25.12, 13 and 14, talk about  
14 the cell process. We clearly don't want to do  
15 assessments using cell process. So we had to devise  
16 a new method for assessing performance. That's laid  
17 out in the new manual, Chapter 25.17.

18 How we are going to write inspection  
19 reports. Our old guidance is questionable as far as  
20 do we -- is that the way we want to do business today  
21 on writing construction inspection reports? So we  
22 provided guidance in the manual chapter to the  
23 inspectors on how to write inspection reports. There  
24 are a number of areas like that where we felt we

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1 needed to give guidance to the staff, the recognition  
2 they are using, at times outdated guidance, as far as  
3 the individual inspection procedures in the manual  
4 chapters.

5 MEMBER STETKAR: Bob, is this chapter --  
6 you mentioned earlier the specific sensitivity to the  
7 refurbishment. Does this chapter specifically  
8 address guidance within that regime?

9 MR. HAAG: No, no. It's --

10 MEMBER STETKAR: Okay.

11 MR. HAAG: -- more program guidance.

12 MEMBER STETKAR: More program, okay.

13 MR. HAAG: Like how we conduct business.

14 MEMBER STETKAR: Okay.

15 MR. HAAG: And things of that --

16 MEMBER STETKAR: I was just curious.

17 MR. HAAG: Yeah. Now, we have for  
18 several of these unique situations that we are going  
19 to go back and look at historical allegations, where  
20 we want to go back and look at generic  
21 communications, where the program guidance really  
22 didn't give the staff an understanding of how to do  
23 that. We have developed internal guidance within the  
24 region for consistency.

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1 MEMBER STETKAR: Oh, okay, okay.

2 MEMBER ABDEL-KHALIK: So 25.17 is,  
3 essentially, a supplement to 25.12, 13 and 14? Is  
4 that correct?

5 MR. HAAG: You could look at it like  
6 that. It certainly provides the staff direction on  
7 how we want to conduct inspections at Watts Bar Unit  
8 2 where 12, 13 and 14 are generic. You know, they  
9 can be -- they would be implemented any time, 25.17  
10 specifically for Watts Bar Unit 2.

11 MEMBER ABDEL-KHALIK: But let's take  
12 something like 25.14. You have a unit that has been  
13 in operation for a long time. You have a unit that  
14 was been idle or, you know, set aside for a long time  
15 and is going to be completed after 25 or 30 years.  
16 There are a lot of common systems. Is there anything  
17 in 25.14 that would or does the instruction or  
18 guidance in 25.14 address these unique aspects that  
19 pertain to Watts Bar?

20 MR. HAAG: No. 25.14, remember we  
21 decided not to go back and update those. So if there  
22 -- if we do have guidance to the staff, it would be  
23 in 25.17. As far as start-up testing, I would have  
24 to go back and take a look specifically if we talk

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1 about, you know, again, the timing, the plant has  
2 been idle for that long. I mean, it's not new though  
3 that we would do start-up testing for a unit -- a  
4 second unit. I mean, that has been gone through a  
5 number of times.

6 MEMBER ABDEL-KHALIK: Right. You know, a  
7 plant that has been idle for a long time coupled with  
8 the fact that you have a lot of shared-systems --

9 MR. HAAG: There are certain unique  
10 considerations that we will have to take into account  
11 when we do that inspection program. And we will have  
12 to decide, you know, in those situation do we need to  
13 revise 25.17? Is it something that we can develop  
14 guidance within the region for our inspectors? Would  
15 regional management file for -- you know, we will  
16 have to make those decisions as we get --

17 MEMBER ABDEL-KHALIK: So 25.17 is still  
18 sort of in the evolution stage? It hasn't been  
19 finalized.

20 MR. HAAG: It's an existing chapter that  
21 we use on a day-to-day basis for doing our  
22 construction inspection. We have identified some  
23 areas that we want to revise and we have got a  
24 proposed change in the works for that. What we did

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1 on 25.12, we had the concept that we needed to have  
2 this bridge and old guidance that really didn't  
3 reflect current practices, so we were going to  
4 develop the manual chapter.

5 We had insights from Browns Ferry Unit 1.

6 And we issued this thing a year ago. Even before we  
7 started, you know, this was all part of the  
8 developing understanding what we wanted to do. And  
9 certainly changes may need to be made in the future  
10 or we may need to supplement in a different way.  
11 Okay.

12 MEMBER BROWN: I guess I didn't really --  
13 so you have done 25.17 because other procedures or  
14 inspections were outdated? I mean, you used those  
15 words before. And therefore, you didn't want to  
16 change the outdated stuff, you would just write some  
17 new stuff. And I guess I kind of lost the bubble,  
18 why do I want to have -- why are they outdated,  
19 number one? I mean, I don't know anything about the  
20 inspection table. Okay. So that question raised  
21 itself.

22 And if that's the case, why write a bunch  
23 of modifications as opposed to just updating 25.12 or  
24 wherever these outdated inspection requirements --

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1 don't you use them or do you never use them any more?

2 Is that the case?

3 MR. HAAG: The thought was this would be  
4 the last plant we would be inspecting and licensing  
5 under Part 50 at one time, you know, usage. And the  
6 level of effort to go back and revise all of those  
7 other documents versus developing a new manual  
8 chapter, it was decided, at that time, to develop a  
9 new manual chapter.

10 MEMBER BROWN: Okay. But did you still  
11 use some of the methods or whatever you had  
12 documented or is it all new? I mean, is 25.17 brand  
13 new? Is it complete in itself or does it draw on the  
14 previous?

15 MR. HAAG: We are still implementing  
16 those other programs. We are implementing 25.12.  
17 25.12 is a series of inspections that need to be done  
18 to say you have satisfactorily -- you set those  
19 instructions.

20 MEMBER BROWN: You said those were  
21 outdated.

22 MR. HAAG: They are outdated. They had  
23 some outdated guidance.

24 MEMBER BROWN: Okay. All right.

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1 MEMBER MAYNARD: 25.17, basically, takes  
2 those outdated parts and provides you with a method  
3 to that. How do you address that area?

4 MR. HAAG: Provides the staff with  
5 current guidance and reflection on how we want to do  
6 business.

7 MEMBER BROWN: All right. I quit.  
8 That's fine.

9 MR. HAAG: I mean, for example, when you  
10 take a look at 25.12, there is over 60 inspection  
11 procedures referenced in there. I mean, we didn't  
12 want to take the effort to revise 60 inspection  
13 procedures for one time use. And for the most part,  
14 that guidance is still good. I'm not saying, you  
15 know, all the guidance is outdated.

16 MEMBER BROWN: I understand the thought  
17 process.

18 MR. HAAG: Okay.

19 MEMBER STETKAR: Bob, you haven't  
20 developed the inspection manual for the new plants  
21 coming down the pipe yet, have you?

22 MR. HAAG: That's --

23 MEMBER STETKAR: Is that a completely  
24 separate --

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1 MR. HAAG: That's completely another part  
2 by NRO and the Region II Construction Program, yes.

3 MEMBER STETKAR: Okay. But that's over  
4 in the Region II Construction Program side of it?

5 MR. HAAG: Yes, and NRO.

6 MEMBER STETKAR: Okay. Thank you.

7 MS. BANERJEE: This is Maitri Banerjee.  
8 Bob, are you going to address the elements of the  
9 Commission policy on deferred plans? I thought there  
10 was some interest in that from the Committee. Like  
11 the maintenance of QA records, like I think Harold  
12 asked you a question in that area.

13 MR. HAAG: Yeah. Um, there is a CAP on  
14 quality records. We will be looking at that, if it's  
15 available, to ensure the aspect of quality -- of QA  
16 records as we implement our inspection procedures.  
17 You know, they have aspects of records reviewed, so  
18 we will be reviewing the quality assurance records as  
19 part of our routine inspections for the construction  
20 program.

21 CHAIR RAY: Well, okay. I guess it just  
22 seems like on the one hand there is a lot of activity  
23 taking place. There is a critical path schedule  
24 you're trying to accelerate it and so on. And yet,

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1 so much of what we ask about is perspective. We are  
2 going to do this or that in the future. It's hard  
3 for us to make a judgment. I can't do everything at  
4 once I realize that.

5 But you know, TVA talked about having 100  
6 engineers go out and verify what the plant conditions  
7 were before they then proceeded to do -- launch their  
8 program and do what they are doing. I guess what we  
9 are asking about in terms of these records and what  
10 we are trying to get at is are we satisfied that they  
11 are an adequate basis? There is a corrective action  
12 program that has to be implemented by them. You are  
13 taking a look at that. Is it being done timely, do  
14 you think, relative to the implications that it has?

15 MR. HAAG: As far as the timing of that,  
16 I mean, clearly certain aspects for the CAPs have to  
17 be completed before we would go and do our  
18 inspections. So we are monitoring TVA's schedule as  
19 far as those milestones and when they will have  
20 certain activities done, so we can go in and sample  
21 or the CAPs and SPs that actually have physical work,  
22 when those take place we can get out in the field.

