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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

MEETING OF THE SUBCOMMITTEE ON PLANT OPERATIONS

AND FIRE PROTECTION

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Information Briefing for
Region II Construction Activities and
Proposed Operating License
Watts Barr Nuclear Plant, Unit 2

Docket No. 50-391

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Conference Room
Sam Nunn Federal Center
61 Forsyth Street, SW
Atlanta, Georgia

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Thursday, July 30, 2009

8:00 a.m.

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1 Subcommittee Members Present:

2 John D. Sieber, Chairman

3 John W. Stetkar

4 Otto Maynard

5 Said Abdel-Khalik

6 Charles H. Brown, Jr.

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Adjourn

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P R O C E E D I N G S

1
2 CHAIR SIEBER: I'll call the meeting to
3 order now.

4 This is a meeting of the Advisory
5 Committee on Reactor Safeguards Subcommittee on Plant
6 Operations and Fire Protection.

7 My name is Jack Sieber, I'm Chairman of
8 the Subcommittee. Other members in attendance are
9 Charles Brown, who is in the back; Otto Maynard, who
10 is at the head of the table; Harold B. Ray (sic); and
11 John Stetkar.

12 Maitri Banerjee is the --

13 MEMBER BROWN: Jack.

14 CHAIR SIEBER: Oh, there you are, Said
15 Abdel-Khalik. Maitri Banerjee is the designated
16 federal official for this meeting.

17 The purpose of the meeting today is to
18 discuss regional inspection and operational
19 activities, with special emphasis on Watts Bar Unit 2
20 construction and support of operating license review
21 by the staff.

22 The ACRS members visited Watts Bar earlier
23 this week and met with the NRC resident inspectors.
24 Our purpose in making this visit is to -- is for the
25 members to get an overall view of the material

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1 condition of Unit 2, the state of construction, the
2 state of preservation, and the licensee's plan going
3 forward at that period of time.

4 So we did a thorough walk-through
5 inspection of plant and then later met with the
6 licensee to go through some of the details. So we did
7 get a very good briefing at the plant site and I think
8 we all have an appreciation at this point as to what
9 the condition of the plant is, roughly how much work
10 there is to complete construction. And also the other
11 part, which we had not looked at in great detail so
12 far, is the licensing aspect of the plant, which is
13 equally or probably more important than actually
14 building it.

15 The Subcommittee had a meeting on March 31
16 of this year on Watts Bar, during which we heard from
17 the Region II staff related to how they were setting
18 up the inspection program for Watts Bar Unit 2
19 construction and to support the operating license
20 review by NRR.

21 We are interested to hear about your
22 understanding of the material conditions of Watts Bar
23 2 and the quality and safety aspects of TVA's
24 construction activities. And, as always, we'd like to
25 hear about your new inspection and operating plant

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1 experiences. Our objective is to gather information,
2 analyze relevant issues and facts, formulate proposed
3 positions and future actions as appropriate for
4 deliberation by the full ACRS Committee.

5 This meeting is open to the public. The
6 rules for participation in today's meeting have been
7 announced as part of the notice of this meeting
8 previously published in the Federal Register on July
9 2, 2009. We have a telephone bridge line for the
10 public to hear the deliberations.

11 Is the bridge line operational at this
12 point?

13 MR. AYRES: Yes.

14 CHAIR SIEBER: To minimize disturbances at
15 this meeting, the line will be kept muted from this
16 end until the last 15 minutes of the meeting, to
17 provide an opportunity for the members of the public
18 joining us through the bridge line who would like to
19 make a statement or provide comments.

20 Is there anybody on the bridge line at
21 this point?

22 MR. AYRES: Not yet.

23 CHAIR SIEBER: Okay, thank you.

24 A transcript of this meeting is being kept
25 and will be made available, as stated in the Federal

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1 Register notice. It is requested that speakers first
2 identify themselves and speak with sufficient clarity
3 and volume so that they can be readily heard. And
4 since we do have a transcript of this meeting and all
5 ACRS meetings, it would be good if you get to a
6 microphone when you speak so the court reporter has an
7 opportunity to clearly hear and transcribe what's
8 being said.

9 With that as an introduction, I would like
10 to first thank you all for the hospitality and
11 cooperation that you've given us and on your reports
12 that you've given us either in writing through the
13 inspection process and also at our meetings in White
14 Flint. All that is truly appreciated.

15 So with this introduction, I'd like to
16 introduce and ask the Regional Administrator, Louis
17 Reyes, to introduce the staff to us and begin the
18 presentations. Thank you, sir.

19 MR. REYES: I'll stand so that maybe it's
20 easier for you to listen to me.

21 I want to welcome the Subcommittee today
22 here. We think we have a presentation that will
23 address your questions that we have here. If we
24 didn't hit the mark, feel free to ask us some
25 questions.

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1 We do want to first get some
2 administrative matters out of the way, so I'll let
3 David do that and then we'll work our way through the
4 presentation.

5 CHAIR SIEBER: Thank you.

6 MR. AYRES: Okay, first off, a safety
7 briefly like we have to have on every meeting. Let me
8 make sure I'm near the microphone.

9 The evacuation route in the unlikely event
10 that the building is evacuated for a fire alarm or
11 whatever, exit the back door here, take a right and
12 the stairwell is just at the end of this hall. Go
13 down 23 flights to the lobby. If there's anybody that
14 can't make the 23 flights, you may stand by in the
15 stairwell for assistance to get out of the building.
16 Again, that's very unlikely, once or twice a year is
17 all we ever have to evacuate.

18 Visitors must be escorted anywhere outside
19 of this room and the adjacent hallway here. Once you
20 get outside the areas where you have to use an NRC key
21 card, you must be escorted if you don't have an NRC
22 badge.

23 The restrooms -- there is a ladies room
24 out here in the public area, so that's good for the
25 ladies. The men, we have to go up the hallway through

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1 the NRC area, so you have to be escorted to the
2 bathroom door to get there if you don't have an NRC
3 badge.

4 Lunch options, we do have a good cafeteria
5 downstairs and there are other restaurants just about
6 in every direction but the cafeteria is a good one and
7 it's quick and I think today is barbecue day, so
8 that'll be good.

9 CHAIR SIEBER: Are our badges keyed into
10 your security system?

11 MR. AYRES: Probably not.

12 MR. REYES: We can activate them.

13 CHAIR SIEBER: Sometimes they do and
14 sometimes they don't.

15 MEMBER STETKAR: Will we need that to go
16 to the bathroom?

17 MR. AYRES: To get through the door, yes.

18 Teleconference, like was mentioned before,
19 there is a bridge set up with several lines so people
20 can call in. We ask the people that call into the
21 line to mute themselves. Our phone is turned down as
22 low as it can go to prevent the unwanted background
23 noise coming from the phone, but they will be given an
24 opportunity to speak at the end of the meeting.

25 And then we do have a sign-in sheet for

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1 NRC staff and for visitors over here as well as copies
2 of the slides and the agenda. Here's the agenda,
3 we're going to go through organization and staffing,
4 Loren Plisco will start that and then we'll continue
5 on with the Watts Bar and other construction items
6 this afternoon.

7 So with that, I'll turn it back over to
8 Luis.

9 MR. REYES: Thanks, David.

10 The Center for Construction Inspection was
11 established in Region II in 2006 and that was a
12 decision by the Commission to have a center for
13 excellence to follow through on all the construction
14 nationwide, whether it was in fuel cycle at fuel
15 facilities or in the reactor side of the house.

16 So we started the center in 2006. We are
17 fully staffed, we have a number of employees, about 50
18 percent of them were already Region II employees with
19 a lot of field experience, about 12 percent of them
20 came from other NRC offices and the rest came from
21 outside the NRC organization. We continue to get
22 resources, in our fiscal year 2010 that is just
23 upcoming, we have additional resources. You're going
24 to find out that the resources for the Watts Bar
25 project are abundant. We have been getting a lot of

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1 support.

2 And what I would like to do is I would
3 like to turn over the meeting to Loren Plisco, who is
4 going to walk you through that part of the
5 organization and then we'll get into the substance of
6 the discussion.

7 Thank you.

8 CHAIR SIEBER: Thank you.

9 MR. PLISCO: Good morning. My name is
10 Loren Plisco, I'm the Deputy Regional Administrator
11 for Construction here in Region II. I'm just going to
12 take a couple of minutes to go through the Region II
13 organization and show you how our Watts Bar 2
14 resources are enrolled and responsibilities set up in
15 Region II, and a little bit of background on the
16 approach to be taken to the oversight for Watts Bar 2
17 and why it's set up the way it is.

18 I know this is difficult to read up here
19 on the chart, but you have a copy in your handout.
20 But the point I want to make, you don't really need to
21 read all the names. Region II, we have a standard
22 regional operating facility oversight organization. I
23 know you've been to regions before and seen a similar
24 organization. There are a couple of things that are
25 different in Region II that I wanted to highlight.

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1 One is we have two national programs in
2 Region II. One has to do with fuel facility
3 oversight, all of the fuel cycle facilities in the
4 nation, the oversight is provided at Region II.
5 That's one division, the Division of Fuel Facilities
6 Inspection and they provide that oversight nationwide.

7 And then the construction inspection
8 program. As Luis mentioned, the Commission decided to
9 set that up here in Region II in October 2006, and we
10 provide the oversight for all construction, fuel cycle
11 facilities and what we call the new reactor facilities
12 and for Watts Bar, in our term, an old reactor --
13 old/new reactor facilities. We conduct all of those
14 out of the Center for Construction Inspection and
15 that's this organization here off to the right hand.
16 I'm going to go through that in more detail.

17 The other point I wanted to make was the
18 decision was made, the Regional Administrator at the
19 time, Bill Travers, and Luis who was EEO, decided when
20 we set this organization up in Region II, we wanted to
21 make sure there was not a distraction of the oversight
22 of the operating facilities. That was really job one.

23 So we have a unique arrangement where we
24 have two deputy regional administrators here in Region
25 II, one for operations, that's Victor Mccree back

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1 here, and then myself for the construction activities.

2 In that way, we separate the activities in operation
3 oversight from construction side, so there really
4 isn't a distraction. We call it the shiny red ball,
5 the construction activities. There's a lot of
6 interest and a lot of things going on in the media and
7 we wanted to try to minimize that distraction in the
8 oversight of the operation side.

9 This is now a chart you can read, this is
10 the section that was off on the right. Center for
11 Construction Inspection. We set the organization up
12 very similar to how we have the oversight set up for
13 operating reactors. We have one division, the
14 Division of Construction Inspection, and that division
15 provides the specialist inspectors and what we call
16 the region-based inspectors that will travel out of
17 the region to the site for construction inspections.

18 And then there is the Division of
19 Construction Projects. That division manages the
20 inspection program at the site, provides the project
21 management of the inspection program, and the resident
22 inspectors that are assigned to that construction
23 project report through this division.

24 What you're going to hear today is this
25 morning, Bob Haag, in what's called Projects Branch 3,

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1 they have the responsibility for Watts Bar Unit 2,
2 he's going to provide a discussion this morning of our
3 oversight activities for Watts Bar.

4 And then later today, Mark Lesser, who is
5 on the Division of Construction Inspection side, is
6 going to talk about our inspection activities at the
7 other construction sites, the fuel cycle facilities,
8 and our preparations for new reactors and what we're
9 doing there. He'll talk about that later today.

10 But we also have fuel cycle inspections at
11 construction sites, LES and MOX are the two fuel cycle
12 facilities we have oversight for and this branch,
13 Branch 1, provides the oversight for that.

14 And then David, as you met, who helped
15 coordinate this meeting, and Alan Blamey in Branches 2
16 and 4, they're the start of our oversight for new
17 reactors. They're developing the infrastructure and
18 putting the procedures together and developing staff
19 and working on setting up our first review offices for
20 new reactor construction. So they're working on that
21 and we'll talk about some more of that later.

22 This is just an overview of our primary
23 functions for the Center for Construction Inspection.

24 As I mentioned, we're the agency center of excellence
25 for all construction inspection activities.

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1 We manage the construction program and
2 that is a challenge for us because we're really -- as
3 I mentioned, we're doing fuel cycle facilities, which
4 we work with NMSS. For Watts Bar 2, we work with NRR
5 and for new reactors we work with NRO. So we work
6 with three different program offices to conduct the
7 oversight and that provides some challenges. As you
8 probably know, the regulatory requirements are
9 different, the infrastructure is different in how they
10 do business. It is a challenge to our inspectors, but
11 we're working through that. And in some cases, we're
12 trying to bring some of the things that are a little
13 different closer together to help the inspectors.

14 As I mentioned, we're developing the
15 infrastructure for the new reactor inspection program.

16 We're already conducting field work at the fuel cycle
17 facilities and Watts Bar Unit 2, and we have an
18 assessment arm in our oversight process to look at the
19 performance of the licensee during construction. We
20 have a process to do that.

21 And in the end, what we're doing is
22 providing the information so the agency can make the
23 regulatory decisions for these facilities.

24 Specifically to Watts Bar Unit 2, we have
25 10 FTE that we've been provided by the Office of

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1 Nuclear Reactor Regulation to provide that oversight.

2 And you'll hear Bob discuss later how we've used that
3 FTE, but right now, I think one of your questions was
4 whether that's sufficient, and it is. And we think
5 it's sufficient really in the next couple of years.
6 We tried to look ahead and project what our workload
7 is and right now we think it's sufficient to do the
8 work at Watts Bar 2.

9 There's always a challenge at the end game
10 on any of these projects, when you get into pre-op
11 startup testing. There may be a spike that might
12 require more than that, but if you look on average
13 through the next couple of years, we think 10 is
14 sufficient.

15 MEMBER BROWN: Is that consistent with
16 past new construction?

17 MR. PLISCO: It is, and actually the
18 number came from us working with NRR. We went back
19 and looked historically at what we needed for Watts
20 Bar Unit 1 and some of the previous, and that is in
21 the ballpark of what we needed then.

22 MEMBER BROWN: Okay.

23 MR. PLISCO: The caveat I always give is
24 that's assuming everything goes as normal and there
25 aren't major problems or there aren't a lot of

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1 allegations and those kind of things that
2 significantly add to the workload. But if it goes as
3 we expect and as some of the projects historically
4 have gone --

5 MEMBER MAYNARD: That's the 10 that would
6 be assigned directly to this. You still have access
7 to other inspectors and other people as needed.

8 MR. PLISCO: Yes and no. The 10 aren't
9 directly assigned, all 10 aren't directly assigned to
10 Watts Bar. And Bob will go through some of that.

11 MEMBER MAYNARD: That's the equivalent of
12 what you have budgeted for.

13 MR. PLISCO: Yes. We're planning to use
14 10 FTE, but that doesn't mean 10 people.

15 MEMBER MAYNARD: Okay.

16 MR. PLISCO: And just as an overview, I
17 think you met the resident inspectors at the site.

18 MEMBER MAYNARD: Yes, we did.

19 MR. PLISCO: We have three resident
20 inspectors.

21 MEMBER MAYNARD: We met two of them.

22 MR. PLISCO: You met two of them? We have
23 three.

24 CHAIR SIEBER: We did meet three.

25 MEMBER MAYNARD: We met the operating

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1 inspectors as well as the construction inspectors.

2 MR. PLISCO: Yeah, so three of the 10 are
3 the resident inspectors and Bob has two full time
4 staff that are here in the regional office providing
5 support to him. And then the rest we have matrixed.
6 And part of that is in the Division of Construction
7 Inspection, the division I mentioned that has the
8 region base and it's matrixed so when they need
9 certain disciplines, they'll go out and support that.

10 And we're providing the inspection expertise for
11 construction activities, but there are still
12 activities that more align with what we do on the
13 operating side.

14 So if there's work for operator licensing
15 or security or health physics, in those areas, those
16 really come out of our operating reactor side, that
17 expertise is on that side of the house. So that's why
18 I said there's not five people, but the work is
19 matrixed out, is how we have it set up.

20 And as you saw, we set up an independent
21 resident office at Watts Bar and to separate the
22 operating side from the construction side. And that
23 was really one of the -- I think the second field
24 construction resident office we've set up in a long
25 time. We set up one at the mixed oxide fuel

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1 aggregation facility.

2 CHAIR SIEBER: But that's typical of the
3 way the NRC operated 20 years ago --

4 MR. PLISCO: Yes, we had a resident
5 office.

6 CHAIR SIEBER: -- had an operating unit
7 and a unit under construction, you had that dual
8 relationship and support in roughly the same manner.

9 MR. PLISCO: Yes. But I would say at that
10 time because it was happening all at the same time, it
11 was typically in the same physical place.

12 CHAIR SIEBER: That's right.

13 MR. PLISCO: And we just put in new people
14 with that expertise.

15 CHAIR SIEBER: Right.

16 MR. PLISCO: In this case, it's a physical
17 -- we physically separated those offices. Again, to
18 make sure there's no distraction for the operating
19 side.

20 MEMBER BROWN: How many people are really
21 on the site? We met what I guess -- I need the
22 terminology -- you have resident inspectors, we met
23 three, there might be four.

24 MR. HAAG: There's five resident
25 inspectors assigned to the site, two for operations

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1 and three for Unit 2 construction activities.

2 MEMBER BROWN: And everything else is
3 brought in and out as necessary. And there are five
4 out of the 10 that are budgeted. Are they part of the
5 10 budgeted?

6 MR. PLISCO: The operating residents
7 aren't in that 10, that's out of a separate budget.
8 The 10 is just for construction.

9 MEMBER BROWN: Okay.

10 MR. PLISCO: And as I said, the five that
11 are matrixed, there will be people come in a week or
12 two at a time for specific areas.

13 MEMBER STETKAR: I forgot to ask when we
14 were down there, but since you mentioned you have two
15 physically separate offices and since there is some
16 amount of cross talk between the construction side of
17 the house and the operating side of the house, how
18 often do your inspectors caucus? I mean, do you have
19 a formal daily meeting or --

20 MR. PLISCO: Bob is going to talk about
21 that when he comes up.

22 MEMBER STETKAR: Okay, I'll wait for Bob.

23 MR. PLISCO: Because he's going to get
24 into specifics of what's going on at the site with the
25 oversight.

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1 You know, they're the only --

2 MEMBER STETKAR: I was just curious.

3 MR. HAAG: You will recall during the
4 March 31 meeting that a similar question was raised
5 and my answer was that they talk frequently, several
6 of them carpool together. So they're talking. You
7 know, there's a 45 minute trip one way, you know, to
8 get from the site --

9 CHAIR SIEBER: But there's no formal -- I
10 mean you don't have a formal sit-down morning meeting
11 type of thing?

12 MR. HAAG: No.

13 MR. PLISCO: No.

14 MEMBER MAYNARD: I will say at our
15 meeting, we had two of the operating residents and two
16 of the construction residents. It was obvious that
17 they had talked and shared their information about
18 what was going on in each other's area.

19 MR. PLISCO: And the other thing that I
20 would say that is unique at Watts Bar that may not be
21 the same with new reactors is because of where we are
22 in our recruiting and hiring, the residents at the
23 construction site have been residents or have been
24 inspectors on the operating side, so they have that
25 knowledge and experience and they can help out.

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1 I think when we get into new reactor
2 construction further on, that probably is not going to
3 be the case. Some of the staff may not have that
4 operating experience. They may be a civil engineering
5 inspector and just focus on that, may not have --

6 MEMBER MAYNARD: Watts Bar is a little
7 unique compared to the new reactors being built in
8 that you have Unit 1 and Unit 2 and they have some
9 shared equipment. With the new ones that are going to
10 be built, they may be going on a site that has
11 existing plant, but they're not going to have the
12 shared systems like Watts Bar has.

13 MR. PLISCO: Yes, in many cases, there's
14 good physical separation between them.

15 CHAIR SIEBER: That's right.

16 MEMBER ABDEL-KHALIK: Is the expectation
17 that the three resident inspectors assigned to Unit 2
18 will remain in their position for the entire duration
19 of the construction?

20 MR. PLISCO: Our hope is that they will,
21 but, you know, if there are promotion opportunities
22 for some of them or other things come along, I mean
23 we're used to that in dealing with resident
24 inspectors, people going in and out.

25 MEMBER ABDEL-KHALIK: There's a lot of

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1 knowledge that these people will accumulate with time
2 and you don't want to lose that and start over.

3 MR. PLISCO: Yes. I mean our hope is the
4 people gaining that experience are going to be part of
5 our core and move on once we get into new reactor
6 construction and become our basic experience and would
7 be willing to provide that. Whether that happens or
8 not, I mean we follow the merit selection process, you
9 know, when we make selections and right now there's
10 still uncertainty on how many of those openings are
11 going to be there in the future as far as new reactor
12 construction. But we do see that as a training
13 ground, and not just for the residents. We're sending
14 up a lot of staff to Watts Bar, as far as our
15 qualification process, to get experience on a
16 construction site. It is going to be a training
17 ground.

18 MEMBER BROWN: So there's no expected two
19 year commitment. They could show up and six months
20 later a merit thing pops up and bang, they're gone, or
21 a year.

22 MR. PLISCO: Yes. Because of the merit
23 process, if they have a promotion opportunity and they
24 apply and they're the best candidate, they will be
25 gone.

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1 There are -- the agency has policies on if
2 that doesn't happen how long we want them to stay. We
3 pay for relocation costs and things like that. There
4 are a number of things in place in policies to help
5 them decide to stay, you know, if some of these
6 promotion opportunities don't come along.

7 But depending on how the job market is and
8 what opportunities are there, we don't know. But we
9 deal with that every day in the operating units, so
10 that's just part of doing business and having a remote
11 staff. That will happen and we try to plan, have
12 contingencies in place, have people that we're
13 training in the background to be ready to fill future
14 positions. That's part of our management process, to
15 get other people ready to fill those slots.

16 But we are fortunate enough in this case -
17 - you met Bill Bearden, Bill was our construction
18 senior resident at Browns Ferry, so he just moved up.

19 So we were very fortunate to keep that experience and
20 that's the ideal case right there, to continue to have
21 that experience. But in the future, it's really
22 uncertain, but we're trying to train as many people as
23 we can to have a number of people ready for those
24 positions, depending on what happens.

25 I wanted to briefly provide a little

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1 background on Watts Bar, to give you a sense of really
2 context of how we got to where we are, how we're
3 providing oversight at Watts Bar.

4 Watts Bar was a challenge, we didn't have
5 a lot of lead time as far as knowing that this was
6 coming onto our plate. When TVA finally made the
7 decision, as you know and you saw on your tour, it was
8 partially constructed and we inspected it during
9 construction in the '70s and '80s and completed a lot
10 of inspection under what was called Inspection Manual
11 Chapter 2512, which was the old construction program.

12 Once we heard about this going on, we
13 pulled out 2512, which really wasn't active any more.

14 It was very much out of date, it had been archived,
15 all the procedures related to it had been archived.
16 If you go back and look at them, they're out of date.

17 They have references to programs we don't have any
18 more, they have references to documents that aren't
19 the right reference any more, and those kind of
20 things.

21 We made a decision, we worked with NRR,
22 because of the timing and what was going on -- and
23 I'll talk about how we decided to solve this on the
24 next slide -- but that was a practical problem we were
25 going to have to deal with. We had been working 15

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1 years on the new reactor program but it wasn't done
2 yet, it wasn't ready. And it didn't really apply
3 directly because this is Part 50 and the program was
4 built for Part 52.

5 When we saw the time line of when the work
6 was going to be happening, we really didn't have
7 enough time to update 2512, because that has many,
8 many procedures and the new reactor program wasn't
9 ready and it wasn't the same as Browns Ferry. Some
10 people said well, why don't you do what you did at
11 Browns Ferry, but Browns Ferry had a license and Watts
12 Bar 2 did not and it's a lot different scenario from
13 Browns Ferry 1.

14 So we had to come up with a unique way to
15 handle the problem. So what we decided, working with
16 NRR, we decided to develop a stand-alone Inspection
17 Manual Chapter, that's 2517. And what that does is in
18 a blanket manner says we're going to use 2512 but
19 here's all these caveats, you know. It talks about
20 the caveats. Rather than rewriting everything, we
21 just wrote 2517 as the caveats.

22 We did go back and incorporate some
23 lessons learned that we had been using to develop the
24 new reactor program to put in 2517 and in how we do
25 business at Watts Bar, so we have incorporated some of

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1 the lessons learned that we were going to use with
2 some of the reactors, into how we're going to do Watts
3 Bar. And Bob is going to talk about a couple of
4 examples of those, like we did a readiness inspection
5 at Watts Bar as they were getting ready to start
6 construction, and that was one of the lessons from the
7 '70s.

8 And as I said, we decided we're going to
9 go ahead and use the 2512 inspection procedures mainly
10 because many of them had already been completed and it
11 would really be too difficult to develop new
12 procedures in a new program and then match up what was
13 done and what we needed to do. So we used as a
14 template the old program and then we went through a
15 process, and Bob is going to talk about this, of how
16 we decide what's already done, we're going to take
17 that off of the table, and then what do we still need
18 to do to finish Watts Bar.

19 MEMBER BROWN: So you didn't integrate
20 your caveats into 2512 so that they were contiguous
21 with the--

22 MR. PLISCO: We didn't write them into
23 2512, we wrote them into 2517.

24 MEMBER BROWN: It's a separate manual,
25 separate chapter.

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1 MR. PLISCO: Yes.

2 MEMBER BROWN: So now you've got to carry
3 two chapters around and make sure you look in the
4 right place?

5 MR. PLISCO: It incorporates 2512.

6 MEMBER BROWN: Oh, so you translated the
7 words from 2512 into 2517 and put the caveats in
8 there?

9 MR. PLISCO: Yeah. It'll say -- and I
10 think Bob is going to talk about some of this. It
11 says use the procedures in 2512 with these caveats.
12 And we have a process to go through that Bob is going
13 to talk about. We look at each procedure, what was
14 done, what wasn't done, and what else are we going to
15 do if it's not complete, what other work needs to be
16 done. And we developed a process to make those
17 decisions.

18 And in the end, we will say 2512 is
19 complete, you know, with some documented caveats of
20 what we didn't do and why we didn't do it.

21 MEMBER BROWN: I don't think I asked the
22 question right.

23 You've got two chapters to look at.

24 MR. PLISCO: Right.

25 MEMBER BROWN: So you didn't take the

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1 caveats -- you didn't take the procedures that related
2 with a set of caveats, take the caveats together with
3 them so you've got one thing to look at. There's two
4 things to look at, there's 2512 and oh, I've got to
5 remember to look over here and make sure I integrate
6 the right caveats with the right -- obviously there's
7 a section that says that, supposedly. But if your
8 eyeballs are hopping back and forth, it's easier to
9 miss stuff, that's all.

10 MR. PLISCO: Yeah, you do have to look at
11 both.

12 MEMBER BROWN: I just wanted to understand
13 what you were doing.

14 MR. PLISCO: You do have to look at both.
15 The governing procedure is 2517.

16 MEMBER BROWN: I've got it.

17 MR. PLISCO: But the list of the
18 procedures we're going to conduct are in 2512, for
19 construction.

20 And when you go to 2513 and 2514, which
21 are the pre-op and startup programs, we're going to be
22 using those --

23 MEMBER BROWN: The reason I bring it up,
24 in the Naval nuclear program, at one time we used to
25 have the same thing. We'd have a set of procedures,

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1 we adopted them for something else, we had special
2 things. We found out that didn't work, people screwed
3 up, so we put them together. So that's why I asked
4 that.

5 MR. PLISCO: Yes. And ideally -- that's
6 why I was trying to make this point. Ideally it would
7 have been good just to write a whole new program.

8 MEMBER BROWN: I'm not talking about a
9 whole new one, I'm just saying take the caveats, stick
10 them with the old stuff so that people have them
11 together. That's what we did, we didn't rewrite it,
12 like you, we didn't have the time to go do that.

13 MR. PLISCO: When Bob talks about some of
14 the details, we can discuss that.

15 MEMBER BROWN: It's a process question,
16 that's all I was asking.

17 MR. PLISCO: It's not the ideal.

18 MEMBER BROWN: We had people making
19 mistakes and when we had people making mistakes, we
20 found that we had to change the process. The
21 referencing, going back and forth turned out to be --
22 in the field, down where the people were doing work --
23 it just got messed up. So we changed the process.

24 MEMBER MAYNARD: This is kind of unique,
25 this is kind of a one-of-a-kind thing.

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1 But this one is going to be applicable to
2 a number coming along probably, different situations.

3 MEMBER BROWN: Cut and paste.

4 MR. PLISCO: And Bob is going to talk
5 about really these last two bullets. Once we set the
6 infrastructure up, we had to go back and look at what
7 we did. What did we inspect in the past, what are we
8 going to take credit for and what are we not going to
9 take credit for, for completion of the program.

10 So we developed a process to look at the
11 acceptability of the past inspection work. We had to
12 go back into microfiche and pull out all the
13 inspection records that we had completed. And the
14 staff has gone through those to decide these
15 inspection procedures are the ones we're going to call
16 closed and we're going to take credit for this work.
17 For example, as you saw at the site, there's not a lot
18 more concrete inspections to do, that's mostly done.
19 So that's an example of one of the areas, there's not
20 going to be a lot more concrete inspection.

21 CHAIR SIEBER: What is the actual
22 condition of the records from the early stage of the
23 construction back in the -- I guess that was started
24 in the late '70s and through mid-'80s, up to '86? In
25 my experience, there is some variability from site to

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1 site as to the quality of the records. Could you give
2 us some qualitative assessment of the records that you
3 found for Watts Bar 2?

4 MR. REYES: That's one of the questions.

5 MR. HAAG: That was one of your questions
6 and I've got that addressed in my remarks.

7 CHAIR SIEBER: We'll wait to get to that
8 and then we'll address it. You do have it written
9 down.

10 MR. PLISCO: Yes, Bob is going to talk
11 about that, we had planned to cover that. And we had
12 difficulty ourselves going back and finding our own
13 records because, again, it's back in microfiche and we
14 had to go back. And Bob's staff had to go back and
15 search through the microfiche records and find all our
16 old inspection reports that document what we had done.

17 MR. REYES: And while Bob is getting here,
18 let me just enhance the discussion of the resident
19 inspector stay time. One of the lessons learned that
20 we learned from the '70s and '80s which we're
21 implementing for not only Watts Bar but the whole new
22 fleet is that we pulled back the resident inspector
23 staff, construction staff, too quickly after the unit
24 loaded fuel and went into operations. And there were
25 some issues that would come up that related to

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1 historical information and now the operations group
2 didn't have the benefit of that information.

3 So one of the institutional lessons
4 learned -- and it's in the planning and the budgeting
5 -- is the construction resident inspectors are going
6 to overlap the operations and they're going to stay
7 there and we're going to err on the side of keeping
8 them longer. And that intelligence has to be put into
9 the budget. And for the future, we have
10 institutionalized that process as a hard lesson
11 learned from the '70s and '80s.

12 And in fact, I think it points out the
13 benefit of what the Commission did, to have a
14 construction center of excellence because we have
15 captured all those lessons learned either personally
16 or through 1055 or through some document and we have
17 included that in our plan.

18 So your question is very good about
19 construction. We are enhancing that even further and
20 enlarging that stay time to overlap significantly with
21 operations.

22 CHAIR SIEBER: That was actually in
23 process at the end of the 1980s, it seems to me,
24 because sites I was familiar with, construction people
25 stayed through the first cycle.

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1 MR. REYES: Yes, we learned that the hard
2 way and now it's institutionized in the planning and
3 the budgeting and we start with that and it goes
4 throughout the process. But you'll also find out
5 from another lesson learned is that -- get up there.

6 MR. HAAG: I'm going to sit here.

7 MR. REYES: Oh, you're going to sit down.

8 MR. PLISCO: He's going to be here awhile.

9 MR. REYES: We just need to make sure she
10 can hear.

11 MR. HAAG: There's a mic over here.

12 MR. REYES: The other one is that you're
13 going to find out that we are applying many more
14 resources to this project than in the old process.
15 And that is another lesson learned about. And when
16 you asked this morning about the resources, we have
17 abundant resources and that's another lesson learned
18 that we had from the '70s and '80s. So we feel
19 comfortable with the budget resources and the
20 execution.

21 I'm going to shut up and let Bob start.

22 CHAIR SIEBER: Thank you very much, we
23 appreciate it.

24 MR. HAAG: Good morning, everyone. As
25 Loren mentioned, my name is Bob Haag, I'm the Branch

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1 Chief with oversight for Watts Bar Unit 2, my branch
2 is the Construction Projects Branch 3 and is
3 designated for that oversight activity.

4 Mr. Brown, let me just elaborate on your
5 question because I think it's pertinent to understand
6 our thinking behind how we addressed the
7 infrastructure and the guidance.

8 And yes, we are using both Manual
9 Chapters, 2517, which was recently written to give our
10 current way of thinking for Watts Bar Unit 2
11 construction inspections, and 2512, which is the
12 historical inspection guidance. And I would say
13 people who are within my branch certainly need to
14 understand both of those documents very well to make
15 sure we've incorporated and completed all required
16 inspections and we've followed the processes that
17 we've established.

18 For inspectors who are going out at the
19 site and looking at a specialized area -- looking at
20 welding, looking at cabling, things like that -- their
21 need is to understand what the inspection objectives
22 are. There are inspection procedures that lay that
23 out. So their primary focus is more, you know, geared
24 toward their individual responsibilities and I would
25 say they don't need to understand all of the

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1 implications. They do need to be familiar with it, we
2 have got that as part of our training process for
3 people who go to Watts Bar, that familiarization. But
4 the detailed day-to-day knowledge that they're
5 implementing, I would say they don't really have to
6 have that. Hopefully that provides a little bit of
7 insight.

8 MEMBER BROWN: Yes, thank you.

9 MR. HAAG: So during my presentation, I'm
10 going to go ahead and go over what we've been doing as
11 far as developing the oversight programs and processes
12 and try to give you some of the results as far as our
13 inspections to date.

14 Also, I received the questions that you
15 all had that you wished for us to address and I've
16 tried to incorporate those questions and our answers
17 into the presentation. If I don't, please ask me and
18 we'll try to either answer them now or certainly get
19 back to you.

20 Loren mentioned lessons learned and you'll
21 see that several times in my presentation as far as
22 the activities that we've undertaken, the positions
23 we've looked at and decided on are in part a lot due
24 to lessons learned in a look back both at Watts Bar
25 Unit 1, whether it was Browns Ferry or whether we

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1 looked back on construction problems in the '80s and
2 '70s, trying to incorporate those lessons learned into
3 what we're doing right now. So you'll see that quite
4 often.

5 Here's my branch. You can see there's six
6 inspectors, Loren mentioned five, there actually are
7 six. We have one we hired new, Kim Van Dorn, who is
8 working part time for us. So I say six --

9 MR. PLISCO: Five and a quarter.

10 (Laughter.)

11 MR. HAAG: Yeah.

12 This branch was established pretty much
13 when TVA told us that they were going to resume
14 construction for Watts Bar Unit 2. They sent in to
15 the agency a 120-day notification letter which is
16 required by the Commission policy statement. At that
17 time, we established the branch and started pulling
18 inspectors into the branch.

19 Pretty much from the beginning, as Luis
20 and Loren have mentioned, we recognized we wanted to
21 get the resident office developed early so we had Bill
22 Bearden selected and he went up there initially on his
23 own and then we backfilled or we filled the two
24 resident slots. Those positions were filled in March
25 of 2008. Bill went up there the end of 2007. So

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1 they've been established for awhile.

2 Again, my branch has the overall
3 responsibility for the Watts Bar Unit 2 construction
4 inspection program. Just to give you a little bit of
5 an idea as far as the background for the inspectors
6 who have primary responsibility for Watts Bar
7 inspection, two of the six people I referred to have
8 construction experience, actually were involved in
9 construction inspections during the '70s and the '80s,
10 mainly in the '80s. Two of the individuals were
11 involved with the Browns Ferry Unit 1 restart, Mr.
12 Bearden and the other resident inspector that you met,
13 Tommy Nazario, were both involved with those.