23 CHAIR RAY: Well, just focus on the QA  
24 records.

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1 MR. HAAG: The QA records? Clearly, we  
2 well have to go in and do a sample of QA records. We  
3 have already done some limited review of QA records  
4 as part of the inspections that we have been doing in  
5 2008. We have looked at some of the weld records and  
6 things like that. So we have done some review. We  
7 have put our hands on some QA records, but we are not  
8 at a point where, you know, we're saying we have  
9 satisfied that particular CAP or are we necessarily  
10 satisfied the individual inspection procedures that  
11 are called out where you go and look at the quality  
12 of the records and make sure those records are  
13 satisfactory.

14 CHAIR RAY: Well, if you were in our  
15 shoes and imagining that what we are trying -- one of  
16 the things we are trying to do here is come to a  
17 conclusion as to whether or not the Commission's  
18 direction is being -- whether we had any comments on  
19 its implementation. It would be hard to make a  
20 judgment about that particular point, for example,  
21 given what we --

22 MR. HAAG: It's more is your development  
23 to date, does it make sense. Clearly, implementation  
24 has yet to be proven as far as us going out and

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1 saying we have inspected this.

2 CHAIR RAY: Um-hum.

3 MR. HAAG: Or we are satisfied that that  
4 activity is properly implemented.

5 CHAIR RAY: Well, there does arise the  
6 question of, I guess, timeliness or are we going to  
7 do things in a sequence in which they logically  
8 should be done in order to be effective. And it's a  
9 hard thing to answer when most of the issues are  
10 answered in the way that they are. Because it's hard  
11 for us to link up what's going on. Obviously, the  
12 train has left the station on its way to the next  
13 station and -- well, I have said enough. Why don't  
14 you go ahead.

15 MR. GIITTER: Can I just interject for a  
16 second? This is Joe Giitter. I just wanted to  
17 reemphasize that we are very much at a starting point  
18 here. And we really are here to, number one, inform  
19 you of the process that we are following, both in  
20 terms of licensing and construction inspection.

21 CHAIR RAY: Um-hum.

22 MR. GIITTER: And we feel it is important  
23 to engage you now, rather than later on. And we  
24 really -- you know, we are doing this because we want

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1 to. You know, we would like a letter from you. It's  
2 not absolutely necessary. But you know, as an  
3 independent body, we are hopeful anyway that you  
4 would endorse the approach that we are taking.

5 And we plan to come back and meet with  
6 you on a regular basis. And Pat is going to talk  
7 about that later on. But again, we think this is an  
8 important first step. There is obviously a lot of  
9 work that still has to be done. There is a lot of  
10 implementation, a lot of construction inspection, a  
11 lot of licensing work.

12 We believe we are at the very beginning  
13 stages of this for the most part.

14 CHAIR RAY: Well, okay. Let me though  
15 take advantage of your having opened up that point.  
16 Let's see, it's now almost April, which means that  
17 five months ago this office instruction LIC-110 came  
18 out. I asked earlier today about the reactivation  
19 assessment group and I understand there is a draft  
20 charter being reviewed.

21 MR. GIITTER: That's correct.

22 CHAIR RAY: There is also something that  
23 says independent design verification program. This  
24 group for which we just now have a draft charter will

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1 recommend whether or not an independent design  
2 verification program by the staff is required to  
3 independently verify the key aspects of the plant  
4 have been designed properly.

5 You know, I just really wonder whether or  
6 not, when we get around to that, it's going to be  
7 timely. So if you want me to write a letter, which  
8 isn't going to happen, but if that were to be the  
9 case, I mean, that would be the kind of thing I would  
10 express concern about is well, when are you going to  
11 do these things?

12 Because it seems to me like there is a  
13 lot already underway here that if you are talking  
14 about independent design verification, my God, that's  
15 something that the longer you go before doing it and  
16 it takes a while to do for sure depending on what you  
17 are talking about doing, and it has to be done by the  
18 applicant, I did note that there was something about  
19 independent review, but it didn't constitute a design  
20 verification program, I didn't think. And I asked  
21 about who is responsible for the design and I heard  
22 the answer to that.

23 But anyway, I digress. The point is that  
24 timeliness becomes a part of what it seems like we

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1 would have a comment on, but it's hard to be sure  
2 given the information that we have. One would just  
3 think when you hear the applicant describe his  
4 program and what he is doing and when he is going to  
5 be getting to various milestones and then you  
6 determine that, at this point in time, that's  
7 something that a group that doesn't yet exist is  
8 supposed to make a recommendation about. It just  
9 doesn't seem like the things correlate very well. Go  
10 ahead.

11 MR. HAAG: Getting back to this, I wanted  
12 to go over a little about our strategy on  
13 implementing the construction inspection programs in  
14 25.12. I talked a little about the reconstitution,  
15 that's what I call Phase 1, where we went back and we  
16 looked at, you know, the inspection record. And we  
17 have completed those for the applicable inspection  
18 procedures that we felt needed to be reconstituted.

19 There are some that weren't  
20 reconstituted, because they were not applicable.  
21 There are some inspection procedures in 25.12 that  
22 talk about doing inspection exits with the licensee  
23 and it really is not something dealing with  
24 inspecting the plant, per se. So we didn't -- there

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1 is a small group of those.

2 We also didn't reconstitute the  
3 inspection procedures that talk about reviewing their  
4 implementing procedures as far as procedures that TVA  
5 would be using for constructing the plant. Now,  
6 before you go too far there, let me give you the  
7 rationale.

8 All of the inspection procedures in 25.12  
9 were reconstituted for Unit 1. And our thought  
10 process there was for the inspection procedures that  
11 dictate the staff go out and look at implementing  
12 procedures and judge the quality of implemented  
13 procedures. How well you install or how you install  
14 cables, how you place rebar, things like that.

15 All those inspection procedures were  
16 complete for Unit 1. And that did the historical  
17 look back at construction up to 1990. So those  
18 things have already been inspected. Our strategy  
19 going forward for any new work will be implementing  
20 those inspection procedures where we will be looking  
21 at how TVA is going to install supports, their  
22 welding procedures, their NDE procedures. So we will  
23 be inspecting those. So that was another group that  
24 we didn't reconstitute.

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1           The results of that reconstitution was a  
2           status of the inspection procedures in 25.12. We're  
3           going to look at the scope of new work. We're going  
4           to look at the other areas that we said that we need  
5           to inspect and we will take that information and look  
6           back at those individual inspection procedures to  
7           make sure all the attributes, all the samples that  
8           are required by the individual procedures will have  
9           then been satisfied before we can say the program has  
10          been successfully implemented. That's our strategy  
11          as far as reconstitution.

12           Taking a look at the historical  
13          inspections that were performed and trying to put  
14          those into perspective as far as whether we can take  
15          credit for those.

16           The additional phases of our process  
17          would be Phase 2, and I'll talk about that a little  
18          bit with the additional considerations, the items  
19          that make Unit 2 Watts Bar unique. And the next page  
20          talks about those other elements that we need to  
21          factor into our inspection program.

22           Historical allegations, I mentioned as  
23          far as we reviewed those historical allegations. The  
24          generic communications, that was a very important

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1 piece where we needed to look at it, understand what  
2 NRR did from reviewing generic communications, but  
3 our emphasis was on what items need to be inspected.

4 Pat was looking at it from a perspective of TVA's  
5 approach on it, does it satisfy NRC expectations as  
6 far as more programmatic?

7 Our focus was on do we need to inspect to  
8 ensure that the programs are adequately implemented.

9 We identified a number of generic communications  
10 that we will be inspecting, too. The CAPs and SPs  
11 are also included in that.

12 Historical open items. We went back and  
13 looked at historically where -- what's the status of  
14 our Notice of Violations, our unresolved items,  
15 things like that that we identified earlier in our  
16 inspection program and didn't close out. And do we  
17 need to go back and look at those? Are they  
18 hardware-related issues? Are they something that we  
19 need to touch now before we can say the plant was  
20 properly built?

21 So all those additional elements are  
22 going to be rolled into our inspection program scope  
23 and what we need to do before we can say the plant  
24 was properly built.

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1           The next slide talks about the assessment  
2 process. I mentioned earlier the need for coming up  
3 with a new assessment process. What we did there, we  
4 looked at the Reactor Oversight Program, the  
5 structure of that and adopted many of the key  
6 components of the ROP assessment process, recognizing  
7 there are some distinct differences. There is no  
8 performance indicators for construction site.

9           There is also not the structure in taking  
10 inspection results and running it through a  
11 significant determination process and coming up with  
12 a particular risk perspective and then we don't have  
13 an action matrix. So we didn't have some of the key  
14 components in the ROP, but we did take the structure  
15 and as many aspects that were applicable to a  
16 construction site and are applying that to our  
17 assessment process.

18           We have implemented that assessment  
19 process for 2008. We did our end-of-cycle review  
20 looking at inspection results. And we're going to  
21 have a public meeting coming up in April.

22           CHAIR RAY: It's very soon, in other  
23 words.

24           MR. HAAG: Yes.

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1 CHAIR RAY: In April, meaning tomorrow  
2 or?

3 MR. HAAG: April 14<sup>th</sup>, April 14<sup>th</sup>, April  
4 14<sup>th</sup>.

5 Inspection accomplishments. I think we  
6 talked about many of those. Establish of the  
7 resident office. At one point there, I think it has  
8 been brought up that resident office is totally  
9 separate from Unit 1. They report to a different  
10 organization chain in Region II. There is a lot of  
11 interaction between the two as part of the oversight  
12 of construction activities and making sure they don't  
13 adversely impact the Unit 1 operations.