14 And then when we first started the project
15 back in 2007, we actually had two former senior
16 resident inspectors from Watts Bar Unit 1. So my
17 staff has both knowledge of the inspection program and
18 knowledge of Watts Bar site as far as what Watts Bar
19 Unit 1 looks like and their understanding of where
20 Watts Bar Unit 2 was.

21 As far as experience, I went back and
22 looked at the experience level. There's 144 years of
23 experience, industry experience, within those six
24 inspectors, 76 years of NRC experience. So I would
25 say there's quite a bit of knowledge of both

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1 construction, operations, industry experience outside
2 NRC, so I think we've got a very good, diversified
3 group that brings a lot to the table as far as
4 understanding how a plant should be operated, how a
5 plant should be built.

6 As Loren talked about, the 10 FTE, we
7 looked at that because that was the initial proposal
8 when the project was first started. We looked at it
9 as far as the time line, the 60 months that TVA is
10 planning for construction, and we broke it down into
11 different projects, different activities under the
12 construction, whether it would be the 2512
13 inspections, whether it would be CAPs and SPs --
14 corrective action programs and special programs -- as
15 a subset of inspections we'll have to do. So we broke
16 down each year our estimate of what we thought it
17 would take to inspect those different areas. And in
18 the end, we came up with an estimate and a belief that
19 10 FTEs will be sufficient throughout that 60-month
20 construction period.

21 Currently, our plans, as we've stated, my
22 branch will have the oversight for the construction
23 inspections under 2512 program. We'll have
24 responsibility for pre-op testing under 2513 program
25 and then we'll do the initial inspections under

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1 startup program which is 2514. And during that
2 process will be the transition where we'll go and the
3 operating resident staff will take over the
4 responsibilities for Unit 2, as they go up and then
5 continue into their power cycle.

6 And I say that we can do that -- I believe
7 we can do that successfully in part because of what I
8 told you as far as the experience level. We have
9 inspectors who have operations experience. All the
10 inspectors were previously qualified under our Manual
11 Chapter 1245, which is the process that we qualify
12 inspectors for operating plants. They were given
13 additional training as I mentioned earlier so they're
14 familiar with our expectations for Watts Bar Unit 2.

15 The last bullet right there, I mentioned
16 planning for an additional resident inspector. That's
17 my desire is that we would have an additional resident
18 inspector up there. Part of that is driven by, I
19 think you've seen, the work that they're doing there
20 and the challenge of being able to identify
21 construction activities that we want to inspect. And
22 the difficulty in assigning regional inspectors to go
23 up and do those when there are windows and sometimes
24 even the windows aren't accurate. So if you have
25 someone there on site as resident inspector, clearly

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1 they have the ability to adjust their schedule and
2 look at activities as they're going on. So our plan
3 would be -- again my proposal is to have a fourth
4 resident, three resident inspectors and a senior.

5 What that individual would also bring to
6 the table would be the background to transition to the
7 operating side. We did that for Browns Ferry Unit 1
8 and it worked out very well. Later on, as we were
9 inspecting construction for Browns Ferry Unit 1, we
10 brought another resident inspector in, again who had
11 experience in operations. They assisted in the
12 construction inspection but also were the primary
13 focus for transition to operations.

14 And that individual actually is on the
15 operating staff right now for the residents at Browns
16 Ferry. So that worked well for Browns Ferry and we're
17 pursuing that for Watts Bar Unit 2 and eventually for
18 the Watts Bar site.

19 MR. PLISCO: What we want to try to do --
20 and again, this is the interface between the operating
21 side and the construction side -- is when you talked
22 about rather than staying, our intent would be that an
23 operating inspector would stay once the plant becomes
24 operational. And we wanted to get them there early
25 enough to see some of the testing and learn the

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1 facility and get up to speed before it becomes
2 operational.

3 So what we're talking about internally,
4 and Bob was trying to say it nicely, he's working on a
5 plan to convince Luis when to post the vacancy for
6 this job. And what's likely to happen is the
7 operating side of our inspection oversight activities
8 -- and you're going to hear this later today from Len
9 Wert, it's his division -- they will do the selection
10 and that person will work for Bob until the plant
11 becomes operational and then work for the operating
12 resident staff and stay on the site.

13 So again, that's part of our transition
14 planning, we need the person during construction but
15 they would stay on.

16 CHAIR SIEBER: That's not unusual, that's
17 been done in the past.

18 MR. PLISCO: Yes. The real question is to
19 pick the right time, because in budget space and
20 management of resources space, when you send a
21 resident, you put 1200 inspection hours at the site
22 and you're going to get 1200 hours. And whether
23 there's 1200 hours worth of work to do or not. So
24 we've got to pick the right time when there's
25 sufficient activity going on. And that's Bob's

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1 mission is to convince Luis when he needs that 1200
2 hours.

3 MR. REYES: There's no convincing to it,
4 the question is working the timing, when is the best
5 time. We started the paperwork for the advertisement
6 of the position, et cetera, et cetera. It's going to
7 be done, the aligning time is what we're working on.

8 CHAIR SIEBER: The licensee faces a
9 similar situation because he has to have sufficient
10 engineering done before you can put craft labor to
11 work; otherwise, they just stand around waiting for
12 the engineers to do things. And from an NRC
13 standpoint, you don't want your inspectors standing
14 around waiting for the work to get done and the
15 outputs to be produced. So it's a matter of
16 efficiency, but it makes a difference in the
17 professionalism of the people that are doing the work
18 too. Professionals don't like to standby and be
19 insufficiently employed.

20 MEMBER STETKAR: Bob, is the new resident
21 part of your 10 FTE 60-month budget?

22 MR. HAAG: Yes.

23 MEMBER STETKAR: It's not number 11?

24 MR. HAAG: No. We're pretty much fine
25 with 10 right now. And again, we've looked at what we

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1 thought it would take, and this is estimates, to do
2 the various programs to be able to say we've completed
3 all the inspections that we've identified, we believe
4 10 FTEs is adequate.

5 MR. REYES: We were given the resources we
6 asked and if we find out we need more, I have no
7 reservation in asking and no concern that it won't be
8 supported.

9 MR. HAAG: Moving on, talking a little
10 about the inspections that we've done to date. Loren
11 mentioned the readiness inspection. That was an
12 initiative on our part and part of the lessons learned
13 to assess TVA and Bechtel's ability to perform
14 construction work, specifically safety-related work,
15 and we didn't do anything new. We had the inspections
16 as part of the 2512 program for the most part. We
17 just packaged them together to take a concerted effort
18 to look at the quality assurance organization, how
19 they had established that; how their engineering
20 organization was functioning, the procedures, the
21 training of the individuals -- to look at that up
22 front.

23 So we took -- there were probably seven or
24 eight inspection procedures under 2512 that deal with
25 those areas that we did as part of this readiness

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1 inspection. We had a team, I think there were six or
2 seven inspectors up there for a week; again, to look
3 at TVA/Bechtel's readiness to perform construction.
4 And for the most part, we found that they were ready,
5 given the limited amount of safety-related work they
6 were doing at the time.

7 We recognize that many of those
8 inspections we wanted to complete weren't at a point
9 where we could say they were complete. So what we
10 were doing over the past year was to follow up on
11 certain aspects of those inspections as they would
12 progress with either implementing new -- implementing
13 procedures, developing the programs or actually having
14 outputs, engineering outputs we could look at and pass
15 judgment on.

16 So we completed a follow up to the
17 readiness inspection this past March and we closed out
18 many of those inspections that we knew we could do.

19 CHAIR SIEBER: In general, TVA, in the
20 early and mid-1980s, had some issues that, for one
21 reason or another, delayed their construction program
22 at Watts Bar. They embarked on a corrective action
23 program associated with that, which was followed by
24 Region II and headquarters. At this point, when they
25 re-enter construction, I presume you have taken a look

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1 back at how effective those corrective action programs
2 were to solve the 1980s issues. And maybe you could,
3 just in general without a lot of detail, comment on do
4 you think those issues are fully in the background or
5 are there any edges that still are there?

6 MR. REYES: Let me address that, because
7 we -- and I personally was involved on Unit 1 in
8 bringing Unit 1 to license. And when it was all said
9 and done, we were very satisfied. It took a lot of
10 their effort and a lot of our effort to review all
11 those programs and to make sure it was constructed and
12 tested correctly and then their organizational
13 cultural issues. In fact, if you go back in history
14 for Watts Bar Unit 1, the performance of that unit,
15 especially the first year of operation, was
16 incredible. We were blessedly surprised at how well
17 the unit operated and how the issues were resolved and
18 the outcome was very positive.

19 Now on Unit 1 -- we need to do the same
20 reverification on Unit 2 that was done on Unit 1
21 whether it was cable pulling or welding or screws
22 issues. We have a -- Bob has a repertoire of issues
23 from Unit 1, including all the allegations we got on
24 Unit 1, we have that in our repository. He can go
25 through what we were doing to make sure that those

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1 issues were resolved.

2 CHAIR SIEBER: Yeah, that's important to
3 me. I did review the documents from the 1980 sites
4 from the folks in the region that provided them to us
5 for my review. And I had -- I got the perception that
6 the problems were solved and that they are pretty much
7 on track. On the other hand, I wanted to talk to you
8 folks who had been through it and were familiar with
9 the details. So I appreciate your answer and to me,
10 that's reassuring. So thank you very much.

11 Do you have any additional comments?

12 MR. PLISCO: I think Bob is going to talk
13 about some of this more later, but the practical issue
14 was the effort Luis talked about, once they had
15 stopped construction on 2 -- in the inspection
16 program, we didn't go back and look at what they did
17 with those corrective action programs on Unit 2. So
18 that's Bob's challenge. In some cases we did and in
19 some cases we didn't. So they had to go back and look
20 at -- in a lot of cases we approved their program or
21 what they were going to do but what we inspected was
22 only how they applied it to Unit 1. So the challenge
23 Bob has is okay, what needed to be done on Unit 2 and
24 do we need to go back and look at how they applied
25 that program from the '80s, how they applied it to

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1 Unit 2. In some cases they still have to, they
2 haven't done it yet.

3 CHAIR SIEBER: Let me ask another
4 question. Watts Bar 2 is not the only plant whose
5 construction was stopped in the 1980s. There were a
6 lot of economic factors involved in that, high
7 interest rates, recession, the demand for power was a
8 little off, and so a lot of utilities delayed
9 construction or stretched it out or stopped it
10 altogether. In the plants where I was responsible for
11 that, we acted immediately to preserve the plant,
12 sealed up systems and so forth and weather protected
13 things to make sure that the commodities were properly
14 stored so they wouldn't age excessively.

15 It's not clear to me that Watts Bar took
16 all of those extra steps to perform layups and, you
17 know, turn the pump shaft every 30 days to make sure
18 it still turns and these kinds of things. On the
19 other hand, when we looked at the material condition,
20 we found the material condition to be pretty good.
21 And perhaps that's because the plant is nearly built.

22 You know, there's a lot of commodities in place.

23 Could you make a general observation about
24 the extent to which preservation or lack thereof would
25 impede construction to a completion point where it was

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1 similar to or as good as a plant that was built in a
2 normal period of time instead of over 25 years?

3 MR. REYES: Let me talk at a high level
4 and then I'll turn it over to Bob. But what triggered
5 those mechanisms in terms of preservation and layup,
6 et cetera, et cetera, was the times that they kept
7 their construction license. And that triggers our
8 oversight inspections. So plants that kept their
9 construction license and had implemented those
10 programs of maintaining the systems, received
11 inspections from us and that's the case on Watts Bar
12 Unit 2.

13 CHAIR SIEBER: Okay.

14 MR. REYES: There are other cases where
15 the utility decided to cancel the construction permit
16 and sell parts of the plant, et cetera, et cetera, and
17 you got into a situation where if it has to be
18 reinstated, then there's a lot more work to be done
19 and a lot of replacement of equipment, et cetera, et
20 cetera.

21 Watts Bar kept its construction license
22 and we kept inspecting it. And as you saw on your
23 visit, a lot of -- some parts of the plant have to be
24 operational for Unit 1.

25 CHAIR SIEBER: That's right.

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1 MR. REYES: Which made the universe of
2 things to be kept smaller than a traditional project.

3 And I'll just turn it over to Bob to talk about the
4 details.

5 MR. HAAG: We have been inspecting it too,
6 from the period they stopped construction in the mid-
7 '80s throughout. There's guidance, there's inspection
8 procedure for looking at plants that have delayed
9 construction and we did those inspections.

10 I think you're well aware though that TVA
11 did stop some of those layup and preservation programs
12 on Unit 2.

13 CHAIR SIEBER: Yes.

14 MR. HAAG: Back in the early 2000s, and
15 that's allowed. I mean as long as they modify their
16 QA program to recognize what they're going to do, they
17 can do that. And we inspected them and it's
18 recognized that if you take those initiatives to stop
19 your preservation and layup programs, you may have to
20 end up replacing components, you have to justify if
21 you resume construction why it's acceptable. And that
22 falls into the refurbishment program.

23 CHAIR SIEBER: Some of that is going on.

24 MR. HAAG: Some of that's going on. We've
25 given it a very high level of attention as far as

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1 making sure the program itself addresses all the
2 considerations because they stopped the layup and
3 preservations and just because of the time delay
4 between when construction was stopped and then
5 restarted. So all those considerations need to be
6 factored into the refurbishment program and then we
7 need to have a good inspection of the implementation
8 to make sure that they're actually going out and doing
9 exactly what they said. And the results of those
10 inspections that they do; you know, they're doing
11 visual inspections, they're doing wall thickness
12 measurements and things like that, to make sure that
13 they come up with a positive results.

14 MR. REYES: Strategy comes into play when
15 a utility does that and you can do two things. You
16 can do the reverification and engineering analysis to
17 prove that those components are still within the
18 original intent of the specs, et cetera, et cetera or
19 you can just replace them. And TVA has taken an
20 approach now, due to lessons learned, that they're
21 just going to in most cases replace it and there'll be
22 no questions asked.

23 So you find utilities with different
24 strategies, and they have attempted a different
25 strategy due to lessons learned from Browns Ferry.

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1 When they returned Browns Ferry Unit 2 and then they
2 returned Browns Ferry Unit 3 and then Browns Ferry
3 Unit 1, in that sequence this utility has probably
4 learned more than a lot of other people. And they
5 have now a strategy that most likely if there's a
6 question, they're going to replace it rather than
7 trying to re-engineer or analyze the condition of the
8 component.

9 CHAIR SIEBER: Your remarks are consistent
10 with what I read and what I've seen so far. It feels
11 good for me to have confirmation from you that my
12 perceptions are reasonably accurate, so I appreciate
13 that.

14 MR. REYES: Well, the staff has been one
15 of the catalysts for this change. When it came with
16 an analysis or it came with evidence, we really needed
17 to be convinced that we were satisfied and that
18 sometimes is harder to process than just replacing a
19 component. But it was a strategy essentially that
20 they made.

21 CHAIR SIEBER: Okay, thank you.

22 MR. HAAG: I'll give you a couple of
23 examples to make sure you understand what they're
24 doing and our oversight of that.

25 CHAIR SIEBER: Okay.

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1 MR. HAAG: When we looked at their initial
2 program for refurbishment, you know, we reviewed that
3 and have had discussions with them. Some of the
4 components that they're replacing because they've had
5 lessons learned and figure it's better just to replace
6 it versus trying to go in and justify what's
7 acceptable, all the safety-related valves, there's
8 over 60 or 70, they're just buying new actuators.

9 For passive components, many things,
10 obviously they don't want to replace piping, concrete
11 structures. Through our pushing and NRR's
12 questioning, they've got a fairly robust program now
13 looking at different degradation mechanisms dealing
14 with those passive systems and how they're going to
15 address those passive systems, to make sure they're
16 acceptable.

17 We still need to follow through our
18 detailed review of their program to make sure it's
19 acceptable, that they've got all the considerations
20 they need to and again, to follow up with inspection.

21 But their program is much better -- and
22 I'll get to it later on, I'm jumping around. When they
23 initially gave us a program description back into last
24 year, it was very vague, it didn't address many key
25 points. We gave them that feedback, NRR through the

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1 March 31st presentation to you all, that was a key
2 consideration that I took from you all is that you
3 viewed that as a significant challenge to them and
4 something that needed to be addressed. And I think
5 they're on their way. We're not at a point where we're
6 saying the program is acceptable, but I think they're
7 certainly on the way.

8 MEMBER STETKAR: Bob, you're probably
9 going to get to this, you said you're bouncing around
10 a little bit, but you are going to get to what they're
11 doing with the passive? Is that part of the
12 presentation?

13 MR. HAAG: I actually have their procedure
14 here. I don't want to go into all of the details but
15 yeah, I'll talk about our plans to again look at the
16 program, implement the program, and what our strategy
17 has been. I'll get to that.

18 Another inspection activity that we've
19 performed is focused on problem identification and
20 resolution. We've done that in two parts, two phases.

21 It's a routine aspect of the resident inspectors and
22 regional inspectors when they go up and do their
23 inspections, they go look at, you know, problem
24 identification that TVA has identified and we'll look
25 at the corrective actions associated with those. Are

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1 their thresholds correct for initiating those PERS, as
2 they call them, corrective action documents, do they
3 give it the right classification and are their root
4 cause analyses in the appropriate order and
5 acceptable. So that's looked at on a routine basis.

6 We also do a PI&R team inspection and we
7 just completed one back in June of 2009 where we had a
8 team up there for a week and it does a much more
9 focused look at their corrective action program. You
10 know, is it operating well, do the people understand,
11 you know, the expectations associated with the CAP.
12 And overall, the inspection had positive results. We
13 did identify some examples, as is not unusual, where
14 there were certain PERS that they should have done a
15 better job in either the identification to make sure
16 it was clear what the problem was, or at times some of
17 the corrective actions weren't as thorough as they
18 probably should have been. But I'd say overall, you
19 know, we're pleased with the corrective action program
20 that TVA has implemented and how they've been
21 proceeding so far.

22 The historical and current issues really
23 goes towards what Loren mentioned earlier as part of
24 the reconstitution, looking back at previous
25 inspection results and factoring them into how we want

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1 to proceed. And I'll talk a little more about that
2 and the strategy that we have in ensuring that both
3 existing construction that you saw at the plant as of
4 today, and future construction activities is properly
5 inspected.