14 The readiness inspection, that was really  
15 an outcome of when we went back and looked at lessons  
16 learned from previous construction activities and  
17 problem areas and recognition that quite often  
18 construction would start really before an applicant  
19 had adequate controls in place. So we decided early  
20 on we were going to look at TVA's program  
21 development, their implementing procedures, their  
22 infrastructure to see if it was ready to support  
23 construction activities.

24 So back in March of 2008, we did a two

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1 week inspection with, approximately, 67 inspectors  
2 focused on quality assurance activities, engineering  
3 activities, training, again, to have a level of  
4 assurance that TVA had adequate controls in place  
5 before it really started construction.

6 And the outcome of that was, for the most  
7 part, we felt like they did have adequate controls in  
8 place for the given the amount of work, but it was  
9 recognized that there was more program and process  
10 development that needed to take place. For example,  
11 a number of procedures they didn't have in place at  
12 the time, but they weren't doing the corresponding  
13 work, so clearly that was an acceptable condition at  
14 the time.

15 Since then, we have gone back and looked  
16 at those inspection procedures that deal with quality  
17 assurance and engineering. We have looked at how TVA  
18 has progressed in, you know, those programs across  
19 these and have looked at those.

20 Okay. The rest of the bullets pretty  
21 much have already been discussed.

22 MEMBER STETKAR: Just because I'm not  
23 familiar at all with the inspection process, earlier  
24 we heard that, for example, work being done on shared

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1 systems between Unit 1 and Unit 2 is going to be  
2 controlled administratively by Unit 1, because --

3 MEMBER SIEBER: Right.

4 MEMBER STETKAR: -- it affects --

5 MEMBER SIEBER: The operating plant.

6 MEMBER STETKAR: It's the operating  
7 plant. Who, in the region, looks at the  
8 effectiveness of those work controls? Is it you on  
9 the construction side or is it Unit 1 under the  
10 operation side? And what level of assurance do you  
11 have that guys looking at normal operations are  
12 sensitive to the construction side and vice versa?

13 MR. HAAG: Yeah.

14 MEMBER STETKAR: Just in that work, you  
15 know, control process, that integration of the  
16 things, if, indeed, you're organized. You know, you  
17 said you have two separate offices.

18 MR. HAAG: Separate offices, yes.

19 MEMBER STETKAR: You talk to one another,  
20 but you actually are distinct.

21 MR. HAAG: I would respond to that by  
22 saying just that the daily interaction that the  
23 resident inspectors have, for example, a couple of  
24 them carpool together, so that --

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1                   MEMBER STETKAR:   Yeah, but it's ad hoc,  
2                   not a --

3                   MR. HAAG:   Yeah.   I mean, we purposefully  
4                   wanted to maintain separate organizations so, you  
5                   know, we wouldn't have operational folks looking at  
6                   construction activities unnecessarily.   But there is  
7                   certainly a level of interaction whether it is from  
8                   the resident inspectors or whether it is from the  
9                   region, my branch talking with DRP counterpart as far  
10                  as what inspections we want to do.

11                  We have given insights to certain ROP  
12                  inspections.   For an example, under the ROP, they do  
13                  a programmatic inspection 50.59 process.   We gave  
14                  that inspection team some insights as far as things  
15                  they wanted to look at or they might consider because  
16                  of the Unit 2 Construction Program and the scope of  
17                  what those 50.59s needed to be in the future.

18                  So granted, it probably is informal, but  
19                  certainly my belief is that we are having those  
20                  interactions.   And we are sensitive to that.

21                  MEMBER MAYNARD:   I would certainly think  
22                  that the Unit 1 operating inspection team would have  
23                  the primary focus for the work control system that  
24                  affects the safety for Unit 1 and all that.   You guys

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1 may take a look at it and make sure that it is  
2 effectively getting the construction work done that  
3 you need. But I would think it would be the Unit 1  
4 construction or the Unit 1 operating inspection team  
5 that would be the ones looking at the adequacy of the  
6 work controls to take care of the safety aspects.

7 MEMBER STETKAR: I was more concerned  
8 about are there any gaps that aren't somehow covered?  
9 Because the Unit 1 is working at -- looking at  
10 strictly from the perspective of work control -- work  
11 process control and the --

12 MEMBER SIEBER: Isolation.

13 MEMBER STETKAR: -- construction is  
14 looking at, you know, different issues.

15 MR. HAAG: Right.

16 MEMBER SIEBER: Sure.

17 MEMBER MAYNARD: The Unit 1 folks would  
18 have to be making sure that those gaps didn't -- what  
19 gaps --

20 MEMBER STETKAR: Hopefully.

21 MEMBER MAYNARD: -- would be there that  
22 could affect safety.

23 MR. HAAG: Yeah.

24 MEMBER MAYNARD: That's the observation.

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1 MEMBER STETKAR: Well, the operating  
2 license, I believe there --

3 MEMBER SIEBER: How the inspection  
4 procedures are written is -- do you have inspectors  
5 that say here is what I'm supposed to inspect. You  
6 have one on the Unit 1 side and he is supposed to  
7 inspect the boundary to make sure that the  
8 construction effort isn't going to --

9 MEMBER STETKAR: Effect them.

10 MEMBER SIEBER: -- jeopardize the plant.

11 Then there has to be a counterpart that says the  
12 work that is being done in here matches the design  
13 drawings when the craftsmanship is appropriate and  
14 the records are being kept. So there is really a  
15 joint thing that goes on in shared systems.

16 CHAIR RAY: Gentlemen, I have failed to  
17 keep us on schedule here.

18 MEMBER ABDEL-KHALIK: Well, let me just  
19 say --

20 CHAIR RAY: Bob is 15 minutes over right  
21 now.

22 MEMBER ABDEL-KHALIK: Okay.

23 CHAIR RAY: Yeah.

24 MEMBER ABDEL-KHALIK: One sort of related

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1 question. Has the operating experience of Unit 1  
2 and/or that of similar 4-loop Westinghouse plants  
3 affected either the design process or the review  
4 process or the inspection process?

5 MR. HAAG: Yes. Part of our developing  
6 what we wanted to inspect, we considered operating  
7 experience. And we have defined those parts of  
8 operating experience and how we're going to  
9 accomplish that. So Region II has an effort to look  
10 at operating experience. We have had it limited,  
11 though, to what's reasonable and what we can  
12 accomplish.

13 We have also looked though at what TVA is  
14 doing as far as operating experience, Part 21, things  
15 like that, so we are looking at it both from, you  
16 know, what we want to do and what we would expect TVA  
17 to do.

18 MEMBER ABDEL-KHALIK: Well, let me ask  
19 the applicant then the same question. Has the  
20 operating experience of Unit 1 or similarly designed  
21 4-loop Westinghouse plants affected your design  
22 process for Unit 2?

23 MR. BAJESTANI: This is Masoud Bajestani.  
24 As I mentioned when I was going through my

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1 presentation, we have picked up all those lessons  
2 learned as we went through start-up. There was a  
3 whole bunch of lessons learned that we actually had  
4 to make significant changes. And I'm going to give  
5 you an example.

6 As we were going through the start-up, we  
7 found out that we don't have adequate feedwater  
8 heater bypass. So what we are doing for Unit 2,  
9 actually since Unit 1 has already done that, they  
10 changed their's, so we are actually implementing the  
11 same change. We are putting three separate lines on  
12 feedwater heater bypass. So there are some changes.

13 MEMBER ABDEL-KHALIK: But there must be a  
14 whole lot more --

15 MR. BAJESTANI: Oh, a whole --

16 MEMBER ABDEL-KHALIK: -- other than just  
17 what you learned during start-up of Unit 1.

18 MR. BAJESTANI: There are a whole bunch  
19 of lessons learned. And all of those lessons learned  
20 is not just from the first-cycle of operation. It's  
21 actually for the 12 years of whatever the normal -- I  
22 mean, how many years Watts Bar has been operating.  
23 All those lessons learned actually has been picked up  
24 part of engineering program that we have to

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1 incorporate that into Unit 2 process.

2 MR. FREEMAN: Yeah, this is Ed Freeman.  
3 Every one of those operational issues, and I'll call  
4 it industry operating experience, that has merited a  
5 change to Unit 1, a design change, we are reviewing  
6 and incorporating those design changes in Unit 2. So  
7 I mean, those improvements will be incorporated in  
8 Unit 2 as well.

9 MEMBER ABDEL-KHALIK: Thank you.

10 MR. MILANO: And likewise, I would like  
11 to mention from the NRR side of it, as part of our  
12 reviews, we do look at service advisories and we look  
13 at operating experiences and changes in codes and  
14 standards and the rationale for why they are being  
15 changed. So that operating experience is factored  
16 into and will be factored into our design process,  
17 our design review process.

18 MEMBER SIEBER: Well, actually, your role  
19 is if you look at the ASME Code and the -- you are  
20 the enforcement agency for proper implementation of  
21 the code, so there are certain factors that you have  
22 to look at.

23 MR. MILANO: That's correct.

24 MEMBER SIEBER: I'm sure you're well

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1 aware of that. You have been doing it for 50 years.