6 We're using -- we recognize the challenge
7 in identifying all the areas that we want to inspect
8 and being able to say at the end when this project is
9 complete that we have actually done all the
10 inspections, so we've established several tracking
11 mechanisms, ability to be able to go back and
12 demonstrate that we've completed all the required
13 inspections. Our IP&S, inspection, planning and
14 scheduling tool, is one of those that we'll use to
15 identify the inspections that came out of all the
16 reviews that we did up front. And at the end we'll be
17 able to say that we completed all those inspections.

18 Some of the inspections -- the breakdown
19 of the inspections we've looked at, as far as who is
20 going to do what. For my branch, when we were
21 selecting resident inspectors, we looked at their
22 background and skills and tried to match up what we
23 thought would be heavy workloads at the site, so they
24 would be available to deal with some of those heavy
25 workloads from an inspection standpoint. Electrical

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1 was an obvious area, especially cabling. We knew
2 there was going to be a lot of work in the electrical
3 area. Civil structure was also one, but particularly
4 supports. You know, there's a lot of work in
5 supports, so two of the resident inspectors we
6 selected have background both in electrical and civil.

7 So I feel confident that we can do a lot of those
8 inspections. But there's a number of inspections that
9 we don't have the experience and the knowledge within
10 my branch and we'll be using the inspectors from DCI
11 and DRS, as was mentioned earlier, to perform those
12 specialized inspections. Some of those for example
13 were fire protection, welding, pre-service
14 inspections. There's a laundry list of things that
15 we're going to get assistance from the other
16 inspectors within the region.

17 CHAIR SIEBER: This will be an Appendix R
18 plant?

19 MR. HAAG: Yes.

20 For an example, just to kind of give you
21 an idea of how we are distributing some of the
22 workload, the corrective action programs and special
23 programs, there's 29 of those dealing with historical
24 problems. We've made assignments for those, 13 of
25 those inspections have been given to DCI inspectors

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1 and my inspectors will take care of the other ones.

2 We've also looked at the other inspection
3 areas that we've decided to inspect. Those would be
4 some of the generic communications, we'll do
5 inspections for a number of -- and I'll get to this
6 later -- generic letters and bulletins and we're
7 starting to make the initial assignments for those and
8 we'll follow a similar path as far as inspectors
9 within my branch will take a certain number of them
10 and then we'll get assistance from outside the branch.

11 As far as the infrastructure, I think
12 we've kind of talked about that as far as using the
13 existing inspection programs 2512, 13 and 14 and
14 supplementing it with 2517. So I believe we have the
15 infrastructure developed that we need to proceed with
16 construction inspection for Unit 2.

17 One of the questions that was asked was do
18 you have the infrastructure needed or are there any
19 other needs. And the only other thing I would add as
20 far as additional guidance that we're looking at right
21 now would go to the refurbishment program for TVA,
22 because that's fairly unique. I mean, I don't know of
23 another situation where you have a plant that was
24 pretty much built and now they have to go back in and
25 do massive replacements, refurbishment of equipment.

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1 We want all the checks to make sure, you know, passive
2 systems, other things are acceptable. There's a
3 question right now and we're working with NRR, do we
4 need inspection guidance, you know, specifically to
5 that task or can we take existing inspection
6 procedures and pull the guidance from, you know,
7 different points and is that going to be acceptable
8 for the inspectors to go out and inspect that program.

9 So that's one of the things we have on our plate as
10 far as inspection packages in construction.

11 MR. PLISCO: We probably ought to mention
12 too, one of the other things we did in 2517, one of
13 the caveats we put in 2517 was if we completed
14 portions of the infrastructure for new reactors, you
15 know, a program or a process, and it was something we
16 would want to use on Watts Bar instead of what's in
17 2517, it gives us the option to do that. TVA wasn't
18 very excited about that, but we told them if we really
19 develop a process we're going to use from now on for
20 new reactors and if it's appropriate to go ahead and
21 apply it to Watts Bar, we would do that. We might do
22 it on a pilot basis for awhile to make sure of the
23 transition and that type of thing. We talked to them
24 about that possibility, for example, like how we do
25 assessments, things like that. If that process gets

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1 complete for new reactors, we may go back and apply it
2 to Watts Bar. But at this point, we haven't gone back
3 and changed anything yet.

4 MR. HAAG: We haven't gone back and
5 changed anything. The only thing we've come close to
6 piloting would be we were using the inspection
7 procedure for corrective action program, PI&R, there
8 was a procedure developed for construction and we're
9 using that as part of our PI&R inspections for Watts
10 Bar Unit 2, but we're not piloting the entire program.

11 CHAIR SIEBER: It would seem to me, I had
12 the same concerns and interest that you have in the
13 refurbishment program, so I asked questions about
14 that. And it seemed to me that a lot of the
15 refurbishment they planned to do would utilize the
16 ordinary maintenance and inspection procedures that an
17 operating plant would have. For example, it seemed,
18 based on my perception of their list versus what I
19 know is typical in a plant, they may rebuild about 10
20 percent of the valves and in that rebuilding, it would
21 mean replacing packing, replacing diaphragms,
22 replacing gaskets, but basically the metallic parts of
23 it other than incidental inspections during
24 disassembly and reassembly would remain the same.

25 From that standpoint, I don't see the

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1 licensee getting involved in unique conditions and
2 situations that those ordinary maintenance procedures
3 for Unit 1 would not cover. And they're looking at a
4 percentage of rotating machinery, pumps and valves and
5 valves, they do electrical tests on cabling as opposed
6 to -- and I don't know for sure whether they do visual
7 inspections or anything other than that, but that's
8 typically what an operating plant would do.

9 But there are areas in some non-safety
10 systems that are not even important to safety where
11 they will accept the condition as it was originally
12 installed. And my impression was that they had
13 criteria to use, they had procedures and they had
14 plans to put the resources toward that requirement.

15 Is my view of what they're doing
16 consistent with your view?

17 MR. HAAG: Yes, I would say so. I mean,
18 you're right.

19 MR. REYES: In the electrical area,
20 they're going to do much more than that. And there's
21 a reason for it. When we were talking about the
22 issues with Watts Bar and TVA, one of the issues on
23 the Watts Bar site was concerns about exceeding --
24 pulling cable, bend radial forces on cable and the
25 question of whether you damaged the insulation or not.

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1 So there were issues, there are issues like that that
2 the corrective action program for Unit 1 can now be
3 translated to Unit 2.

4 Now there was a lot of intelligence
5 gathered by all they did in Unit 1, so they'll have to
6 modify accordingly, but electrical is an example where
7 they're going to do much more than you would do in a
8 routine situation like this simply because of the
9 question mark of whether the original installation of
10 those cables was questionable. Now in some cases,
11 they're going to just pull a new cable and solve that
12 issue.

13 CHAIR SIEBER: And that's appropriate in
14 that situation because you can't physically inspect
15 the cable to determine whether there's damage or not.

16 MR. REYES: Right.

17 CHAIR SIEBER: If it's pulling tension or
18 bend radius, in my experience, I don't know a way that
19 you can do that. You either do it right or do it
20 over.

21 MR. REYES: They did a lot of testing,
22 they even put water in conduit and checked for
23 insulation continuity and integrity. So they have a
24 wealth of information from Unit 1 and they'll have to
25 do some of the activities on Unit 2, just to confirm

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1 the issue.

2 Electrical is perhaps a little bit of an
3 extreme.

4 CHAIR SIEBER: Well, basically, you know,
5 electrical does differ from some mechanical systems
6 because aging occurs even in mild environments and it
7 can occur to some extent without being energized. In
8 fact, there is some types of aging that occur more
9 rapidly when it's not energized than when it is. And
10 whatever issues there were in the construction and
11 installation, they're made for the life of the plant.

12 So I think that's an area that needs attention but I
13 think that your explanation tells me that you
14 understand what those issues are and so does the
15 licensee.

16 MR. HAAG: There very well may be areas,
17 as you talked about, where different programs would
18 address it. And in those cases, for cabling, you
19 know, there's some corrective action programs to deal
20 with all the historical problem areas from the
21 original construction. Refurbishment programs will
22 look at cabling. So there could be some overlap if the
23 decision isn't made to replace it, whether it's
24 refurbishment or from the CAP, we'll be doing that.
25 One of our goals is to -- because they are distinct

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1 programs and we'll look at it not separately, but
2 we'll want to make sure each program is done. Be
3 efficient in our inspections and if we do an
4 inspection, do it once and take credit for both areas.

5 CHAIR SIEBER: It's also my impression
6 there's a lot of construction cabling, you know,
7 temporary power, around. I got the feeling that the
8 permanent installation was not to the level of the
9 mechanical construction of the plant. It seems to me
10 that there was still a fair amount of electrical work
11 to do; is that correct?

12 MR. REYES: There's a lot of corrective
13 action.

14 CHAIR SIEBER: It's hard to tell.

15 MR. HAAG: As far as current level of
16 installation, I haven't necessarily gathered a
17 difference between the stages.

18 CHAIR SIEBER: Okay.

19 MR. HAAG: I will tell you though from
20 looking back on Unit 1, what they had to do as far as
21 corrective action programs, electrical and cabling in
22 particular was by far the most heavy area in actually
23 replacing. They replaced thousands of feet of
24 cabling, replaced or abandoned what was in place and
25 installed new cabling, on Unit 1 and they've told us

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1 likewise for Unit 2, while the number is less, they're
2 still going to be replacing a significant amount of
3 cable in Unit 2.

4 CHAIR SIEBER: Yeah, I would not be
5 surprised. But it sounds like they have a program
6 put together that will identify and perform the work.

7 MR. HAAG: Yes.

8 CHAIR SIEBER: Okay, thank you.

9 MR. HAAG: And one last thing, Manual
10 Chapter 2517, we wrote it when the program was
11 initiated, we actually issued it at the beginning of
12 2008. We've got about over a year's worth of run time
13 on it, we've identified some areas we want to make
14 changes to and we've got a change in process to tweak
15 that again to best suit how we want to conduct the
16 inspection program. So that's something in the works
17 right now.

18 Several of the questions that you all had
19 focused on our support and interaction with NRR, so I
20 wanted to kind of go over what our plans are there and
21 some of the activities that we have dealing with that
22 interaction.

23 I'd start out with I view our relationship
24 with NRR as we have an excellent relationship with
25 them. We have routine communications, both through

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1 those formal means I have up there as far as periodic
2 status calls. We've had annual meetings, we call them
3 summit meetings, where management both NRR, Region II
4 and the worker levels get together and go over the
5 status of where we're at to see if we need to make
6 course changes and things like that. We've had two of
7 those summit meetings. We've also participated in the
8 outreach meetings, we've had two outreach meetings out
9 in the vicinity of Watts Bar where we've communicated
10 with the public what we plan on doing both from the
11 licensing standpoint and inspection standpoint. So
12 those I would say are the more formal means of
13 interaction.

14 But it's not unusual for me to be on the
15 phone with NRR at least once or twice a week, again
16 going over where they're at in licensing, can we
17 assist them, talking about different reviews that are
18 ongoing, meetings we have set up, things like that.

19 So both from my level and from the
20 inspectors level, they have routine communications
21 with their counterparts too. So certainly if we have
22 some downfalls here, it won't be because of lack of
23 communication. We're communicating, maybe not on the
24 right things, but we certainly are communicating with
25 them.

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1 We've identified a need and they've been
2 receptive to that and we've been proactive in several
3 cases where we've offered our assistance in doing
4 reviews. These would be reviews where TVA would
5 submit something to NRR for review and concurrence and
6 ultimate approval and we've offered our assistance.
7 And we've done that for several reasons, because we
8 have a lot of history with the site, a lot of history
9 with corrective action programs and other issues,
10 problems at Watts Bar and because we have experienced
11 inspectors who can add value there. And also, you
12 know, we want to make sure that our inspection
13 considerations are factored into any type of response
14 or any type of approval that might get incorporated
15 into these reviews that NRR is doing. And that's been
16 very good, they've been responsive to our comments.
17 There's been no wars over who's got ownership of this.

18 It's been a very good relationship as far that.

19 Some of the examples there was the
20 framework that TVA provided for generic
21 communications. We looked at those both from the
22 standpoint of did we think TVA had the right approach
23 to generic communications and we also looked at them
24 from do we need to inspect particular generic
25 communications. And we shared that with TVA.

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1 I mentioned earlier about the
2 refurbishment program. We've looked at that, we've
3 provided some feedback to TVA on their initial program
4 and we're reviewing the revised program that was just
5 recently issued in July.

6 MR. PLISCO: I also wanted to mention on
7 that, we've also reached out in some of these areas
8 where there's been historical problems like cabling
9 and electrical, some of the inspectors that were
10 involved with that at Watts Bar Unit 2 are in other
11 parts of the agency. Bob has done a good job of
12 reaching out to them. When we get a change from TVA
13 on how they're going to approach electrical, we know
14 where those people are, so we call them and say this
15 is what they're -- what do you think about it, you
16 know, will you take a look at this, because they have
17 that historical perspective on what happened and what
18 the issues were. So we've been touching some of those
19 people, actually even before we started the program.
20 We called it a gray beard meeting, we brought in all
21 the staff that were involved with Watts Bar Unit 1.
22 In some cases, before several of them retired, to
23 gather what were the lessons learned, you know, things
24 we ought to do differently with Watts Bar Unit 2,
25 things like that. And those were factored in to how

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1 Bob is approaching that.

2 MR. HAAG: One of the questions that you
3 all had was geared toward our participation in
4 licensing reviews that NRR is responsible for. These
5 are formal reviews where TVA will submit their
6 position on various standard review plan items and are
7 there any inspection outcomes from those reviews and
8 how are we going to deal with those.

9 We haven't actually had any requests yet
10 or any identified inspection needs from the licensing
11 review, and again, I'm talking about the more
12 traditional standard review plan. We have though
13 talked about how will that occur. And just the recent
14 call we had last week, they're in the process of
15 reviewing the electrical area and the reviewer
16 identified some confirmatory action items and they're
17 talking about how are we going to process this. And
18 NRR is putting guidance in the office instruction 110
19 on how they're going to license Watts Bar Unit 2, that
20 will spell that out and the process will be if there's
21 a confirmatory action item from the review staff,
22 they'll put that in an SER that will talk about that
23 confirmatory action. We'll get that as far as input
24 that we need to do an inspection in that area. We'll
25 do the inspection, document it in an inspection report

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1 and then they'll do an update to the SER that will
2 recognize that confirmatory action item has been
3 completed.

4 So that's the process on how we want to do
5 it. The fact that they're going to put it in an SER
6 makes it clear to everyone, you know, what the issue
7 is and what we need to do.

8 During the March 31st ACRS presentation,
9 you all had some discussion with NRR and was asking
10 them about 110 and the reactivation assessment and
11 when that's going to be started. It's talked about in
12 110 but they haven't proceeded on that. We have
13 initiated that process, I say we because NRR is the
14 lead in that, but we've reviewed it. They've issued a
15 charter for that group that talks about how the group
16 will proceed, the first meeting is planned for
17 September, it'll be kind of a kickoff meeting and
18 really, yeah, the charter provides overall guidance,
19 but how -- you know, what are some of the practical
20 considerations as far as what this group will do, how
21 we want to conduct business. So that's going to be the
22 kickoff meeting in September.

23 You know, my view of that group will be,
24 you know, to kind of step back and look at are you
25 proceeding at the right pace. You know, have you done

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1 the right things you need to, given the current status
2 of where construction is, do you have the resources
3 that you need, are you focused and provide that
4 guidance to both us and to the NRR licensing staff.

5 One other area that we've had engagement
6 with NRR has been our self-assessments. We've had two
7 self-assessments of the Watts Bar 2 inspection program
8 within Region II. We had one last summer that looked
9 mainly at our program development. And then we just
10 recently had another self-assessment that was done by
11 three NRR very experienced individuals that looked at
12 more implementation. You know, how are we proceeding,
13 are we following the guidance that we laid out for
14 ourselves. That was a very thorough exam. It was kind
15 of different to be on the receiving end of inspections
16 and assessments but again, you know, it was very
17 thorough. It pointed out a couple of areas that we
18 need to go back and look at because our program
19 guidance tells us something and we may not have been
20 as diligent as we should have. So I consider that a
21 plus. I think part of Loren's view is you need to be
22 critical of yourself and need to make sure that you
23 point those things out early and make sure you make
24 course changes as needed.

25 MR. PLISCO: And our concern, because of

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1 the uniqueness and the history with this, as we go
2 along, we want to make sure we have some other people
3 that aren't involved take a look at what we're doing
4 to make sure it makes sense, because we don't want to
5 get to the end game and then have all these questions
6 come up.

7 We've had two good reviews so far that
8 pointed out some areas that we needed to improve a
9 little bit.

10 MR. HAAG: The first point up there deals
11 with the reconstitution. Luis mentioned that earlier
12 as far as looking back at our previous inspections,
13 understanding what we've looked at as far as the
14 existing plant and how it was constructed and being
15 able to say what else do we need to do.

16 So we did a reconstitution where we took
17 selected inspection procedures from 2512 and compared
18 them to the inspection results that are documented in
19 inspection reports. And we looked at I don't say line
20 by line, but basically inspection objectives and then
21 where did we find corresponding words in our
22 inspection reports that we completed those objectives.

23 What we did was we looking at 36 of the 67 IPs in
24 2512 and did the reconstitution for those. The
25 outcome was for 15 of the 36, we believe all the

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1 inspection attributes and inspection objectives have
2 been completed. For the remaining, it varies as far
3 as, you know, there's a few items that we never
4 documented or we didn't do, to there are several IPs
5 that we haven't done anything, that we're going to
6 have to do them all.

7 So we're factoring that results into our
8 inspection scoping, what do we need to do to be able
9 to say Watts Bar 2 has been properly inspected.
10 Having looked at those historical inspection reports
11 and understood the status of our current inspection,
12 you know, relative to completion of the 2512 IPs does
13 not mean when we said, you know, all the inspection
14 objectives were complete, that doesn't mean we're
15 closing the book and putting that aside.

16 We've recognized that if they're doing new
17 work in an area that's covered by an IP, even if it
18 was complete, you know, as far as all the inspection
19 attributes, we still need to inspect in that area for
20 the new work. So part of our inspection scope is to
21 look at the new work that TVA is doing and making sure
22 that it's incorporated in. And a good example would be
23 concrete.

24 You know, we have several inspection
25 procedures in 2512 that look at concrete placement and

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1 all the attributes have been done, based on our
2 historical inspection reports. We know there's a
3 limited amount of concrete work that they're going to
4 be doing during construction. We're going to inspect
5 those, using those IPs. We won't complete those IPs
6 all over again, because we wouldn't have enough sample
7 sizes but we will look at the construction, you know,
8 that's being done and apply the IPs as we believe it's
9 appropriate.

10 Again, there are some IPs, mechanical,
11 pavement penetration where we looked at the record and
12 we really didn't do any inspections at all, so we're
13 looking at those now to make sure we can meet the
14 inspection objectives. And there may be situations
15 where there's an inspection requirement to go out and
16 look at actual installation. If TVA is not doing an
17 installation, if the mechanical penetrations are
18 already installed, we may have to devise a means to be
19 able to say we've met the intent of the inspection
20 procedure by doing more document review, going out and
21 looking at a bigger sample of installed configurations
22 and things like that.

23 But our objective is to say all the
24 attributes of the inspection procedures in 2512 are
25 complete, either through future inspections or looking

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1 back at the previous inspections that were done.

2 Any questions on that? Because that's an
3 important consideration on our strategy and being able
4 to say the inspection process, inspection program is
5 done.

6 MEMBER STETKAR: I think I heard you say
7 you looked at 31 of 67 --

8 MR. HAAG: 36 of 67.

9 MEMBER STETKAR: 36 of 67. Does that mean
10 that 31 of the 67 basically had no work done on them
11 or is that 36 --

12 MR. HAAG: No. It's 36 -- those 36 really
13 deal with either work observations or records review.

14 If you look at the 2512 inspection procedures, and
15 they've got a sequence that for most of the areas --
16 concrete, supports, welding -- it's a three-step
17 inspection procedure. There's a procedure for looking
18 at the procedures, you know, TVA's or whatever the
19 applicant's information procedures. There is a
20 procedure for looking at work observations and then
21 there's another procedure, the third procedure, is
22 looking at records.

23 What we've stated, you know, in our
24 upfront review, is that the procedures that TVA used
25 to construct both Unit 1 and Unit 2 were essentially

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1 the same. All of those procedures were looked at as
2 far as historical inspection as part of the Unit 1
3 reconstitution effort. So there was no need for us to
4 go back and look at those. So the bulk of the ones we
5 have done are dealing with those procedures. There's a
6 couple other ones that weren't just relevant.

7 MEMBER STETKAR: Okay, thanks.

8 Over the years, there's been several
9 points at Unit 2 where things were, quote,
10 cannibalized. It's understandable that you would go
11 back when new parts are installed. The question is
12 whether the process by which these parts were removed
13 may have impacted other structures or components. How
14 do you capture that?

15 MR. HAAG: Let me make sure I'm focused
16 here in my answer. The Commission policy statement on
17 deferred plants has several things that have to be
18 accomplished when the licensee goes back to resume
19 construction. One of those items is to go back and
20 look at the layup and preservation program to see that
21 they were actively engaged in that program to gain a
22 status of where is the plant now when they're
23 restarting construction. And we did that inspection,
24 we went back and looked at the preservation and layup
25 program. And as part of that review, we also looked

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1 at items that they may have removed from the plant
2 because they were going to use them at Sequoyah or
3 they were going to sell them or whatever reason. And
4 we looked at it to make sure they followed their
5 quality assurance program requirements for those
6 removal activities. Meaning if you took out a valve,
7 cut out a valve, did you use applicable procedures and
8 that you maintained it, so all those activities were -
9 - should have been done under the QA program. You
10 know, they had a construction permit which requires
11 Appendix B program and they followed those procedures.

12 So we looked at that as a part of our review that's
13 dictated by the policy statement on deferred plants.

14 And that was done during the readiness
15 inspection and we found that all those activities that
16 you're referring to were completed using their quality
17 assurance programs.

18 MR. REYES: But graphically let me give
19 you an example, if you're going to sell a large piece
20 of equipment, and getting it out, the people getting
21 it out have some difficulty and they just take a torch
22 -- I've seen this -- and caught the supports on fire
23 or another system just happens to be in the hallway,
24 and again just for the ease of getting it out.

25 The way we do that is because every system

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1 is going to be walked down, every system is going to
2 be walked down and tested. Here is a system several
3 rooms away that you would have probably not thought of
4 involved with this particular activity that got
5 impacted because they needed to get this piece of
6 equipment out and they just cut that line. So because
7 every system is going to be walked down, mechanically,
8 electrically, and flush tested and operational tested,
9 you have assurance that -- you can never answer what
10 else did they touch and that's why you have to take
11 every system and make sure. And then when that is
12 satisfactorily conducted, then we'll turn it over for
13 operations control and then nobody touches it and
14 nobody -- it becomes that transition. So we check
15 every system. And that's a quick answer to your
16 question.

17 MEMBER STETKAR: Thank you.

18 CHAIR SIEBER: Bob, I notice that on our
19 agenda, we're coming up on a break and it occurs in
20 the middle of your presentation.

21 MR. HAAG: That's fine. I knew that was
22 going to happen.

23 CHAIR SIEBER: If you would pick a place
24 that is appropriate and logical in your presentation,
25 let us know.

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1 MR. HAAG: Why don't I try to get through
2 this one slide right here and we can stop.

3 MEMBER BROWN: Well, two of them are
4 together, 19 and 20 are kind of the same thing.

5 MR. HAAG: Yeah, I think though if we get
6 through these right here that really talk about what
7 we were doing as far as developing our inspection
8 program, I think that's an appropriate break.

9 CHAIR SIEBER: Just let us know.

10 MR. HAAG: Okay. Talking about what we
11 included in our inspection program as far as items
12 that we want to inspect, we looked at open items. And
13 that was one of the questions you all had, how we're
14 dealing with open items. So we went back and we
15 established the status of all open items at Watts Bar
16 Unit 2. And particularly what we focused on were
17 those open items that were truly open, meaning they
18 had been documented in the inspection report as this
19 is an issue and never closed out in a subsequent
20 report. So we identified all those and we went
21 through a screening process to look at which ones are
22 relevant to hardware that could have an impact on the
23 existing plant right now versus which ones were
24 programmatic to a program they had in the '80s that
25 may have been flawed, but you know, we're looking at

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1 their programs today and we believe that they're
2 adequate.

3 So we sorted through those and we decided
4 which ones were hardware and those are the ones that
5 we're going to do follow up inspections on.

6 We did similar reviews for generic
7 communications, allegations and temporary
8 instructions. And again, the focus was on, you know,
9 which of those items could have an impact on hardware
10 or the need for TVA programs and processes to be able
11 to support ongoing construction and future operations.

12 So we went in and we sorted through those. I think
13 later on I actually give you some examples of the ones
14 that we picked out to maintain -- to review current
15 issues.

16 CHAIR SIEBER: Now the documents you
17 looked at, do those reviews -- the open items are easy
18 because you keep your own open item list. Generic
19 communications, NRR has allegations, the licensee has,
20 and temporary instructions could be about any place.
21 So I take it you reviewed not only your own records
22 and corrective action open items programs but also the
23 licensee's?

24 MR. HAAG: No, when I'm referring to
25 temporary instructions, those are the formalized

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1 guidance that NRR puts out for inspectors.

2 MR. PLISCO: In the inspection manual.

3 MR. HAAG: Yes.

4 MR. REYES: He's referring to our records.

5 MR. PLISCO: A temporary instruction is a
6 form of an inspection procedure that was specific to
7 Watts Bar --

8 CHAIR SIEBER: Right, I've seen that.

9 MR. PLISCO: -- during the recovery of
10 Unit 1, that was put in the program. A lot of those
11 had been archived and we had to reactivate those.

12 MR. HAAG: But we also looked at the
13 temporary instructions that were issued for the
14 industry, meaning there's a problem with a particular
15 area -- again I talk about later on, there's an
16 example in here for sumps. There was a generic letter
17 for sumps. We issued a temporary instruction to give
18 guidance to our inspectors on what to look for. We're
19 doing those as far as inspecting. So that's what I'm
20 talking about as far as temporary instructions.

21 CHAIR SIEBER: I understand, thank you.

22 MR. HAAG: I'm not going to go over all
23 the examples, the numbers, as far as the allegations
24 and the bulletins, but suffice it to say there was a
25 large population of these. For allegations, there

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1 were over 1000 historical allegations, all of them
2 have been closed for Watts Bar, so the issue should
3 have been resolved at the time, but our emphasis was
4 are there any potential impacts again on Unit 2
5 hardware.

6 We're reviewing the construction schedule
7 to identify future inspection opportunities and those
8 will be again, looking at the scope of inspection,
9 what we want to do. We're somewhat challenged on
10 looking at the schedule. We have a good understanding
11 of the work that they want to do, but the challenge,
12 as I alluded to earlier, is matching those inspection
13 resources with the opportunities, you know, when the
14 applicable construction will be done. But again,
15 going back to understanding the scope of work, we have
16 a pretty good understanding of what they need to do
17 and where we're going to have to apply our inspections
18 for new work.

19 Then the last bullet there just talks
20 about the CAPs and SPs. We talked about those
21 corrective action programs and special programs,
22 there's 29 of those to be done. They submitted their
23 proposal on how they want to do business as far as
24 what they want to apply, and for the most part TVA has
25 told us that they're going to do the same

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1 implementation on Unit 2 as they did on Unit 1. Where
2 there are differences, that's been our focus to make
3 sure that we understand those differences. And NRR has
4 got the lead again in approving that, but we provided
5 them input where we felt like maybe TVA was trying to
6 make an exception, do something different, and we felt
7 it was unacceptable and there were actually a couple
8 of examples where we provided feedback to NRR where
9 TVA had changed course as far as what they planned to
10 do as far as corrective action programs.

11 MEMBER ABDEL-KHALIK: Back to the issue of
12 the inspection opportunities, I suspect there are hold
13 points for their own QA people to come and inspect on
14 Unit 2. Are you cognizant of these hold points so
15 that you can have your own inspectors on location when
16 they're doing these QA checks?

17 MR. HAAG: Not at this point in time.

18 MR. REYES: I was going to explain the
19 issue. The real issue is the activity plan on site
20 calls for doing this activity, so we line up our
21 skilled resources -- let's assume it's electrical or
22 mechanical or whatever it is -- something happens and
23 that never occurs now. But there is so much work and
24 the people are there, so they're going to work over
25 here. So maybe they're going to just walk down cable

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1 for EQ. Well, the inspector that was going to do the
2 EQ inspection was not lined up to do that because we
3 didn't know.

4 So now what Bob is talking about is that
5 now we have a weekly meeting with the licensee on site
6 to go through here's what's going to happen next week.

7 And that's a change from the schedule because we had
8 a situation where some equipment was not delivered or
9 something else happened.

10 CHAIR SIEBER: Right.

11 MR. REYES: So that's the problem with
12 that. The skills we have on site is not a big issue,
13 they're there and they just go to one room versus the
14 other or whatever. But when it's a specialty, EQ is a
15 good example, or fire protection or something like
16 that, then those resources were planned for something
17 else and we have to get creative. So now weekly, Bob's
18 staff on site sits down with the licensee to make sure
19 we understand the horizon coming the next week and the
20 following week.

21 And that's true of every project, by the
22 way. We are emphasizing the REC observation of
23 activities versus REC reviewing. We had to put
24 ourselves a higher hat on how to do this project and
25 therefore the challenge is a little bit higher than we

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1 had in the past, because we want to observe it as it
2 goes.

3 MEMBER MAYNARD: It's been my experience
4 that if the NRC identifies activity that they want to
5 personally observe, that the licensees usually put in
6 a process where they notify you before they do that.

7 MR. REYES: Correct. But if they notify
8 you that tomorrow we're going to do this, --

9 MEMBER MAYNARD: I understand.

10 MR. REYES: -- and the person is in
11 another state, that's a mechanics problem.

12 MEMBER MAYNARD: Yes.

13 MR. REYES: That's our challenge that he's
14 alluding to. And I personally talked to the Vice
15 President last week about that, just so you know. I
16 mean we don't hold back. We have those meetings and
17 you have to be very good about your expected work so
18 we can line up our resources. And they understand it
19 and are being very supportive. But it's just the
20 dynamics. You know, they had a situation with a door
21 that got damaged and then they couldn't do work in
22 that area, something happened, so they completely
23 shifted to another area and we didn't communicate
24 well, so we almost missed an opportunity to observe
25 something. We try to emphasize the REC observation.

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1 CHAIR SIEBER: Usually the licensees have
2 daily and weekly meetings and monthly meetings to do
3 their work planning. I presume your residents attend
4 those meetings.

5 MR. HAAG: They do, they do. And the
6 biggest challenge really in dealing with this
7 scheduling issue is understanding the difference
8 between operating plant, which we're all familiar with
9 how they schedule work both during operations and
10 during refueling outage, and construction, where, you
11 know, they've got this huge amount of work and they
12 don't need a detail, you know, manage it hour by hour.

13 They do have a schedule and it will say, you know,
14 they're doing this work activity in this window. But,
15 you know, whether it gets done in that window or
16 another window is not necessarily crucial to their
17 overall success as long as it gets done.

18 So it's just that recognition that it's
19 different in scheduling in that we need these
20 mechanisms, as Luis talked about, this weekly planning
21 where we've developed a matrix that's listing key
22 areas that's walkdowns, engineering projects and
23 actually work activities, and the status of each one
24 of those areas that we have an interest in inspecting.
25 Windows, what the actual products will be and then

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1 there may not be a walk down for a given area, but if
2 there is, the window is happening, so again, we can
3 align those inspection resources.

4 And then just following up to give you an
5 idea of where we're at doing our inspections of the
6 CAPs and SPs, because that clearly is a very important
7 aspect, to make sure that all those historical issues,
8 problem areas at Watts Bar 2 have been corrected.
9 There's 29 CAPs, we received implementation plans from
10 TVA on how they want to do work for 10 of those
11 implementation plans. We've sent them out to
12 different inspectors who have responsibility for them.
13 We've assigned owners for all 29 CAPs and we're
14 starting to engage the licensee, you told us you're
15 going to do this on Unit 2. There's a little bit of
16 difference between that and what I see you did on Unit
17 1, explain to me. So we're engaging and having the
18 inspectors engage the licensee to make sure it's clear
19 to us that they're doing what they told us. If they
20 said they were doing the same thing in Unit 2 as in
21 Unit 1, we're holding their feet to the fire on that,
22 understanding those differences, and then help them
23 understand what the scope of work will be as part of
24 this review to devise an inspection plan. What do
25 they really want to look at, are there engineering

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1 calculations that they need to review, what sealed
2 work is going to be done, you know, to kind of get an
3 idea for that.

4 So we've started actually doing those
5 already.

6 MEMBER STETKAR: So they've already
7 submitted 10 of the 29?

8 MR. HAAG: Ten of the 29.

9 MEMBER STETKAR: Do you know when they're
10 planning to get the remaining 19 done?

11 MR. HAAG: On that matrix that Luis talked
12 about, it lists the plan dates and they're all within
13 this year. Some of them go up to like November, but
14 they're trickling in.

15 I think this is a good stopping point for
16 me as far as I've addressed all the items I wanted to
17 on this slide.

18 CHAIR SIEBER: Okay, fine. We are
19 scheduled for a 15 minute break and I think we'll use
20 this clock here and come back at 10 after 10.

21 (A short recess was taken.)

22 CHAIR SIEBER: I believe it's time to come
23 back in session and we'll continue on, Bob. You were
24 at the end of slide 19.

25 MR. HAAG: Okay. Let me give one

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1 clarification. I had a question whether Watts Bar is
2 an Appendix R plant and I thought it was. I went back
3 and did a little research. Because of the age of
4 their construction permit, they're actually not a true
5 Appendix R plant. They're committed to Appendix A --

6 CHAIR SIEBER: 951.

7 MR. HAAG: -- and they have certain
8 sections though they're also committed to in Appendix
9 R.

10 CHAIR SIEBER: Okay.

11 MR. HAAG: I think they're typical for
12 their age, when the construction permit was issued in
13 the '70s.

14 CHAIR SIEBER: Yeah, in that time period
15 there were a lot of different classifications for
16 plants because of the way the rules evolved.

17 MR. HAAG: It's our understanding though
18 that Watts Bar has not elected to transition to NFPA
19 805; if that was the question.

20 CHAIR SIEBER: Okay.

21 MR. HAAG: If that was the gist of the
22 question.

23 CHAIR SIEBER: Yeah, that's consistent
24 with about half of the licensees in the country.

25 MR. HAAG: Okay, moving on with the

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1 presentation, dealing with adequacy of QA records.
2 That was brought up earlier and what has been our
3 review of QA records.

4 I'll start off with, QA records are one of
5 things that we look at on a day-to-day basis as we're
6 doing our routine inspections, whether it's -- and for
7 Watts Bar 2, it involves both the records that they're
8 developing as they're doing work, but it's also going
9 back and looking at the historical records. And for
10 example, part of what they're looking at now are
11 radiograph films for the various welds and they're
12 going back and pulling out the old RTs to do a review
13 of those. Bill Bearden, who has got a background, has
14 looked at those and has assessed TVA's view -- or
15 excuse me, Bechtel's view -- of those. So we are
16 engaging both in current records and historical
17 records as part of our day-to-day inspections.

18 There is a corrective action program
19 specifically on QA records, quality of care records.
20 And in that program, TVA will have to look at a broad
21 spectrum of historical QA records to have the
22 assurance that those QA records were actually done.
23 That was a huge program on Unit 1. Bill was
24 intimately involved in that. He's got the lead
25 responsibility for looking at that program

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1 implementation for Unit 2.

2 While we've done a limited review right
3 now of those historical records, some but not clearly
4 as much as what we'll get into once we get that CAP
5 underway and actually start looking at that corrective
6 action program.