2 But that is no small task.

3 CHAIR RAY: Bob?

4 MR. HAAG: Yeah.

5 CHAIR RAY: Or John, please.

6 MR. HAAG: Okay. I think the only last  
7 point I wanted to make was on the next slide that  
8 talks about upcoming activities. We have talked  
9 about, you know, what our inspections need to do,  
10 what we need to look at. I wanted to highlight  
11 though the problem identification resolution and let  
12 you know that one of the areas that, you know, we  
13 thought, you know, doing more than just what the  
14 program requires.

15 If you look at historical construction  
16 program, 25.13, 14, 12, there is very little emphasis  
17 on the corrective action program and our verification  
18 that the corrective action program is properly  
19 implemented and is effective.

20 So we have taken that on during this  
21 project to make sure that we follow some of the  
22 expectations that we do for the operating reactors  
23 and for problem identification that we have  
24 identified for new reactors and that we will have a

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1 much stronger effort to look at routine, corrective  
2 action activities, whether they are initiating curves  
3 at the right time, timeliness of the corrective  
4 action.

5 We are also doing periodic assessments.  
6 We have got an upcoming PI&R inspection in June where  
7 we will have a team of inspectors out there that will  
8 be looking at corrective action program. A similar  
9 matter that the operating plants are looking at it  
10 under the ROP. So lessons learned from, you know,  
11 corrective action programs and the NRC not providing  
12 enough emphasis in that area.

13 CHAIR RAY: Okay. Any questions of Bob?  
14 You'll stay there while Pat talks?

15 MR. HAAG: Yes.

16 MR. MILANO: Okay.

17 MEMBER SIEBER: Before we conclude, maybe  
18 I could ask a couple simple questions?

19 CHAIR RAY: Yes, do they go to Bob or to  
20 Pat, do you think?

21 MEMBER SIEBER: Well, they -- one of them  
22 goes to the applicant.

23 CHAIR RAY: Okay. We are a long way from  
24 concluding, but go ahead.

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1 MEMBER SIEBER: Okay. The -- my question  
2 is there is no construction work now being performed.  
3 Is that correct?

4 MR. BAJESTANI: We have done --

5 MEMBER SIEBER: At Unit 2.

6 MR. BAJESTANI: No, we have done some  
7 construction work.

8 MEMBER SIEBER: Okay. And do you have  
9 the inspection procedures to inspect the work that is  
10 being done now?

11 MR. HAAG: Oh, yes. We have been using  
12 inspection procedures.

13 CHAIR RAY: I would point out, Jack, the  
14 milestone schedule at TVA showed us it has something  
15 called "Commenced Principal Construction Activities  
16 Back in June of 2008." So I assumed that they were,  
17 in fact --

18 MEMBER SIEBER: So you're doing  
19 something. Okay. So the procedures are available,  
20 the inspection reports that have already been  
21 completed are available to us to look at?

22 MR. HAAG: We actually performed four  
23 quarterly inspections in 2008.

24 MEMBER SIEBER: Okay.

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1 MR. HAAG: And the results are available.

2 MEMBER SIEBER: Okay.

3 CHAIR RAY: Pat?

4 MR. MILANO: Okay. I'll get us back on  
5 schedule. Okay.

6 CHAIR RAY: The schedule isn't perfect,  
7 I'll say that.

8 MR. MILANO: All right.

9 CHAIR RAY: So don't worry about it.

10 MR. MILANO: As I mentioned earlier, the  
11 staff has incorporated TVA's schedule of licensing  
12 activities into the staff's overall project schedule  
13 using Enterprise Project Management Tool. And in  
14 addition to scheduling the activities and assigning  
15 resources for the major review efforts, the staff is  
16 currently working to input the other actions  
17 identified in LIC-110, as I mentioned before, the  
18 interaction such as these, the potential hearings and  
19 other items.

20 CHAIR RAY: Well, I would comment on two  
21 things that seem, to me, to be untimely, but maybe  
22 they aren't untimely, since you got this  
23 sophisticated scheduling tool. Are they timely, the  
24 appointment of this review group and the

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1 determination that it is required to make with regard  
2 to design verification?

3 MR. MILANO: First of all, the Design  
4 Verification Program, that's a licensee program, but  
5 the TVA has made its decision with regard to whether  
6 or not they are going to -- whether they are going to  
7 do an IDVP.

8 CHAIR RAY: Oh, now wait a minute. I  
9 tell you again that this LIC-110 has this WRAG  
10 recommend to whether or not it should be done.  
11 That's what I'm asking about. I'm not asking what  
12 the applicant is doing.

13 MR. MILANO: No, I'm not trying to say  
14 that we -- I'm not trying to justify why that -- the  
15 reactivation assessment group is -- why it is late.

16 CHAIR RAY: Okay. All right.

17 MR. MILANO: I agree with you.

18 CHAIR RAY: My point is that you are  
19 talking about your integrated schedule and so --

20 MR. MILANO: Yes.

21 CHAIR RAY: And so it invited a comment.

22 MR. MILANO: I agree with you. We are  
23 putting those items into it recognizing that there  
24 are some things that are probably not timely and

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1 stuff. However, to digress a second, since you  
2 brought up that point, there are aspects that have  
3 been -- that will be codified in the charter. We  
4 have on at least three occasions had lengthy  
5 discussions with -- between NRR and Region II about  
6 things that we need to coordinate between ourselves  
7 and then subsequently, you know, how we are going to  
8 elicit that information from TVA and things like  
9 that.

10 So we have met on a number of occasions  
11 on an -- with an ad hoc group that will probably be  
12 incorporated into the assessment group. Not to say  
13 it is -- you know, we don't need the charter and we  
14 don't need to have that group functioning. But I'll  
15 stop there.

16 MR. RAGHAVAN: Excuse me, this is  
17 Raghavan. Just as a matter of lessons, in Browns  
18 Ferry we had the regulatory assessment, which was  
19 called the Oversight Plan. It was operating in an  
20 informal basis, but just prior to -- about two years  
21 prior to the actual restart of the facility, that's  
22 when the panel started meeting in a more periodical  
23 basis. Like maybe three months and three months and  
24 once a month, it just went on.

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1           So to address your question, Mr. Ray, in  
2 terms of timeliness, we felt that that two years  
3 would be a sufficient time to get back on track.  
4 Right now, we are -- the LIC-110 just is to put a  
5 framework together. This is just an office  
6 instruction of how do I go from A to Z? How do I  
7 start this project? And how do I end this particular  
8 project?

9           And what we intend to do is just as we go  
10 along right now when the engineering is done and the  
11 construction is going on and the inspection starts,  
12 then that's when the regulatory assessment will kick  
13 in. And we have done several at this point. As  
14 Frank pointed out, we have done several meetings, but  
15 it has not been that periodic. It has been more like  
16 every four months. In fact, we are scheduled a  
17 meeting on May 13<sup>th</sup>.

18           So it's an ongoing process. We have not  
19 started it. I understand your concern with regard to  
20 the timeliness. I think two years will be an  
21 appropriate time to kick off the regulatory  
22 assessment group.

23           MR. MILANO: Okay, okay. You know,  
24 besides aiding the staff in an effective efficient

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1 accomplishment of all necessary actions, the final  
2 schedule, as I indicated, will provide a useful  
3 history or reference of what it took to complete the  
4 project.

5 This slide here just highlights some of  
6 the major milestones. And since we do input on a  
7 periodic basis from TVA's schedule, they provide us a  
8 bi-weekly update of their schedule, and we -- and it  
9 is automatically inputted in our ours and the EPM,  
10 you will see that these dates pretty much coincide  
11 with what TVA has stated.

12 That's basically barring -- now, if you  
13 don't have any other questions, we will just move on  
14 to the conclusion.

15 CHAIR RAY: Go ahead.

16 MR. MILANO: Okay, yep. In conclusion,  
17 you know, the staff would request of the ACRS that,  
18 you know, you provide us some type of letter, report  
19 if we should go to a Full Committee in May, with any  
20 recommendations that you may have with regard to the  
21 current review starting point, as we have described  
22 today in Supplement 21, and with regard to the  
23 inspection manual, Chapter 25.17 and others.

24 So that forms the basis of where we are

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1 starting for both the licensing and construction  
2 inspection.

3 Also, we look at this overall process of  
4 interfacing with your Subcommittee to be just one of  
5 a number of interactions. Rather than coming in late  
6 in the program, we would like to, you know, continue  
7 to have this type of dialogue while -- with your  
8 Subcommittee on a somewhat periodic basis.

9 Looking -- when we look at our schedules  
10 and stuff, we felt that based on the technical  
11 information that would be coming in, that it would  
12 probably be most effective to have the next  
13 interaction in about a year from now, March 2010, and  
14 then a year after that. And then as we start to  
15 approach the time period where TVA would be coming in  
16 and requesting the staff to issue an operating  
17 license, then the meetings would become closer and  
18 ultimately would -- we would have our -- the meeting  
19 that would lead to an ACRS coming to some type of  
20 recommendation as to whether or not the information  
21 on the design and inspection of the facility supports  
22 the reasonable assurance determination.

23 The staff, you know, plans to, by our  
24 scheduled plans, present its information to the Full

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1 ACRS Committee in about November 2010 for a final  
2 letter on the Watts Bar 2 operating license. Excuse  
3 me, I'm sorry, 2011. Thank you.

4 And this will support a staff briefing  
5 for the Commission in about January 2012 with the  
6 plans for -- if every -- if we do come to it -- come  
7 to that determination with regard to reasonable  
8 assurance, that we would recommend an issuance of the  
9 full power operating license in September 2012.

10 If you don't have any questions with  
11 regard to, you know, this recommendation with regard  
12 to our future interfaces with the Subcommittee and  
13 possibly with the Full Committee, I would like to  
14 just bring up a couple other points.

15 CHAIR RAY: Go ahead.

16 MR. MILANO: And -- excuse me?

17 CHAIR RAY: Go ahead.

18 MR. MILANO: Okay, um-hum. With that,  
19 you know, we have covered a lot of different topics  
20 today, both from the standpoint of the staff and TVA.

21 And what -- before we adjourn, I would like to know  
22 if we should -- if you should decide that we, you  
23 know, go to a Full Committee meeting in May, if you  
24 could give us some guidance as to what you would

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1 expect us to cover, since we spent the whole day  
2 today and yet, you know, that's a -- it's a limited  
3 appearance before the Full Committee.

4 You know, is there anything in particular  
5 from today's conversations that you would like us to  
6 address? And likewise, if there is something that we  
7 -- that you feel that we have missed, is there, you  
8 know, something else that you would like us to add  
9 into it, whether it is at the Full Committee meeting  
10 or would you like -- or is there something that you  
11 would like us to address at the next Subcommittee  
12 meeting?

13 CHAIR RAY: Okay. Well, we will -- we're  
14 going to deliberate, as I said, at the outset and  
15 then at the midday break as well and try and arrive  
16 at some view among the Members of the Subcommittee  
17 and we will do that after we determine -- after we  
18 are done with your discussion and we determine if  
19 there is any public input to be heard here today.

20 And you, obviously, can observe our  
21 discussions. They may lead to further discussions  
22 with the Full Committee later this week and then  
23 feedback to you.

24 MEMBER STETKAR: Can I just ask him one

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1 quick one?

2 CHAIR RAY: Of course.

3 MEMBER STETKAR: Thank you. It's only 2  
4 minutes.

5 CHAIR RAY: We're not done.

6 MEMBER STETKAR: Just to help get this a  
7 bit straight. And this is relevant to interactions  
8 among us, between us. You mentioned, Bob, that you  
9 have done some amount of inspections in 2008. And I  
10 might have missed it, because I was looking at other  
11 things, what level of inspection activity do you  
12 anticipate in calendar year 2009?

13 In other words, you know, there is  
14 something that says well, you would expect to come  
15 back to us a year from now and have a meeting. What-  
16 - do you expect most of your regional inspection  
17 activity to be done in the 2010/2011 time frame or do  
18 you have a pretty aggressive schedule to 2009?

19 MR. HAAG: 2009 --

20 MEMBER STETKAR: I mean, you know, you  
21 kind of gave us bullets of the things you are  
22 planning to do, but you didn't really speak to how  
23 that was organized very well.

24 MR. HAAG: I mean, having doing the

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1 inspection has to coincide with site activities,  
2 especially those work observations. And then the  
3 records review will follow. We are doing some of the  
4 preliminary inspections now as far as looking at  
5 procedural adequacy to -- you know, for those  
6 procedures that are available.

7 But you know, a large amount of safety-  
8 related work per schedule will be starting mid-2009,  
9 late-2009. So we -- our corresponding inspections  
10 will look at those and ramp up.

11 MEMBER STETKAR: Thanks.

12 MR. HAAG: Yes.

13 CHAIR RAY: Any other questions to the  
14 staff from Members? All right. Maitri, do we have  
15 any public?

16 MS. BANERJEE: No. I didn't see any  
17 public, other than, of course, TVA, and everybody  
18 else from the licensee --

19 CHAIR RAY: Well, the applicant --

20 MS. BANERJEE: -- and qualified --

21 MEMBER MAYNARD: On the phone still?

22 CHAIR RAY: Huh?

23 MEMBER MAYNARD: Do we have any public on  
24 the phone?

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1 CHAIR RAY: Anyone on the phone wish to  
2 make a comment? We will open the listen only for a  
3 minute here and see. Any comment from telephone? If  
4 not, we will --

5 MR. MORRIS: No comment.

6 CHAIR RAY: -- go back to listen only and  
7 conclude that there are no members of the public  
8 wishing to make input then.

9 MS. BANERJEE: Can I ask a question,  
10 please?

11 CHAIR RAY: Of course.

12 MS. BANERJEE: Okay. What I have been  
13 thinking is --

14 CHAIR RAY: Just one?

15 MS. BANERJEE: Yes, just one. I think I  
16 sort of asked it before, but I'm not totally  
17 convinced I got an answer. The inspection program  
18 elements I see here and I do not see anything coming  
19 in from the Commission policy statement on deferred  
20 plants. What I'm thinking, like TVA said, they  
21 opened up systems to see the internal condition  
22 system that has been in lay-up for at least 25 years  
23 and they checked the samples and stuff like that.

24 Do we have any inspection elements on

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1 those work? I mean, that particular kind of work  
2 that has been done?

3 MR. HAAG: As far as the Commission  
4 Policy Statement, it talks about once the applicant  
5 notifies the NRC of its plans to reinstate  
6 construction, reactivate construction activities,  
7 there are certain things we need to do. We did those  
8 during the readiness inspection back in March 2008.

9 Clearly, we are going to be looking at  
10 the refurbishment program. Like I said, we  
11 questioned TVA as far as what they are doing on  
12 passive systems. We are going to be looking at the  
13 active systems, components, amount of replacement,  
14 what they are doing. We have looked at their  
15 overarching program. They are still developing the  
16 details.

17 We were up there several weeks ago and  
18 asked for -- you know, give us some specifics as far  
19 as what is being changed out. And they are still  
20 working on those plans. They have got, again, that  
21 overarching, you know, program guidance, but the  
22 individual at the component level, that's still in  
23 progress, right, Masoud?

24 So I would say, you know, we will be

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1 looking at that, but it's really too soon.

2 MS. BANERJEE: Yes, but the deferred --  
3 the policy statement talks about say the lay-up  
4 program.

5 MR. HAAG: And again, we looked at those  
6 during the resident inspections.

7 MS. BANERJEE: So like they have done the  
8 sampling and said, you know, the sample -- from the  
9 sample we don't see any corrosion going on and it's  
10 fine inside, you know, it looks like just hydrolase.

11 But after you hydrolase, you cannot take another  
12 sample, because -- for some time, because you lost,  
13 you know, the first opportunity to see what happened  
14 in four or five years, you know, revealing inside  
15 that system.

16 So did you have any inspection element to  
17 look at that particular, you know, activities to help  
18 us agree with what TVA's conclusion was in terms of  
19 lay-up? And I think Otto mentioned that lay-ups  
20 could sometimes, if not done right, could even do  
21 harm.

22 MR. HAAG: My view on that would be that  
23 the Commission Policy Statement is on deferred  
24 plants. We have satisfied those elements as far as

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1 what it directs us to do once construction activities  
2 are reinstated. So we are beyond Commission Policy  
3 Statement for Watts Bar Unit 2. We are into looking  
4 at construction activities. Refurbishment is a key  
5 part of the construction activity for Unit 2, because  
6 of its history. And we will be looking at that as  
7 part of our inspection.

8 MS. BANERJEE: Okay.

9 MR. HAAG: Now, I mean, do I have an  
10 inspection program or inspection procedure that  
11 specifically talks about that? No. Because in my  
12 view, it's one of those unique circumstances. You  
13 know, it really wasn't envisioned as far as this  
14 situation.

15 MR. RAGHAVAN: This is Raghavan. The  
16 Commission Policy Statement has seven issues that the  
17 applicant has to do and three issues that the NRC has  
18 to do. And that's exactly what they did in terms of  
19 the Construction Readiness Assessment Program. Once  
20 that thing is done, we're no longer in the Deferred  
21 Policy Statement. We are in the active mode of  
22 construction.

23 And during that time, all the inspection  
24 procedures in the manual Chapter 25.12, 13 and 14, as

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1 supplemented by the delta, what I call the delta  
2 program, which is the 25.17, would constitute the  
3 inspection program.

4 MS. BANERJEE: So basically, you are  
5 saying things like that were done?

6 MR. RAGHAVAN: Yes.

7 MS. BANERJEE: Okay.

8 MEMBER BROWN: Well, the policy statement  
9 talks about maintenance preservation documentation of  
10 equipment. That's an item under --

11 MR. RAGHAVAN: Yeah, that's what I am --

12 MEMBER BROWN: -- Section III. And it  
13 lists the applicant or whoever it is is supposed to  
14 establish, maintain and verify the quality of plant  
15 conditions, etcetera, on and on and on when you read  
16 that. And what you are telling me, that's all done.  
17 That is all past, happened. And I don't think  
18 that's really the question that, at least not in my  
19 own mind, we haven't addressed.

20 In other words, what are -- we've got a  
21 30 year window, since this stuff was -- nobody has  
22 doing anything, 25 or whatever it is, 1985, pick the  
23 year, and nothing has been done with any of that.  
24 And what elements of the system structure and

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1 components, what stuff in there is affected by just  
2 age, period, 25 years?

3 I mean, organic material-type components  
4 like cables, insulation systems, electrical or  
5 insulation thermal material, whatever other type,  
6 stuff that changes and degrades just because it's  
7 there. It's not like blacksmith technology stuff  
8 like pipes, which, you know, stainless steel,  
9 stainless steel. I mean, this is a simpleminded  
10 electrical guy asking this, making these broad  
11 general statements.