7 CHAIR SIEBER: Thank you.

8 MR. HAAG: I think I talked about the next
9 bullet during earlier discussions on the layup,
10 preservation and PM records. You know, we looked at
11 those records when we did our readiness inspection, to
12 see quality of the records, to understand how they
13 were implementing their preservation and layup
14 programs. I don't think I really need to discuss that
15 much more.

16 Safety culture, I would say this is either
17 a lessons learned or just the recognition that safety
18 culture, the role it has played under the program for
19 the ROP, sensitivity of that and the need for our
20 review and assessment of safety culture at the site.
21 So we've been doing that, we've been implementing
22 that, whether it's through parts of the corrective
23 action program, whether it's through our inspection.
24 There's a corrective action program -- you've have to
25 excuse me because I use them interchangeably.

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1 Hopefully when I refer to CAP, you'll know that's the
2 distinct program that looks at the historical issues.

3 CHAIR SIEBER: Right.

4 MR. HAAG: We look at safety culture as
5 part of the corrective action program that they have
6 in place right now. We've looked at their employee
7 concerns, you know, are people, workers, aware of the
8 employee concerns program, what's their view as far as
9 bringing issues either to their supervisor or to the
10 EPC coordinator. We've looked at the EPC records,
11 actual issues that people have brought to them, made a
12 judgment on whether TVA is actually resolving those.
13 That's really the current review of our inspection of
14 safety culture.

15 There is a CAP though that deals with the
16 employee concerns program. That was really the
17 genesis of a lot of the CAPs and the recognition of
18 problems at TVA sites in the mid-'80s was a lot of
19 allegations, a lot of problems that TVA received
20 through their employee concerns program. They had a
21 separate contractor who came out to interview. They
22 received thousands and thousands of issues.

23 So part of our review of the CAP will be
24 specifically looking at has TVA adequately resolved
25 all the issues that they captured in their historical

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1 corrective action program. So we're looking at it
2 both from a historical standpoint and current, you
3 know, do they have healthy corrective action -- excuse
4 me -- healthy safety conscious work environment,
5 safety culture in place.

6 MEMBER MAYNARD: I do have a couple of
7 questions on this because it's kind of unique. You
8 know, the current safety culture initiatives go far
9 beyond just the employee concerns program for the
10 operating plants and I'm wondering how you apply to a
11 construction plant some of the same aspects that you
12 will be looking at from an operating plant, the bigger
13 picture safety culture more consistent with the newer
14 initiatives.

15 MR. HAAG: During our recent PI&R
16 inspection, that was an opportunity to look beyond the
17 employee concerns program. Again, judging the climate
18 of their safety culture, you know, engaging the
19 workers, understanding their either reluctance of
20 bringing issues to their supervisors, to employee
21 concerns, and understanding the different avenues that
22 they might have. So we looked at it as part of that
23 effort.

24 MEMBER MAYNARD: What I'm getting to, like
25 for the operating plants, when it gets into

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1 conservative decision-making, you know, the
2 operational safety type decisions. And in
3 construction, you may not be operating, but you have
4 some similar construction decisions and things that
5 come up. I'm just wondering if you apply any of it to
6 the construction side, things that the inspectors are
7 looking at relative to again the bigger picture safety
8 conscious, safety culture.

9 MR. REYES: That typically gets
10 demonstrated on the industrial safety aspects of the
11 construction more than the operational side for safety
12 margin. So when the inspectors talk to the workers,
13 et cetera, et cetera in addition to operational
14 employee concerns program, do they know who to talk to
15 and all that. A lot of times much of the safety
16 culture environment is industrial safety, which is
17 very challenging during construction and your life can
18 be in danger, et cetera, et cetera, simply from that
19 point of view, and that's typically where we sample
20 and get that feeling. And the other issue about if
21 you don't understand what you're doing or it's
22 different than the drawing, what do you do. Do you
23 feel comfortable stopping or do you just say I know
24 this is wrong but I don't want to go to my manager.
25 Those are the dimensions that we typically get into

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1 with the workers to get that sense of the safety
2 culture on the operating side.

3 MR. HAAG: Another consideration that's
4 more prevalent at a construction site would be, you
5 know, length of employment, how they deal with
6 bringing people on, letting people go. So that would
7 be another consideration that we could see, you know,
8 as far as dissatisfaction, reluctance maybe to bring
9 up an issue because of a concern well, instead of
10 working in fear, you know, they're going to fire me if
11 I bring up the issue. So that would be another aspect
12 that you typically wouldn't have in an operating plant
13 because you have a more stable workforce.

14 Getting into more our assessment and
15 evaluation and more the results of our reviews, the
16 first point I wanted to talk about was the walkdowns
17 and the focus that we had on observing walkdowns that
18 TVA has been doing, to make sure that they're
19 adequately capturing the current configuration of the
20 plant. Bill will tell you that in previous TVA
21 efforts, those walkdowns were not very -- were not
22 necessarily thorough. Sometimes they wouldn't capture
23 really the condition of the plant, so that would
24 affect, you know, future work that they were planning
25 on doing, future evaluations or whatever. So we had a

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1 focused effort this time to look at those walkdowns,
2 were they training the people, were the procedures
3 adequate. We've gone back and done two things.

4 We've both observed those walkdowns in
5 place and then we've gone back after then and done our
6 own independent assessment of those walkdowns. You
7 know if they were taking measurements, we've taken
8 those measurements and compared them. You know, did
9 they adequately perform those functions as they were
10 supposed to be observing and obtaining during
11 walkdown.

12 They've had some growing pains in that.
13 TVA will admit -- I think during the presentation,
14 that was one of the -- it wasn't necessarily a work
15 stoppage, that was one of the areas where they halted
16 work until they ensured the workers had proper tools
17 and training to be able to do the 7914 walkdowns.

18 So again, strong emphasis on that. And
19 the results I would say overall have been good, but
20 some problems with it and we believe TVA has taken
21 appropriate actions to resolve the problems with the
22 walkdowns.

23 Going back to the refurbishment program,
24 this is also -- we talked a little bit about that --
25 and the necessity for the refurbishment program to

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1 deal with the fact that they stopped some of the layup
2 and preservation activities at the site and also just
3 to deal with the period of time from when construction
4 was stopped until it's resumed, and to make sure they
5 assess those conditions.

6 TVA has submitted to the agency their
7 program for refurbishment and I'd say it's really two
8 parts. It's truly a refurbishment, whether they're
9 going out and repairing and making new a component,
10 whether it's replacing gaskets and packing under
11 refurbishment. There's that work, and also
12 replacement, I consider that classical refurbishment.

13 But the other important aspect of the refurbishment
14 program is looking at the existing condition of
15 equipment that they really don't plan on working
16 unless a problem is detected. And you know, they're
17 focusing on pre-service conditions, are there
18 situations out there where there have been damage or
19 some unacceptable condition in the plant equipment,
20 and be able to detect that and make repairs.

21 If these inspections for these pre-service
22 conditions are satisfactory, what TVA plans on doing
23 is saying the equipment is acceptable as is and then
24 continue on with that. And, you know, piping is a
25 very big example, some structural steel is also a good

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1 example, so some of those things that they don't plan
2 on going out and actually doing a refurbishment, they
3 want to say what's out there is acceptable. But they
4 have to demonstrate that it is true.

5 CHAIR SIEBER: I did not notice a lot of
6 commodities stored outside and I also noticed that the
7 structural civil work on the plant was sufficiently
8 completed to enclose it from the elements, weather.

9 MR. HAAG: Yes.

10 CHAIR SIEBER: Is that consistent with
11 your view?

12 MR. HAAG: Yeah, I mean if you walk around
13 the plant, I mean you see very little rust, you know,
14 exposure to elements that you would typically see from
15 that kind of environment.

16 CHAIR SIEBER: Well, for example, I did
17 not see fields full of cable rims or piping components
18 in racks and bins sitting outside, which sometimes in
19 the past, you would see at construction sites.

20 MR. HAAG: Well, for Watts Bar, I mean
21 they really haven't taken necessarily and maintained
22 that equipment that was bought back in the '70s and
23 '80s and just stored it there. I mean they've been
24 using that equipment elsewhere in their fleet. So
25 when they're looking for replacement articles, they're

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1 purchasing them, they're new. I don't say that for
2 100 percent, but for the majority of them, they did
3 not take equipment that was intended and put it in a
4 warehouse and then they're pulling it out right now.
5 That's really not the situation. There's a number of
6 warehouses, you have to walk right around the site,
7 but they've got plenty of warehouses where they have
8 stored equipment there that is existing and where
9 they're bringing in new equipment.

10 CHAIR SIEBER: Okay, thank you.

11 MEMBER STETKAR: Bob, let me stop you here
12 and ask a question.

13 MR. HAAG: Okay.

14 MEMBER STETKAR: What are you doing --
15 what is TVA doing, what are you doing to assess the
16 condition of passive equipment in the sense of aging
17 phenomenon. You know, there's structures, piping
18 systems, buried piping systems that have been now in
19 place for, pick a number, 20-25 years or more. We're
20 in the process of license renewal work on a good
21 portion of the operating plants and those plants are
22 now implementing programs to examine the aging of
23 structures, components, that will have been in place
24 for 40 years, so perhaps another 15 years beyond that
25 at Watts Bar, but those plants in fact are committing

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1 to aging management reviews in particular for passive
2 equipment. And things that I'm interested in are
3 things like buried piping systems, things like areas
4 of equipment that are not necessarily directly
5 accessible. You know, you can look at the stainless
6 steel piping in the containment and obviously people
7 are doing that. It's less easy to look at a buried
8 carbon steel pipe that's been in place for 25 years.

9 MR. HAAG: Yes.

10 MEMBER STETKAR: So what's being done in
11 that area? Are you looking at recommendations from
12 the GALL Report and does TVA have some program in
13 place to inspect those types of passive features that
14 may not be part of -- I understand the shared systems
15 that are normally operating, obviously they're in a
16 situation, but I don't know the extent of other
17 passive features that may have been truly passive for
18 25 years.

19 MR. HAAG: Clearly the responsibility is
20 on TVA to define their level of inspection and
21 assessment of those types of equipment and structures.
22 And then we'll pass judgment on whether that's
23 adequate.

24 Here is their implementation plan that
25 they submitted back in July that talks about, you

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1 know, their program going forward. And for example,
2 on piping, what they've done is -- let me go with the
3 structural steel -- well, they're looking at it under
4 several categories. They're looking at it as far as
5 what are the different degradation mechanisms that
6 could take place and for each one of those, they're
7 saying is that applicable to Watts Bar. If it's a
8 structure that's within a building and it's not
9 exposed to the environmental effects necessarily, like
10 in the aux building, they've been maintaining the
11 environment in the aux building. So those are the
12 different aspects that they have to address or the
13 degradation areas. And they're talking about, for
14 example, piping, they're breaking it down between
15 carbon steel and stainless steel, looking at is it
16 exposed to the environment, is it buried. For each
17 one of those categories, some categories -- again,
18 what are the degradation mechanisms that they need to
19 be concerned about and then what are they doing to
20 address those.

21 So again, from a program standpoint, it
22 appears -- and I don't want to say this -- NRR has got
23 the lead and we're still doing our review, but that's
24 their approach, breaking them down into subcategories
25 and what are the possible, you know, implications from

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1 having been sitting there for the last 25 years.

2 MEMBER STETKAR: That's the process that
3 people go through in terms of the aging management
4 reviews for the license renewal. I was just curious
5 whether -- how formidable that process is and whether
6 TVA and staff, whether it's NRR or the region, are
7 taking benefit from that experience. Because it is a
8 fairly comprehensive, systematic examination process,
9 everything you just said.

10 MR. HAAG: And TVA mentioned, you know,
11 that they've looked at license renewal and they're
12 trying to use the insights from those. When we do our
13 review, we're planning on using inspectors who have
14 license renewal experience to look at these programs.

15 I know NRR is planning on doing the same thing.

16 What I've seen so far though, and that
17 they'll have to address, is these are the programs,
18 you know, this is how I want to do it, how many am I
19 going to do, what's my sample size, you know, how
20 diligent am I going to be to really understand. That
21 has not been defined, that's in their implementing
22 procedures. So we're going to have to engage TVA to
23 have confidence, you know, that they're adequately
24 sampling.

25 MEMBER STETKAR: That's a different issue.

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1 I'm more concerned about are they systematically
2 looking -- identifying the scope of things that they
3 need to look at and identifying the potential
4 mechanisms that they need to address, and do they have
5 a program in place to do that.

6 MR. HAAG: This procedure, you know,
7 should get them there. It may have some holes in it
8 that they'll have to address, but that's the way they
9 go about addressing it.

10 MR. REYES: I think you bring a good
11 point, we need to ensure in our approach to this,
12 because of the history here, that we use that
13 intelligence. And we have it in the agency, we just
14 need to make sure we use it.

15 MEMBER STETKAR: And also something you
16 said kind of triggered the second -- not the second
17 part of my question, because I don't have a second
18 part, but in the license renewal process, you not only
19 look at strictly safety-related equipment, you look at
20 anything that can have an effect on safety-related
21 equipment. so that the scope of those reviews and the
22 scope of the programs actually does extend out into
23 non-safety-related parts of the plant that TVA might
24 not necessarily be focusing on at the moment, for just
25 the safety-related scope of the systems.

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1 MR. HAAG: And I don't know if they're
2 going to areas outside safety-related. I know for a
3 fact though that the refurbishment program is
4 addressing non-safety-related components -- in their
5 best interest. I mean, they're dealing with that.

6 MEMBER STETKAR: Oh, sure.

7 MR. HAAG: But, you know, there's a level
8 that they're inspecting, you know, non-safety piping.
9 I'm not sure that right now, we haven't got to that
10 level.

11 MEMBER STETKAR: Thanks.

12 MR. HAAG: As far as our review of the
13 quality assurance organization, QC, and the
14 effectiveness of --

15 MEMBER BROWN: Are you on the last bullet?
16 I've got a question.

17 MR. HAAG: Okay, yeah, I was pretty much
18 done with the refurbishment program.

19 MEMBER BROWN: Okay. I had a question on
20 the qualification.

21 MR. HAAG: Okay.

22 MEMBER BROWN: When we were up there, they
23 commented or told us that they would be taking --
24 they're maintaining the analog style instrumentation,
25 safeguards instrumentation, they have the design

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1 approach or the design specifically that they had on
2 the Watts Bar 1, which is fine. That's not an issue
3 of trying to build new stuff, that's probably a good
4 idea, simplifies the process.

5 But there's components and new parts that
6 you couldn't get, you know, that just aren't
7 available. So you get new substitute parts, you've
8 got a new guy building the cabinets, the enclosures,
9 the systems and putting them together. And it's been
10 20-25 years since that equipment was qualified
11 relative to its environmental requirements,
12 temperature, humidity, EMI, et cetera, or any other
13 spray or drip proof type requirements they may have
14 due to their locations for water egress and ingress
15 into the cabinets under some circumstances. Now you
16 go to a new guy, you've got the design, you've got the
17 parts, and you say hey, replace these because I have
18 to. But you may not have all the information that the
19 original manufacturers had when they put them together
20 to make sure that that cabinet now is qualified, the
21 new ones that you're building.

22 Is there a -- and I'm just relating this
23 back to my own experience, that when we wanted to kind
24 of build the plant equipment 10-15 years later, we had
25 a different vendor and we normally made him requalify

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1 -- or not requalify, but qualify his ability to
2 manufacture that stuff to meet the original technical
3 specifications or requirements that we had in place.
4 I haven't heard anything from anybody other than they
5 were just going to go build it, sprinkle some new
6 parts in and since it was in the same box, had the
7 same switches on the front, same meters on the panel -
8 - I've got another question on the panels -- how do
9 you verify, how do you know that that equipment that's
10 being done now will meet the qualification
11 requirements?

12 MR. HAAG: That it's still qualified after
13 that.

14 MEMBER BROWN: After a 25-year hiatus.

15 CHAIR SIEBER: Maybe I could add a little
16 bit to that question. The same issues occurred during
17 the construction of the existing plants. A
18 manufacturer can qualify a component if it was
19 packaged and tested with regard to his cabinets and so
20 forth, or you could qualify by analysis. That can be
21 done by the manufacturer, it can be done by the
22 engineering department of the utility or a contracted
23 engineering firm.

24 So those same conditions would apply, in
25 my view, to resumption of construction at Watts Bar.

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1 The fact is, however, that you have to have
2 qualification of the components that require it and
3 the choice of methods that one uses, either the
4 manufacturer's qualification test or qualification by
5 analysis, must be present and documented. Is that
6 correct?

7 MR. HAAG: Well --

8 MEMBER BROWN: Well, we heard from NRR in
9 earlier meetings, it was kind of talked about a little
10 bit, there was no explicit thing and then we had the
11 additional amplification by TVA when we were in the
12 meeting Tuesday.

13 CHAIR SIEBER: Well, there is a
14 methodology.

15 MEMBER BROWN: Oh, no, I understand that,
16 I've got that experience, I've done it by analysis,
17 I've done it by retest. And I haven't heard anything
18 about how we're going to make sure the new reactor
19 cabinets and safeguards control systems are going to
20 be examined and determined to be qualified now that
21 they have been built, even though they're kind of
22 built to the same drawings.

23 There's many times craft knowledge in
24 terms of how they put stuff together, do the drawings
25 really reflect everything relative to gasketing that

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1 has to go in. Are the gasketing materials, can they
2 still get the same ones and are they qualified, you
3 know, in the event that you needed humidity protection
4 for the cabinet. So that was a concern to me relative
5 to the location of these cabinets and how they were
6 doing them and there's been no listing, no
7 identification of the specific system that the
8 cabinets involved and how that qualification is going
9 to be validated for the new equipment that's going to
10 be bought and installed in this plant. And that
11 applies to the safeguard control systems as well as
12 the reactor protection systems, control systems, and
13 monitoring of those systems.

14 MR. HAAG: I would say our approach to be
15 able to look at that and check that would be through
16 our engineering inspections. TVA/Bechtel, you know,
17 they are replacing parts. They're going to have to
18 have that done under an engineering process. You
19 know, it's incumbent on them to make the consideration
20 that you just talked about.