12 And they change whether you are actively  
13 using them or not. And there is nothing -- nothing  
14 was said in either the 120 day letter or in the  
15 Supplement 21 relative to that thought process on  
16 stuff that has just been sitting around for 25 years  
17 and how you address the different -- or how each of  
18 them in its status now, it's kind of the initial  
19 condition question that Said brought up earlier, I  
20 mean, Harold also in the context of the discussion,  
21 what is different about all the stuff that was  
22 applied to Watts Bar 1 as opposed to what is  
23 different relative to how you are starting the  
24 starting point? Your initial starting point for

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1 Watts Bar 2.

2 And that really hasn't come out in any --  
3 I don't want to say coherent, it just hasn't come  
4 out. I mean, the framework is framework. You pick  
5 one. You've said hey, we've gone back and looked at  
6 where they were, all the corrective action programs.  
7 You looked at blah, blah, blah, I had a list here  
8 somewhere, generic letters, all that type of stuff.  
9 You established that's where we're going to start.

10 And the thing that was missing in my own  
11 mind was this assessment of parts, whatever the parts  
12 are, that are affected by time, that don't really get  
13 covered by any of those issues. There may be none.  
14 It's just, in my simple mind, it didn't seem to come  
15 out.

16 MR. HAAG: Our outlook on that was, as I  
17 mentioned earlier, clearly it's an important part of  
18 what we need to look at. But we need to recognize  
19 it's TVA's responsibility to define it, because they  
20 didn't implement an effective lay-up preventive  
21 maintenance program. They have got to go back and  
22 re-establish that. They need to --

23 MEMBER BROWN: Well, somebody has got to  
24 ask them.

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1 MR. HAAG: They --

2 MEMBER BROWN: Someone has got to tell  
3 them to do that or ask them to do that.

4 MR. HAAG: Well, we believe there -- they  
5 have got the initiative to do that. What we need to  
6 do is clearly inspect it and judge its adequacy. And  
7 that's on our plate. Certainly, a take-away from  
8 this meeting is we need to define that and I need to  
9 be able to provide you whether it is just our own  
10 internal guidance through our inspection staff and to  
11 ourselves as far as that we are adequately doing  
12 that, be able to present something to you.

13 Because right now, it's not covered by an  
14 inspection procedure, because again, I don't believe  
15 we anticipated that type of situation.

16 MEMBER BROWN: Well, no, it's very  
17 unique.

18 MR. HAAG: Yes.

19 MEMBER BROWN: That's why we are having a  
20 meeting.

21 MR. HAAG: So --

22 MEMBER BROWN: And I'm not worried about,  
23 you know, motors being rewound or generators being  
24 rewound. You know, Harold and Jack were very

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1 eloquent. Those types of things will be fixed. You  
2 know, they are on the checklist and they will be  
3 taken. What we are really looking for if -- in my  
4 own mind, is what are the things that we haven't  
5 thought of that we ought to be looking at?

6 MR. HAAG: And I think we owe that to you  
7 as far as our thought process and our strategy going  
8 forward on how we want to assess that.

9 MR. RAGHAVAN: This is Raghavan.

10 MEMBER BROWN: Well, let me make one  
11 other observation. I mean, I'm not a mechanical  
12 engineer, but a bunch of the construction project, a  
13 bunch of bolts and stuff were put together. They  
14 were torqued up. They are in place. Nobody has done  
15 anything with them for 25 years. Do they relax? Do  
16 they have to be redone? Is that part of the program  
17 to go back and look at that part of the aspect?

18 And maybe I don't know what I'm talking  
19 about, but at least we ought to know that those  
20 mechanical fit-up type stuff that affect the overall  
21 operation of the plant, that are kind of like  
22 blacksmith technology, do they change because they  
23 were sitting there or people say yeah, they could,  
24 therefore, we're going to check them all? And there

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1 is the list. That's -- I'll stop right there.

2 MR. RAGHAVAN: Okay.

3 MR. HAAG: Harold?

4 MR. RAGHAVAN: What I want to say is that  
5 if my memory serves right, in the year 2007, we asked  
6 a question in a documentation request for additional  
7 information. We requested TVA to address  
8 specifically this issue, what I call as, the aging  
9 phenomena. And that's something that program is  
10 there in our regulatory framework for us to address.

11 And unfortunately, the timing is not right. We did  
12 not address it in the SSER 21, but that's one issue.

13 And the TVA is supposed to make a  
14 submittal as to how they address those issues. And  
15 that would be evaluated programmatically and any  
16 inspection that arise out of that will be done by the  
17 region.

18 CHAIR RAY: Okay. Does the applicant  
19 want to make any comment on this last point as to  
20 some pending --

21 MR. BAJESTANI: I still say that for  
22 future meeting, we can go through the detailed review  
23 of what we are doing to make sure we address the  
24 question that we talked about, what other components,

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1 essentially, any polymer, any components, any  
2 material that is susceptible to aging as we go  
3 through the refurbishment is going to be changed out  
4 or establish limited qualified life.

5 CHAIR RAY: Okay. Thank you. All right.

6 Anything else again, one last time, for the staff at  
7 this point before we engage the Members of the  
8 Committee and Subcommittee in the discussion?

9 Okay. I'll make a comment and then I'll  
10 go around and ask for input from each Member. My  
11 comment is simply to go back and observe that the  
12 request, the main thing we need to think about here -  
13 - and maybe I should say one other thing first.

14 We appreciate, we all do, that this is a  
15 unique circumstance. Charlie called it ever very  
16 unique, so that's better than unique, I guess. And  
17 that therefore, the information being presented to  
18 the Committee and this interaction that was described  
19 is, I think I can speak for myself only here, but I  
20 believe it's welcome and helpful.

21 The issue is not that that -- the issue  
22 for us to consider is whether there is something that  
23 would warrant and would be appropriate for the ACRS  
24 to write a letter on, at this point in time. That's

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1 the issue at hand, not is this a good thing for us to  
2 have done. And in that regard, the request that has  
3 been made to us by the staff is for a letter in May  
4 with ACRS' recommendations for the current review  
5 starting point.

6 The current review starting point being  
7 defined initially as what is set forth in Supplement  
8 21. Just now, it was extended to include the  
9 construction inspection program in IMC 25.17. IMC or  
10 ICM, which is it? I forget.

11 MR. HAAG: IMC.

12 MEMBER SIEBER: That's a --

13 CHAIR RAY: Huh?

14 MR. HAAG: IMC.

15 CHAIR RAY: IMC. So that constitutes  
16 the, at least, requested scope of a letter for us to  
17 consider. Of course, the Subcommittee may recommend  
18 to the Full Committee a letter that includes other  
19 things. And we have certainly discussed other things  
20 here today. So that's the scope of the discussion I  
21 would like us to engage in and also that we can take  
22 something to the Full Committee and also advise  
23 participants in our meeting here today as to what our  
24 recommendation is going to be.

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1           The Full Committee will make its own  
2 decision. Huh? So I'll start with Jack.

3           MEMBER SIEBER: Okay. I --

4           MEMBER ABDEL-KHALIK: Do you want to go  
5 off the record?

6           CHAIR RAY: No. I talked to Maitri and  
7 we thought that we should do this on the record, so  
8 we will.

9           MEMBER SIEBER: Okay.

10          CHAIR RAY: Jack, go ahead.

11          MEMBER SIEBER: I think from an overall  
12 standpoint in my preparation for this meeting, I  
13 tried to picture what I would do if I were the  
14 applicant and what I would do if I were the staff as  
15 far as putting together a construction program, a  
16 pre-construction program where you evaluate what  
17 exists at the plant right now.

18                 And I have looked at it from the  
19 standpoint of separate tasks, you know, three tasks.

20         One of them is the pick-up and finishing of the  
21 development of the FSAR, and the SER that goes along  
22 with it, Supplement 21, to me, didn't help me,  
23 because I would have to read the FSAR and the SER,  
24 where it is right now, to make a judgment as to

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1 whether the items are opened or closed.

2 And I don't have the documents and I  
3 didn't do the work. That's a fair amount of work.  
4 And the only way that we could do it is on a sampling  
5 basis. And so in the same way with the construction  
6 program and its corresponding inspection program, we  
7 don't have the base documents, so it's hard to make  
8 decisions on the details.

9 If we write a letter and say things, I  
10 think we have to do it at a very high level. And in  
11 that regard, I think it is my opinion that both the  
12 applicant and the staff are doing the right kinds of  
13 things to move into refurbishment and completion of  
14 construction and also the completion of the  
15 application, which includes the FSAR and its  
16 corresponding safety evaluation report.

17 Right now, without further study, I don't  
18 think that we can say too much more than that, that  
19 the overall plan is -- appears to be okay. But the  
20 details of how this all goes together, I think, for  
21 us to be able to say anything about that, we have to  
22 do more work. And so I come down with that kind of  
23 an opinion that has to be kept at a high level, based  
24 on what we know right now.

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1 Overall, I do think the plans are pretty  
2 good. I think your construction schedule is pretty  
3 aggressive considering that the plant was laid up and  
4 parts were borrowed and so forth. And I think your -  
5 - since the unit appears to be pretty well integrated  
6 into Unit 1, that the construction effort is not  
7 going to be an easy one, because you are basically  
8 doing construction in the same building, so that the  
9 operating plant exists.

10 And so there is some challenges there.  
11 You brought up the staff requirements memorandum  
12 where the Commission expressed a desire to move into  
13 additional, you know, improvements. I commented in  
14 writing to the numbers here about that related to the  
15 fact that the licensing basis is already established  
16 and most of the design in the construction so far  
17 meets the licensing basis that was established for  
18 the plant.

19 On the other hand, there is tons of  
20 generic letters and TMI action plan requirements, 737  
21 and so forth that, obviously, have to be integrated  
22 into the design. And plus, a whole host of other  
23 issues, for example, gas accumulation in lines that  
24 prevent operation of pumps. Now is a good time,

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1 rather than pre-operationally, to take those kinds of  
2 things into consideration.

3 So I think that it is more up to our  
4 Subcommittee Chairman and the Full Committee to  
5 decide whether we ought to write a letter or not. I  
6 think that it is important for us to know whether the  
7 staff really needs a letter, at this time, or if we  
8 need to do additional work to get enough detail to  
9 write a more comprehensive letter than to just say  
10 the overall plan looks okay.

11 CHAIR RAY: Fair enough. Thank you,  
12 Jack. John?

13 MEMBER STETKAR: Yes. Several things  
14 Jack said I would echo. I guess my personal concern  
15 about writing a letter is how -- what does the letter  
16 say and how would it be interpreted? If we write a  
17 letter that says that this is an appropriate starting  
18 point, is the interpretation of that letter tacit  
19 acceptance by the ACRS of these words that say  
20 resolved and open in this?

21 Without -- you know, as Jack mentioned,  
22 we haven't had the opportunity to have the  
23 information presented to us to make a judgment about  
24 that. So I would be really concerned that we have to

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1 be very, very careful about how such a letter was  
2 written to have enough caveats in it to make sure it  
3 wasn't misinterpreted as --

4 MEMBER SIEBER: Acceptance.

5 MEMBER STETKAR: -- acceptance of this  
6 particular list of words that say open and resolved,  
7 relative to requirements. So that being said, I'm  
8 not quite sure how that letter would be written, if  
9 there was a letter.

10 The other -- on the flipside about why a  
11 letter might be issued/written and something the  
12 staff might not like, if they ask us for a letter, is  
13 some of the things you brought up in terms of  
14 timeliness of this process. I think there may be  
15 some concerns about the timeliness of the inspection  
16 process and the reviews that are being done that are  
17 programmatic, in a sense, but are somewhat of a  
18 concern.

19 And the question is, you know, should --  
20 given the request to write a letter, is it  
21 appropriate for us to comment? Do we know enough  
22 about that to comment and, essentially, raise a bit  
23 of a concern in that area? Again, it's not an issue  
24 that we have been requested to comment on, but the

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1 door has been opened. I'll leave it at that.

2 CHAIR RAY: Thank you, John. All right.  
3 Mario, did you want to say anything, at this time?

4 MEMBER BONACA: Yes. I think that, you  
5 know, I echo what was said before regarding a high  
6 level letter. That's the only kind of letter we can  
7 write. It would be so high level that maybe it would  
8 be meaningless, because, again, we have talked about  
9 licensing basis being Unit 1. We talked about  
10 Supplement 21.

11 And again in Supplement 21, it is full of  
12 statements about open items or resolved items. We  
13 haven't really seen the details of it. And so do we  
14 believe that we have -- there is a plan out there and  
15 things are happening? Yes. So we can say that.

16 But beyond that, I think we can build  
17 anything constructive. It seems to me that, you  
18 know, one concern I have is that if we are requested  
19 the letter in March of 2009, and then there is a plan  
20 to update us on March 2010 when some significant  
21 progress may have been made, and then again March  
22 2011, and we will be probably as -- unequipped to  
23 comment, at this time, with such long period of time  
24 in which we were not looking at the project.

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1           The better approach seems to me would be  
2           to have another Subcommittee in a couple of months  
3           whenever you can think that you can be prepared to  
4           give us a better overview of what is in Supplement 21  
5           and then have something more meaningful to say by  
6           that point.

7           So to have a more concentrated series of  
8           presentations to us where we can be familiar with the  
9           project better than we can be this way. Just a  
10          suggestion anyway.

11          If I had to make a call, and I'm speaking  
12          just as a Member here, I would probably not write a  
13          letter. But that's -- I'm open to hear from the Full  
14          Committee about that.

15          CHAIR RAY: Said?

16          MEMBER ABDEL-KHALIK: I guess I agree  
17          with a lot of the comments that have been made  
18          before. What I really would have liked to have seen  
19          is, you know, a clear explanation of the current  
20          state of Unit 2. And that didn't come across today  
21          at all. I think, you know, the Full Committee would  
22          probably be far more interested in knowing what does  
23          this plant look like today.

24          MEMBER BONACA: And that's a point I

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1 would like to point out to Said.

2 MEMBER ABDEL-KHALIK: And whether these,  
3 you know, corrective action programs and special  
4 programs are really appropriate and will do the job.

5 CHAIR RAY: Come with us in July to the  
6 south.

7 MEMBER ABDEL-KHALIK: You know, we get  
8 more than just simply a site visit looking around to  
9 see it. That would be far more informative in my  
10 view than just making a determination as to whether  
11 this Supplement 21 is the right way to go or we  
12 concur with it, even though we don't really have all  
13 the information that would allow us to pass judgment  
14 on the details of things as John mentioned. That  
15 would be my comment.

16 CHAIR RAY: Mario, did you want to say  
17 something?

18 MEMBER BONACA: No, I just was saying  
19 that I forgot to say they asked already that the Full  
20 Committee we get some -- even just some pictures of  
21 the plant, what it looks like. You know, I am  
22 leaving this meeting with a total lack of  
23 understanding of what 60 percent construction  
24 progress means. It would be nice to know that there

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1 is a reactor vessel somewhere. They can do that.

2 MEMBER ABDEL-KHALIK: Or what a plant  
3 that has been dematerialized over the past 25 years  
4 looks like.

5 CHAIR RAY: Well, yeah. The -- perhaps  
6 those -- that information does appropriate lie in a  
7 subsequent meeting that is not as far off as a year  
8 from now. Let me finish getting the input here. Are  
9 you done?

10 MEMBER BONACA: Yes, sir.

11 CHAIR RAY: Otto?

12 MEMBER MAYNARD: I don't think we should  
13 write a letter and I'll get back to that in just a  
14 minute.

15 CHAIR RAY: Be really clear.

16 MEMBER MAYNARD: I did really appreciate  
17 the meeting. I found it very informative. I think  
18 the staff and the applicant, I think, it really  
19 helped me get a better understanding of kind of where  
20 things are and I agree with Said, it didn't really  
21 get into some of the detail of what the actual state  
22 is, but it's a starting point for us anyway. And I  
23 do think it is good to get engaged, at this point,  
24 and be starting to take a look at that.

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1           You know, I don't know what good or what  
2 we could say in a letter. I certainly don't think we  
3 could endorse Supplement 21. I don't think we could  
4 endorse the interim manual Chapter 25.17. I kind of  
5 relate this kind of back the way we do license  
6 renewals when we have Subcommittees and stuff, we  
7 typically don't write a letter unless we have a  
8 concern, an overriding concern with the process that  
9 we don't think is going to get dealt with or we're  
10 not going to have another opportunity that we write a  
11 letter.

12           But I'm not sure that we need to write a  
13 letter, at this point. I'm not sure what it would  
14 really add to the process and stuff here. So that  
15 would be my recommendation. But I do think it's good  
16 to be engaged at this point and get the briefing that  
17 we did today.

18           CHAIR RAY: Okay. Charlie?

19           MEMBER BROWN: I agree. Although I hate  
20 to say this, because I have to write a letter this  
21 week and you are going to get out of it, and that is  
22 just hammering me something awful here. But to make  
23 your life easier, I'm just teasing you from that  
24 standpoint. But I agree, I don't see that we have

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1 got enough meat to do that right now and I'm not sure  
2 what would come out of it.

3 On the positive side, I think the staff  
4 and TVA, I think, were -- whenever they decided to go  
5 do this and bringing the plant out of a deferred  
6 status and non-lay-up status for such a long period  
7 of time, had to establish a framework to get started.

8 We can argue whether the framework is a good  
9 framework, whether it's complete or whatever, I don't  
10 think it's a bad framework. It touches a number of  
11 elements or most of the elements of what you need to  
12 think about, because it's not a brand new design.  
13 It's something that is there.

14 So you take something you've got and you  
15 go -- and you take Supplement 21, you take what is  
16 going on, you take the correct action programs, you  
17 take generic letters, you look at the inspection  
18 reports, you see what the condition of the plant is,  
19 which we don't have a handle on right now, you've got  
20 all these -- well, at least not based on the  
21 presentations, and that, to me, is where they started  
22 and now we are in the process of doing that.

23 So I don't -- you know, I think it was --  
24 you've got to start somewhere and you've got to pick

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1 a way to go do it, whether we have to, you know, kind  
2 of put the stamp on it or not. I don't see why we  
3 need to do that.