21 MEMBER BROWN: Well, let me take a little
22 bit of issue with that, and I'm not trying to be
23 contentious here.

24 MR. HAAG: Okay.

25 MEMBER BROWN: If you don't tell the guy

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1 what you expect, if you don't tell him you've got a
2 concern, then you don't get there -- when you finally
3 get there, he doesn't cover that area or he doesn't
4 bring it up. And now it becomes a point of
5 contention.

6 I guess my expectation would be that --
7 and I don't know whether it's your responsibility or
8 whether it's NRR's responsibility, I don't know the
9 differentiation well, but I would imagine that it's
10 kind of stuff flows downhill.

11 MR. REYES: It's a field issue.

12 MEMBER BROWN: Yeah, in this circumstance
13 because it's not like it's a design change where
14 you've got all these -- this is fundamentally a build
15 it like it was and it still needs the qualification
16 cycle. So I would envision this to be a region field
17 inspection type oversight. And if Bechtel doesn't
18 understand that you've got that expectation, then
19 maybe they don't have something in their processes to
20 make sure this stuff is qualified.

21 So to me, that's a real open end right
22 now, a real concern of mine relative to this delayed
23 construction.

24 MEMBER MAYNARD: A couple points of
25 clarification because we did talk about this with TVA

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1 a little bit. First of all, most of the equipment
2 we're talking about is going to be Westinghouse
3 equipment. They are using the original equipment
4 manufacturer and they will be getting it with the same
5 specifications, which means that Westinghouse, in this
6 case, or if it was others, are going to have to supply
7 that with the qualification documentation and
8 everything to support qualification for that. They
9 can't just say it was designed the way it had been,
10 they've got to provide the qualification documentation
11 for what was supplied to them.

12 MEMBER BROWN: I don't disagree with that,
13 it's just that I haven't heard anybody step up to the
14 plate and say that that's part of getting the stuff in
15 place. And just saying that TVA is going to buy it
16 from Westinghouse --

17 MEMBER MAYNARD: That's part of the
18 requirements.

19 MEMBER BROWN: You're far more optimistic
20 than I am.

21 MEMBER MAYNARD: I've had that inspected a
22 lot.

23 MR. REYES: That's a very good point
24 because it seems like this happens in most
25 construction sites, this site probably has the most of

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1 that kind of activity and we need to make sure we're
2 including that in our observation. So I appreciate
3 that.

4 MEMBER BROWN: Okay.

5 MR. HAAG: To add to your concern -- I
6 don't want to make you feel any worse -- but if you
7 look at the Bechtel engineering, there's a lot of new
8 engineers. I mean, they don't have the experience
9 they did back in the 1980s.

10 MEMBER BROWN: And Westinghouse doesn't
11 either. I mean they're building stuff, the people
12 that are going to be building it don't have the same
13 appreciation, they weren't brought up in the culture,
14 they do a wide range of stuff, and you just get
15 worried.

16 MR. HAAG: Let me tell you a couple of
17 things that we're doing though. We are doing an
18 engineering inspection looking specifically at
19 engineering products. Would our sampling improve
20 something like you're talking about? I'm not sure, we
21 can go back and look at that and see if there's an
22 opportunity to do that and make sure our expectations
23 are clear to the utility as far as they should be
24 having that review captured as part of their design
25 change or their equipment replacement process.

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1 So we are going to do an engineering
2 inspection, we've got that planned for August. We're
3 going in with a team approach, again, to look at
4 engineering products over all disciplines. So that's
5 going to be done fairly soon.

6 We've also had some discussions on vendor
7 inspections. What type of vendor inspection should be
8 done for an R-50 construction plan in today's
9 environment. We had a vendor, a very robust vendor
10 inspection program back in the early '70s and '80s.
11 Now they have a vendor branch in NRR but they're more
12 reactive versus proactive.

13 And so we've looked at are there some
14 particular areas that we have an itch that could be
15 scratched with the vendor inspection. And one just
16 came up the other day through NRR's review of the
17 Eagle 21, which is the reactor protection system that
18 Westinghouse is building for Unit 2. And the
19 reviewers were concerned that, you know, yeah, they'll
20 make it look like Unit 1 Eagle 21, but there's some
21 components in there that are digital versus -- you
22 know. So they're changing things and they've raised
23 the question do we want to go up and do an acceptance
24 test to make sure they've got a very robust acceptance
25 test at the site to address all those different areas.

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1 So that would be another point that we
2 would look at, you know, are things being done. Would
3 it deal with qualifications, would it look at
4 qualifications? I'm not sure, but looking more
5 towards bringing new and different things into the
6 plant.

7 MEMBER BROWN: Yeah, that was my second
8 question based on the observation we had from the
9 tour, in that the -- I can't remember his name -- made
10 the observation that some of the indications in plant
11 2, the control room area were going to be digitally
12 displayed as opposed to analog displayed. That's
13 okay, that's fine -- well, maybe it's not fine. I
14 mean they want dual operator qualifications. When you
15 are looking at digits changing, depending on the
16 nature of the digital displays, that's different from
17 watching an analog display change. And when you go
18 from one to the other, all of a sudden your mind is
19 not wrapping itself around the way you're looking at
20 stuff.

21 All I know is on the carriers whenever we
22 changed out equipment, we did it in both plants, so
23 that the operators retrained on all the same stuff.
24 I'm not saying we've got to go do that, because I just
25 don't know the extent, it's just something that's a

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1 concern when you change the monitoring of the
2 information transfer, what the operator is going to
3 have to observe. I'm not an operator myself, some of
4 my colleagues have been operators, so they're far more
5 familiar with this than I am, but we always tried to
6 keep that with the Navy operators consistent from
7 plant to plant, even though we didn't necessarily do
8 it from ship to ship plant. They could be different
9 but you would try to do that.

10 So, that was just a thought process on the
11 operators and I think you touched on that a little bit
12 when you started saying digital, and that triggered
13 that thought again on the display.

14 MR. HAAG: One additional area where we'll
15 be looking at the adequacy of control room
16 modification and dealing with some of the historical
17 issues and doing that, we'll be doing this change out
18 from -- certain monitoring equipment from analog to
19 digital. We have a CAP, corrective action program,
20 dealing with control room design. So we'll be looking
21 at it, mainly the historical issues, have they dealt
22 with all those historical issues. But in doing that,
23 we're going to be observing the field installation,
24 we're going to be looking at what are they replacing,
25 under both our inspection procedure requirements and

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1 under that CAP, so we will have, like I said, a
2 detailed look at how the control room is going to be
3 configured.

4 You saw yesterday or Tuesday, there's not
5 much left of the control room as far as instruments.
6 And also to make it look like Unit 1. I'm going to
7 talk about that later on as far as our inspections,
8 but you know, that clearly has to be strategy and a
9 going forward effort in their part to make those two
10 units look alike.

11 CHAIR SIEBER: I don't want to prolong the
12 subject, but as far as qualification of electrical
13 equipment, I think there is an important point about
14 changing internal components which may in effect
15 change the degree of qualification.

16 You may have the same cabinet and 98
17 percent of everything is the same, but you've taken
18 out some analog device and put in a solid state
19 device. My experience, which has been thorough and
20 revealing, is that solid state devices act differently
21 than analog devices from a couple of standpoints. One
22 of them is speed of operation and the other one is
23 RMIs, radio-magnetic interference. Mechanical devices
24 just seem to be able to tolerate that pretty well,
25 solid state devices in my personal experience can

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1 sometimes reset, fail to perform if you have circuit
2 breakers or closers operating on your DC buses, you
3 can mess up vital power supplies and so forth. That
4 needs special examination and that was not in the
5 original rules for qualification to the extent that it
6 should have been.

7 The other thing is that there is a lot of
8 use of solid state relaying, including timers, you
9 know, overturning trips on buses where you have to
10 have a high trip for a period of time long enough to
11 get a pump to start so its starting current gets down
12 to running current. Some of the coordination problems
13 that come about based on my recent discussion with
14 protection engineers is the speed at which these
15 devices operate. They tend to race each other and you
16 can end up not being able to diagnose what happens
17 because you've got a differential before you got to
18 the other current. So there is additional thought I
19 think that needs to go into the inspection and
20 qualification for some of these systems where there's
21 a mixture of analog and digital devices.

22 MR. HAAG: The point is we may have
23 inspection guidance for installing instruments and
24 clearly it may not address some of these current
25 things.

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1 CHAIR SIEBER: You may want to just keep
2 that in mind because it may show up in some incident
3 report, I know it showed up in one of mine.

4 MEMBER BROWN: He made the comment about
5 solid state delay sequencing, the old equipment had a
6 normal recommended delay, contacts were open, there's
7 no current there. You substitute a solid state relay
8 because you want more reliability, now you've got
9 leakage and that changes the whole susceptibility of
10 the downstream control circuits to EMI or any other
11 types of perturbations. I've personally seen that
12 happen where you thought you would just make a nice
13 clean change out and say oh, why did that happen. And
14 we had to backtrack and do something else.

15 So that's part of the thought process. I
16 mean it's one of the types of things you replace, it's
17 an analog component and it can be decoupled, it
18 doesn't -- which is just fine. But you've changed now
19 the impedance characteristic below. So there's a lot
20 of nuances and that's the only point I'm trying to
21 make. Just putting part for part doesn't -- it
22 changes. I mean Jack is 100 percent right, take a new
23 solid state device, put it where an old transistor was
24 even, you get a different susceptibility in that
25 circumstance.

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1 CHAIR SIEBER: That may be as much of an
2 NRR problem as region based.

3 MEMBER BROWN: Absolutely, that's why I
4 asked the question that way.

5 CHAIR SIEBER: On the other hand, it's
6 usually the inspector that runs into these things --
7 not usually, sometimes it's the inspectors that runs
8 into these things first. And they need to know enough
9 to say here's the issue.

10 MR. HAAG: I'm not sure if the NRR
11 submittals they're getting has that level of detail.
12 It may be a higher level.

13 MEMBER BROWN: A typical example, if
14 you've got -- in the older systems you have higher
15 voltage of semiconductors and it could be 12 volts, it
16 could be 15 volts back in the early, late '70s, early
17 '80s. Now you've got five volt devices in there. Now
18 you're susceptible to more humidity and they're not
19 conforming coded, the old ones didn't have to be
20 because they had -- whatever. You can have all types
21 of different issues. You use a printed wiring board
22 as opposed to -- it's got closer traces because
23 they've got the technology to do that, you don't
24 conform code it and now you've got leakage and you get
25 unexpected response under various circumstances, you

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1 shut stuff down or you can prevent stuff from
2 happening.

3 MR. HAAG: An example of what I was just
4 saying as far as NRR --

5 MEMBER BROWN: It's not straight forward.

6 MR. HAAG: -- NRR may not having that
7 information, we were reviewing one of the corrective
8 action programs and we recognized in there they're
9 talking about changing out from analog to digital and
10 we informed NRR, you know, does this affect your
11 review. So we passed that information on because it
12 wouldn't have been in the submittal that TVA provided
13 NRR because they didn't know that level of detail.

14 So at least we're mindful of that and
15 again, it goes towards the differences, understanding
16 differences, whether it's differences they're taking
17 from Unit 1 to Unit 2 or if it's differences in the
18 original design, understanding of that.

19 One thought though on how we might want to
20 focus on your concern though is understanding under
21 changing out transmitters, going to a different design
22 from what they've done on Unit 1. If they've already
23 done that change out in Unit 1, they should have some
24 operating experience. Not in all cases, but that
25 would at least give you a smart sample. If it's

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1 totally different than Unit 1, and they're doing it
2 because they couldn't get that part or whatever, that
3 may be something we want to spend more time on.

4 CHAIR SIEBER: We've been through these
5 cycles in the industry over the years. You know,
6 there are times when the next EP cell was found to
7 drift or what-have-you and everybody decided well,
8 we'll go to 5(Y) and really now we're to the point of
9 maturity in the industry where we're buying (ZZ2). I
10 expect that evolutionary process to go on. And it'll
11 have to be evaluated as it has been in the past based
12 on analysis and performance.

13 MEMBER BROWN: Well, we've spent about two
14 and a half hours on pipes and structures and metals, I
15 thought we ought to get a little change from that.

16 (Laughter.)

17 MR. HAAG: Let me go to the next slide.

18 Evaluation and assessment, this is a
19 continuation. Looking at some of the recent industry
20 issues, and this was a question that you all gave us
21 as far as, you know, what are we doing to look at some
22 of those. And I've tried to come up with a listing of
23 some of those areas that we are being proactive on.

24 We went through that by, again, going back
25 to the generic communications. Has the NRC issued any

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1 positions on a particular industry issue that we would
2 have expected the licensee to take action on and,
3 therefore, we can go inspect. That was our strategy
4 on some of the generic safety issues that haven't been
5 resolved. We'd have a hard time inspecting that if
6 the resolution hasn't been up there and TVA's
7 expectations haven't been spelled out. So that's why
8 we were looking at, again, generic communications on
9 issues that have been addressed -- excuse me -- have
10 been processed and actually an expectation sent up
11 there.

12 But we also included under our I'd say
13 recent industry issues, some of the specific items
14 that relate to Watts Bar Unit 1, whether it's ice
15 condensers, you know, focusing on that. So we looking
16 at both from the industry standpoint and specific to
17 Unit 2 as far as Watts Bar as far as where we ought to
18 be providing our effort.

19 Just some of the examples that we're
20 looking at would be PWR sump, we've got that on our
21 list of inspections we're going to do from an
22 assurance letter and a temporary instruction
23 standpoint. ECCS gas accumulations, you heard TVA
24 saying they're going to do modifications, you know,
25 prior to startup for making changes to the ECCS

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1 system, so we'll be inspecting that.

2 And also the ALA 600, there's a bulletin
3 out on that and TVA has told us they're going to
4 implement corrective actions and we'll be inspecting
5 those.

6 MEMBER MAYNARD: I think those are all
7 good examples. I really encourage you on the gas
8 accumulation one, there's some unique opportunities
9 here for lessons learned from the industry and things
10 that would be maybe inaccessible or high radiation
11 areas for the operating team, this is a great time for
12 both the licensee and for the NRC to get in and take a
13 good look at those areas and make changes if needed.

14 CHAIR SIEBER: Yeah, and I think that
15 point should be well taken. Sometimes it's the
16 configuration of the pipe and vents and drains that
17 sort of aids and abets the accumulations of gases in
18 systems and to the extent that you have some
19 operators, experienced operators, associated with
20 construction and engineering, in my experience that
21 was very helpful in properly locating vents and drains
22 from the standpoint of being in the right place and
23 accessible for operation. And hopefully the licensee
24 is doing that.

25 MR. HAAG: And we need to be mindful when

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1 we do our inspections of those generic issues that TVA
2 doesn't just say well, we'll do on Unit 2 what we did
3 on Unit 1, because of the radiation concerns, they may
4 have evaluated well, it's not feasible or it's not in
5 the best interest to make that change; whereas on Unit
6 2, they don't have that argument.

7 So we should be looked at that, whether
8 it's ECCS gas accumulation, whether it's the bottom
9 mounted instrumentation tubing, you know, getting
10 access to that, providing future inspection
11 opportunities, a lot of those things that they need to
12 look at in the current status of the plant and make
13 appropriate changes.

14 CHAIR SIEBER: Yeah, I perceive that
15 they're actually doing that because they're performing
16 modifications to the as yet unoperated unit that
17 people usually end up doing that after it's run 20 or
18 30 years and an example of that is weld improvement
19 through overlays and the stress improvement of
20 critical welds from a fatigue management standpoint.
21 They're doing it in a no-radiation environment, which
22 makes it efficient and substantially safer and better
23 for the workers. I would congratulate them on
24 incorporating those types of efforts into the
25 construction completion.

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1 MR. HAAG: As far as our inspection
2 results, you know, we've been performing inspections
3 pretty much since we established my branch and we've
4 had inspectors out there at the site, resident
5 inspectors and we've been sending out regional
6 inspectors.

7 I talked earlier about some of the focused
8 areas that we've looked at from the readiness, the
9 PI&R, clearly we wanted to make sure that they had the
10 right structure in place so they could start, you
11 know, construction activities. TVA's oversight of
12 vendors and contractors, that's been an area that we
13 recognized up front from TVA's initial view on their
14 level of oversight and us questioning that, that they
15 needed to have a strong oversight role. When they
16 first started this project, they were talking about
17 like having 25 or 30 TVA employees overseeing Bechtel.

18 Well, that's clearly changed. You heard the numbers,
19 and I think they recognized that they needed to have
20 an active role in oversight in a time keeping,
21 managing this project.

22 So we've looked at that, we've looked at
23 the QA assessments. They have both a Bechtel QA
24 organization and a TVA QA organization. We've looked
25 at the results of those. We went out looking at areas

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1 that they're also looking at. So again, oversight of
2 the vendor and contractor. We've been focusing on
3 that and for the most part, you know, I think TVA has
4 risen to the occasion where they've hired more people
5 and put more effort in place.

6 Their engineering activities, I alluded to
7 that a little bit as far as we looked at it upfront
8 and we're going to look at it again as far as
9 engineering products, that we have the confidence that
10 those engineering products are active, reflective of
11 good engineering standards and that are having the
12 right intent as far as making the changes to Unit 2
13 that they need to, providing the engineering
14 background basis to satisfy any changes that they may
15 make.

16 MEMBER ABDEL-KHALIK: How do you do that?
17 Do you just do a sample and pick someone's design
18 change package and track it from A to Z?

19 MR. HAAG: It would be a sample.

20 MEMBER ABDEL-KHALIK: Do you pull a sample
21 of different pieces of the project?

22 MR. HAAG: It would be sampling. I'd have
23 to have the team leader who's planning on doing that
24 engineering inspection to really give you the details,
25 but clearly sampling. We're looking at the different

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1 disciplines during our inspection, our engineering
2 inspection review. It's design packages we will be
3 looking at, evaluations that they're performing. So
4 it would be a variety of products that engineering has
5 done.

6 MR. REYES: But we also look at the
7 process. In other words, if you have not only a
8 package but a change in the package, do you do
9 independent reviews or independent calculations of
10 critical calculations, so they'll look at that process
11 and they'll actually look at samples to see what the
12 outcome is.