4 I would like to see another Subcommittee  
5 meeting, you know, I don't -- I think a year away is  
6 too far, that really tries to address what is the  
7 status of the plant. What are the aging mechanisms  
8 we have to do with -- deal with? And what are the  
9 results of some of these looking at these corrective  
10 action programs and how they were applied to Watts  
11 Bar Unit 2? Because we didn't -- while you say you  
12 are going to do that, we don't have any -- there is  
13 nothing, no results, although you may have some, we  
14 just didn't go through those.

15 And I don't -- I'll let Jack review all  
16 the inspection reports. He is good at that. I did  
17 take a look, by the way, I tried to go back and pull  
18 out a couple of the last NUREGs, the previous  
19 supplements, and the only ones in the database were  
20 18 and 19 and they were patently uninformative  
21 relative to most things, so -- once I got them opened  
22 anyway.

23 So again, I'll finish up. I had my one  
24 issue, no letter, I'm happy. Well, I don't know.

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1 I'm thinking.

2 CHAIR RAY: Well, I guess on the one hand  
3 I would share Jack's point that it seems, at least to  
4 me personally, that the things being done are the  
5 right things and the applicant seems to be doing a  
6 right and responsible thorough job. If I was going  
7 to write a letter though, it would be one that  
8 neither the staff nor the applicant, I think, would  
9 like because it would, coming back to what John said,  
10 say it looks to me like the NRC is on the critical  
11 path of this project or ought to be, because the  
12 applicant is going forward and the NRC is still  
13 thinking about it.

14 Now, that's unfair perhaps, probably  
15 unfair. And that's where we need to get more  
16 information. But that would be the conclusion I  
17 would draw, at this point, in time is can the NRC  
18 stop this train before it goes further than it should  
19 before they have done what they need to do?

20 And notwithstanding all the scheduling  
21 tools and so on that may be in play here, I'm just  
22 very skeptical that looking at the critical path, as  
23 I see it here from the applicant, that the NRC is  
24 going to keep up with the pace of this thing. And so

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1 that would be what I would most value in any further  
2 discussions that we have is some better assurance  
3 that, as regulator, we are able to do the things that  
4 need to be done to keep pace with what is going on at  
5 the plant, given the unique circumstances that exist.

6 Okay. With that, I'll invite any other  
7 comments anyone wants to make before we adjourn.

8 MEMBER ABDEL-KHALIK: Just a comment.

9 MEMBER BONACA: I would like to know, you  
10 know, what they would think about having the  
11 Subcommittee meeting in a shorter period of time say  
12 two months from now to give us some more detail on  
13 that Supplement 21.

14 CHAIR RAY: Okay.

15 MEMBER MAYNARD: What about the July  
16 meeting?

17 CHAIR RAY: Well, let's not limit it to  
18 Supplement 21. Can we include the construction  
19 inspection?

20 MEMBER STETKAR: Yes. I mean, that's, to  
21 me, more important. I guess I was a bit surprised to  
22 hear that the level of effort in terms of inspections  
23 in 2009 doesn't seem to be very intense or panic-  
24 driven, if you will.

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1 CHAIR RAY: Yes, for some reason that's  
2 the impression that comes across.

3 MEMBER STETKAR: Yes, because there seems  
4 to be a whole bunch of stuff that you could and  
5 should do. For example, there is a lot of concrete  
6 out there. There is a lot of rebar out. And I've  
7 got to change that. I mean, they are not change --  
8 you know, they are doing stuff on the water cooling  
9 systems, they're doing stuff on the turbine  
10 generator. They are doing stuff on -- you know, they  
11 are doing active work changing things, but there is a  
12 lot of passive structural stuff out there that, first  
13 of all, you could get it out of the way.

14 Second of all, it could be a show  
15 stopper.

16 CHAIR RAY: Yeah, well, again, we may be  
17 unfair in --

18 MEMBER STETKAR: Maybe we're not being  
19 fair, but the --

20 CHAIR RAY: I believe that you've got  
21 some feedback here, the question was -- where is  
22 Rags, there he is, as to your willingness to pick up  
23 this story fairly soon and continue it, given what  
24 you have heard here today.

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1 MR. RAGHAVAN: Thank you, sir.

2 CHAIR RAY: You are?

3 MR. RAGHAVAN: Yes. We're going to do a  
4 couple of things. No. 1, is I think ACRS show the  
5 Members plan to visit the site in July.

6 MEMBER SIEBER: Right.

7 MR. RAGHAVAN: So that will give you a  
8 better understanding of the condition and the status  
9 of the plant. No. 2, is a couple months from that  
10 date, we would like to come back to the ACRS  
11 Subcommittee again to make a presentation which will  
12 take all the information that we gathered here and  
13 bring it to you. That's also an appropriate time  
14 because, at that particular time, we would have done  
15 a lot more engineering work than what we have done.

16 Even though I would like to reiterate  
17 that the SSER 21 took us a lot of time for us to do.

18 We did lots of -- lots and lots of work. We did  
19 about a review of 20 supplements, 1,100 generic  
20 documents, 29 corrective action programs, lots of  
21 meetings with the applicant and we did a lot of work  
22 on this one.

23 The purpose of this SSER 21 is to really  
24 implement the SRM. If the SRM come and just say the

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1 licensee or the applicant had to do new requirements,  
2 we would not be here. We would have been doing  
3 something else. The main reason that all the SSER 21  
4 is to exactly implement the SRM's requirement, which  
5 said that you need to establish -- we took the SRM to  
6 say the staff needs to establish what's the baseline.

7 What has been previously reviewed and approved?

8 And we will -- that's what we were trying  
9 to document. And we looked at the corrective action  
10 program. We looked at the previous SSER. We looked  
11 at the previous generic letters and so on. Do we  
12 have other issues? Yes, we have other issues that we  
13 need to proceed. And the applicant has to make a few  
14 more submittals. The supplement to the FSAR and  
15 Amendment No. 93 is in-house right now and that's  
16 what -- 92, I'm sorry. The 92 and the technical  
17 specifications, they are all in right now and we are  
18 working towards that.

19 There are some other programs that TVA  
20 has to make submittal, which is -- which goes into  
21 what you mentioned with regard to the aging phenomena  
22 and those types of things that we were looking at it.

23 The bottom line is we sincerely  
24 appreciate the time that the ACRS gave us. We really

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1 understand what your concerns are. And we were  
2 groping as to what that letter needs to be. And what  
3 we wanted to get was the staff -- you know, we wanted  
4 some sort of an understanding from ACRS okay, you  
5 have a good approach. Go and do good. That's what  
6 we were hoping to get, but I do understand the  
7 reservation that you have in coming up with a letter.

8 The letter is not important to us. What  
9 is very important to us is the comment that you gave  
10 us so that we will be able to address in the next  
11 Subcommittee meeting not take as much time as we did  
12 today. That's what we are hoping to do and to that  
13 extent, I think, we are very satisfied with the  
14 meeting.

15 CHAIR RAY: Thank you.

16 MR. GIITTER: Just to add to what Rag  
17 said, too, we wanted to make sure that you didn't see  
18 any fatal flaws in our approach. There was no  
19 expectation that you concur on Supplement 21. And I  
20 would be the first person to admit there is no meat  
21 in that. It's just a listing. And of course, it was  
22 given to you for information only. There was no  
23 intent for you to concur with it.

24 But it doesn't really, I don't think,

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1 effectively demonstrate all the work that went into  
2 it. There was a lot of work, as Rags indicated. We  
3 do appreciate the opportunity to come and talk to  
4 you. We believe this is a good starting point. We  
5 do want to maintain a dialogue. And as we just  
6 talked about, we would propose to come back in the  
7 fall and give you an update.

8 CHAIR RAY: Okay. Well, if you need  
9 somebody to say you need to spin up this effort and  
10 mobilize quickly, why we might consider that.  
11 Otherwise, unless we get turned around at the Full  
12 Committee, you can plan on there not being a need for  
13 a Full Committee briefing in May.

14 MR. GIITTER: Okay. Anything else?

15 MEMBER SIEBER: Yeah, I guess I would add  
16 one thing. When we go to Watts Bar in July, I would  
17 appreciate spending the bulk of our time on the Unit  
18 2 construction chart as opposed to walking around the  
19 accessible portion of an operating plant.

20 CHAIR RAY: Yes.

21 MEMBER SIEBER: Because I think this  
22 project is very important and I do think we have  
23 value to add to it, if we can, but we have to  
24 understand exactly what is going on.

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1 CHAIR RAY: Sure.

2 MEMBER STETKAR: The same thing. Also  
3 message to Region II, I think it would be really good  
4 when we come to talk with you.

5 MEMBER SIEBER: The same thing.

6 MEMBER STETKAR: We will focus on mostly  
7 on not necessarily the reactor oversight process and  
8 the other plants in the region.

9 MR. HAAG: The results of our  
10 inspections, yeah, or what specific plans we have.

11 MEMBER STETKAR: Because it's the big  
12 plan.

13 MEMBER SIEBER: Your plans and your  
14 resources, your ability to keep up with the schedule,  
15 all of those kinds of things.

16 CHAIR RAY: Okay. With that, we will  
17 terminate the record and terminate the phone call.  
18 Thank you.

19 MEMBER SIEBER: Thank you very much.  
20 Appreciate it.

21 (Whereupon, the meeting was concluded at  
22 4:42 p.m.)

23

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