13 MR. HAAG: And, you know, we looked at the
14 process earlier as part of readiness and part of our
15 continuing reviews and now we'll try and focus on
16 samples because they do have a backlog of engineering
17 products we can go in and sample, whereas earlier on,
18 there were limited products that they had.

19 Another area that we've looked at was
20 training and we've identified where that was not --
21 had not been the best effort. We looked at it up front
22 from the engineers to craft people, how diligent are
23 they in making sure people were aware of the history
24 of Watts Bar and applying that to, you know, what's
25 going on. And we've identified some problems, we've

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1 brought it to management's attention, they've taken
2 some actions. There's lingering problems, so that's
3 an area that we have a concern in. Not to a point
4 where I would say it's broken, but clearly we believe
5 that TVA could have done -- could do a better job with
6 some of their training of staff people.

7 As far as our inspection effort and how we
8 have applied our inspections and what we need to do as
9 compared to the actual work that's being done by TVA,
10 they mentioned in their presentation the other day
11 that they're 15 percent complete with construction.
12 When I asked them, I said out of that 15 percent, how
13 much of it is safety-related work, because clearly
14 that's going to be our emphasis, and that number is
15 three percent. So out of the estimated safety-related
16 work they think they need to do, they've done three
17 percent.

18 MEMBER BROWN: It's 20 percent --

19 MR. HAAG: Three.

20 MEMBER BROWN: No, the three percent is 20
21 percent of completed work, not three percent of --

22 MR. HAAG: It's three percent of the
23 safety-related work that they've identified they need
24 to do.

25 MEMBER BROWN: Okay, all right.

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1 MR. HAAG: So I mean clearly they are just
2 starting into the safety-related work. I mean you saw
3 a lot of the removal and things like that that clearly
4 is rebuilding and putting it back in place are the
5 areas we're going to have to view and want to make
6 sure we get all the inspections done.

7 And the last bullet there talks about our
8 collective effort to ensure construction activities
9 aren't affecting Unit 1. And we've done a number of
10 areas in there. We focused on those construction
11 activities that have an opportunity to affect Unit 1
12 and then we have, as we talked about earlier,
13 communications between the resident staff, the
14 operations and construction staff and we also
15 communicate back here in the region between my branch
16 and the oversight and PRP for Watts Bar.

17 So we talk about, you know, if there's an
18 inspection that needs to be identified, needs to be
19 performed, identifying who is the lead responsibility,
20 who is going to do what, making sure we're coordinated
21 in doing those inspections. And we've been I'd say
22 successful in highlighting those inspections we want
23 to do and even we've identified some problems in their
24 activities that could have a potential impact on Unit
25 1.

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1 When they were doing modifications to
2 their auxiliary building, secondary containment
3 envelope, that was to allow them to gain access to the
4 reactor building through those other points of entry.

5 They had to change the boundary for the secondary --
6 for the aux building ventilation and we identified a
7 problem with some of the scaffolding that wasn't
8 placed to support that work, didn't get the level of
9 inspection that TVA had designated. So that's just an
10 example of where we're being mindful of potential
11 impacts on Unit 1.

12 Any more questions on that? That kind of
13 wraps up evaluation and assessment of our inspections.

14 My next bullet was to look at and go over our annual
15 assessment process and what we've done so far in
16 assessing performance. I talked mainly earlier about
17 the inspection results and what we wanted to look at.

18 The Unit 1 assessment review will be done
19 later today by Len Wert, he'll be talking about Unit
20 1.

21 This was an area -- and Loren talked about
22 updated processes that we had to address in 2517. We
23 clearly wanted to take a look at 2512 and its
24 implementing procedures. We don't do that type of
25 assessment any more, so we developed an assessment

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1 process that has many similarities to the ROP. Where
2 we needed to make differences we addressed those and
3 came up with our view on how we ought to assess the
4 construction site. So we've developed an assessment
5 process that's built into 2517.

6 We had an annual assessment of their
7 performance during 2008. That involved having an
8 internal meeting with all the stakeholders within NRC
9 looking at the inspection results and other
10 indications to assess TVA/Bechtel's performance, and
11 looking to see if we needed to make any changes,
12 corrections to our inspections going forward. So we
13 did that, held that meeting back in February of this
14 year and that is part of the process that's spelled
15 out in 2517. We go out and present the results to the
16 public similar to what they do in the ROP. We had
17 that meeting back in April of this year where we
18 presented the results of the assessment in a public
19 setting.

20 Our overall conclusion when we went back
21 and looked at our inspection results, we felt like,
22 you know, TVA's programs and procedures were adequate
23 to support the level of ongoing work, recognizing that
24 they still had areas that they needed to address. But
25 we didn't necessarily see problems where they were

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1 doing work out of place, meaning they didn't have
2 controls, as a finding. That was pretty much the
3 results of our annual assessment.

4 We do quarterly reviews as part of our
5 process where we look at each quarter results of the
6 inspections and again course corrections. We've got a
7 mid-cycle review that's going to take place in August
8 where we'll look at the first six months of the year.

9 Again, very similar to the ROP as far as structure
10 and how we want to go about it from a program
11 standpoint.

12 MEMBER ABDEL-KHALIK: Are the assessment
13 measures quantitative or just qualitative?

14 MR. HAAG: They're qualitative, because we
15 don't -- we are using traditional enforcement. We
16 don't have ROP-like information, we don't have
17 performance indicators, we don't have findings and
18 violations that have a significance level and we don't
19 have an action matrix where, you know, if you get a
20 certain number of colored findings you take a certain
21 response. We don't have that, and that was one of the
22 changes that we understood for a construction site
23 that's not developed. So we had to talk about what
24 we're factoring into our assessments, mainly
25 inspection results through violations and again,

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1 inspections overall. And then deciding how we want to
2 gauge our performance or our action based on, you
3 know, our inspection results. And it gives examples
4 of how we can modify and how we can engage TVA through
5 our inspections.

6 MR. PLISCO: When I was talking earlier,
7 this is really the practical problem as far as the
8 timing of Watts Bar, we have not completed development
9 of what we need for assessment for new reactor
10 construction. That's still under discussion with the
11 industry and the Commission and the way things are
12 going, I don't even expect that to finish until
13 sometime next year. So we can't use -- you know, if
14 that had been done, we could have used that as a
15 template, but that's not finished and it's taken a
16 number of twists and turns. So we couldn't even pick
17 a spot that looked like where we were headed, it kept
18 changing.

19 So that's why we opted to go back and
20 build this process that we've built with 2517, just
21 put that together. For now, we use that. We told TVA
22 that if the new reactor program gets established and
23 depending on where we are in the timing, we may
24 incorporate that and start using that program. You
25 know, if there's only a year left, we probably won't.

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1 You know, a lot depends on when it finishes and how
2 easy it would be to change over. So that's still a
3 decision we've left open, so we may opt to go with it
4 once it's finished.

5 Questions on safety culture ties into that
6 issue too because part of the discussion on the new
7 reactor assessment program is how will safety culture
8 be a part of the assessment process. And the group
9 that's working on that is working with what's going on
10 on the operating reactor side because there's still
11 discussions on exactly how it'll work on the operating
12 reactor side.

13 So we didn't want to become disjointed
14 with the operating assessment program, so we're
15 waiting for that to settle and then we'll make a
16 change to construction and then we might change at
17 Watts Bar if the timing works out.

18 So that's why it looks the way it looks.

19 MR. HAAG: We did include cross-cutting
20 aspects as part of our assessment process, so when we
21 have a finding of a violation, if it's applicable to
22 the cross-cutting aspect -- are you familiar with that
23 under the ROP? We'll tie the cross-cutting aspects to
24 a finding and then during our assessment process we
25 will collectively ask what does that tell us, is there

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1 a problem in one of those different cross-cutting
2 areas.

3 Operator licensing. Looking at TVA's
4 decision to have dual unit licenses for their
5 operators, the question obviously is what do we need
6 to do to prepare ourselves to be able to issue new
7 licenses, because current licenses for all of the
8 Watts Bar operators are for Unit 1 only. So they're
9 going to have to have licenses changed and we have
10 work to do in that area.

11 And what we've looked at so far is
12 understanding -- really it boils down to the
13 differences. You know, making sure they understand
14 the differences and those differences won't adversely
15 affect their ability to safely operate the plant. And
16 we would do that through an operating exam, through
17 the JPMS we do walk-throughs in the plant and
18 simulator scenarios.

19 Another option would be written exams. We
20 could possibly provide additional written exams to
21 current license holders. We haven't fully developed
22 our strategy there as far as do we need a written
23 exam, what level of operating exam do we need. Part
24 of that is because we really need to understand TVA's
25 assessment and what are they going to do for the

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1 operators, both the current Unit 1 operators, and
2 future operators that are going to be getting a dual
3 unit license. So we need to understand their view on
4 this area and what they're taking -- the actions
5 they're taking and then take appropriate steps as far
6 as examination of the individuals.

7 We have been looking at what they're doing
8 for upcoming classes, these would be new operators who
9 would get the dual unit license, and looking at their
10 instruction information, what they're getting. Again,
11 with the thought in mind of making sure that TVA's own
12 internal training process and their exams that they
13 apply to the operators is adequate and that once we
14 get to a point where we need to test them, that
15 they're going to be adequately trained.

16 CHAIR SIEBER: You don't need licensed
17 operators until you get to fuel load, do you?

18 MR. HAAG: Right.

19 CHAIR SIEBER: And when is that scheduled
20 to occur?

21 MR. HAAG: Their published schedule is
22 April 2012.

23 CHAIR SIEBER: And so any new operator
24 would have to be identified now to begin training.
25 Right now is about the right time, there's no time

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1 left as I see it.

2 MR. REYES: They have a very detailed
3 schedule on the number of individuals they're training
4 in classes and they shared that with us because we
5 have to examine them. So that plan is in place and
6 we're very aware of that. And they are very
7 conservative, they're assuming that they will have a
8 low passing rate simply just to cushion themselves to
9 make sure they have enough licenses.

10 CHAIR SIEBER: One thing that I'm curious
11 about on what they've evaluated and made decisions on
12 is whether they should have dual licenses or single
13 licenses. It takes a pretty good human factors
14 evaluation and I'm sure these two units do have some
15 differences and so there will be some not only system
16 differences, which may not show up in the control
17 room, but some instrumentation differences too, as far
18 as speed of response characteristics.

19 Has TVA done a human factors evaluation of
20 differences between the control room and is it
21 required -- what are the NRC regulations and
22 requirements and criteria that one would use as a
23 regulator to decide whether single unit or dual unit
24 operating licenses should be issued?

25 MR. REYES: We have to do a human factors

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1 review of the control room design of any new facility
2 that comes on line. And that's a team effort with NRR
3 and the region. So that will have to be done for Unit
4 2. Now the examination of the operators and the
5 training they do, we have had the situation many times
6 where one unit -- multiple unit sites have shared
7 problems, you put new equipment in one, you have to
8 wait 18 months until the next refueling outage to put
9 it on the second one.

10 CHAIR SIEBER: That's right.

11 MR. REYES: So that has a big gap in an
12 adequate training program and we will have to examine
13 those operators. We will eventually know exactly how
14 these two units are going to look differently, but
15 that will be the mechanism to do that.

16 The human factors review of the control
17 room is a separate effort.

18 CHAIR SIEBER: One other question, which
19 may be out of sequence here, but if you go into the
20 control room now, it's one big room with a plexiglas -
21 - or not even plexiglas, sheet plastic, that separates
22 the operating plant from the non-operating plant and I
23 guess for the time being that's just fine because
24 nothing is going on in the construction side.

25 My experience is that when you're actually

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1 installing the equipment and calibrating things and
2 painting and grinding and so forth, there is lots of
3 noise, lots of change in the breathing atmosphere and
4 so forth. Is there a plan to put a more substantial
5 barrier between the units or would you tolerate
6 construction activities with nothing more than a
7 plastic barrier?

8 MR. REYES: We see both, depending on the
9 ventilation system, because if it's a co-ventilation
10 system, they may not be able to put a wall in between.

11 MR. HAAG: That was recently installed
12 when they started doing the work on the Unit 2 control
13 room, moving panels, a limited amount of grinding and
14 welding, because some of the cabinets themselves had
15 to be modified to accept new panels. But that barrier
16 was recently installed from a noise perspective and I
17 don't know if you had an opportunity to see, but
18 behind one of the panels there, they had almost a
19 cage, to try to enclose that to the maximum extent
20 possible. So they are taking initiatives to minimize
21 the effect of those Unit 2 activities on Unit 1.

22 And the Unit 1 resident inspectors, you
23 know, spend a considerable amount of time in the
24 control room and they would be able to judge the
25 distraction level.

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1 CHAIR SIEBER: I've seen barriers that go
2 from this type, which we recently observed, where
3 virtually no work was going on, to two by four walls
4 with plaster board, to welded steel walls to provide a
5 security barrier and an air tight boundary. And so
6 there's a wide range, but I think that has to be
7 carefully evaluated because the ultimate importance is
8 to provide the right environment in the operating unit
9 so operators don't make mistakes.

10 MR. REYES: And they do have a worker
11 profile, when Unit 1 goes into a refueling outage,
12 they have certain activities they want to conduct
13 during that window of time when Unit 1 is on refueling
14 outage, some of them in the control room, some of them
15 outside the control room. But a similar concern
16 parallels in other parts of the plant.

17 MEMBER ABDEL-KHALIK: Do you believe that
18 despite the change in instrumentation between Units 1
19 and 2 that having only one simulator will be adequate?

20 MR. REYES: Typically the way it's done in
21 the industry is they replace -- they update the
22 simulator to whatever number of units -- we have 1, 2
23 or 3 unit sites -- it's going to be at and the people
24 get trained on that and eventually the units catch up
25 with it. So I don't know how they're going to do it

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1 with the simulator, but the answer is eventually
2 you're going to have both units to be very similar.

3 MEMBER ABDEL-KHALIK: The physical
4 appearance will be different.

5 MR. REYES: Correct.

6 MR. HAAG: From what I've seen in the
7 Region II plants with dual operation and what I
8 understand as far as their intent to make Unit 2 look
9 like Unit 1, it's certainly going to be consistent
10 with other plants here in Region II, as far as having
11 one simulator. And yes, they'll have to make a
12 judgment as far as, you know, when they make the
13 changes to the simulator to reflect changes in the
14 plant and how they control those differences and the
15 training that they're going to have on the operators.

16 MR. REYES: It is their intent eventually,
17 if you look at an instrument that would be a digital
18 readout in Unit 2, eventually to make Unit 1 the same
19 way, but they have the same problem, that piece of
20 equipment is no longer available is the reason they're
21 going to that. So there will be a delta, there'll be
22 a delta between the two programs. But we have seen
23 that in the industry and there's a way to manage it,
24 but you could do it with one simulator but you have to
25 strategize the simulator modifications to make sure

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1 you teach people the two until they catch up.

2 CHAIR SIEBER: I did ask the licensee
3 about these issues and specifically about the location
4 of controls and the location of the corresponding
5 instruments, you need the instrument and the control
6 so that you can see what you're doing when you're
7 operating something and its relationship to its
8 counterpart in the Unit 1. And they told me that the
9 locations would be identical even though instruments
10 may differ in their faceplates, which we have found
11 acceptable in the past. The things that we found
12 difficult for operators in one set of studies that I
13 did was when the instrument locations are different
14 and the second thing that's different is when the
15 actual systems are different.

16 You may have two units, one with a
17 particular piece of equipment and one without and so
18 you have a different set of instruments on the panel.

19 EQ or fire protection may have caused you to
20 rearrange instruments. There, I think you're headed
21 for single unit licenses.

22 And so there's an evaluation that has to
23 be performed and documented, in my opinion, to justify
24 dual licenses.

25 MR. HAAG: It's going to be critical that

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1 they maintain an accurate differences list and
2 evaluate that. One of the biggest differences would
3 be the steam generators. They've replaced the steam
4 generators in Unit 1, they're using the existing steam
5 generators on Unit 2. You heard the set points will
6 be different, you know, system characteristics may
7 also be different. So they're going to have to train
8 on that. But that's been done here in the region where
9 we've had a dual unit site where they would change out
10 steam generators on one unit and wait until the next
11 cycle to change out on the other one.

12 CHAIR SIEBER: I'm familiar with that.
13 Let me ask a question, when they changed Unit 1 steam
14 generators, did they change the surface?

15 MR. HAAG: Pardon?

16 CHAIR SIEBER: The heat transfer surface,
17 more tubes, smaller tubes? That's what changes the
18 characteristic more than anything else.

19 MR. REYES: Correct. The typical
20 replacement is to change tubing to eliminate some of
21 the issues with the tubing cracking and et cetera, et
22 cetera. But they also reset the taps to eliminate the
23 transients, et cetera, et cetera. So the readouts are
24 -- the references are different.

25 CHAIR SIEBER: Generally when they change

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1 the tubing material, the heat conductivity is less, so
2 they increase the surface.

3 MEMBER MAYNARD: I'm not overly concerned
4 with the differences in the plant; like you said,
5 within the industry that's occurring all the time.
6 For this particular unit, the one I'd be more
7 concerned with is they've been operating -- they have
8 shared systems -- they've been operating one plant
9 without the other one there. Now when you have the
10 second one operating, that to me is the most
11 significant difference that they're going to have to
12 make sure the training addresses, more so than minor
13 differences between the two.

14 MR. REYES: We also understand when you
15 have four diesels to run one unit, you don't have the
16 same impact as if you have two units. So there's that
17 dimension to the problem or the challenge.

18 MEMBER STETKAR: That's, in my opinion, a
19 bigger dimension to the challenge. If they're
20 starting to establish training programs today for new
21 people coming in, that's one thing because I can train
22 a new operator to think about shared plant. What are
23 you looking at about retraining the existing licensed
24 operators on Unit 1 and are you addressing -- have you
25 looked or thought about how TVA is addressing that?

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1 It's a big change and that is probably an area where
2 although you have experience from -- everybody's
3 focused for the last half hour on differences and you
4 have experience looking at differences between two
5 units and the construction programs. I'll bet that
6 nobody has experience taking a plant that has the
7 degree of shared systems that Watts Bar has and
8 changing it from a single unit to a completely shared
9 two unit site.

10 MR. REYES: With one exception, Browns
11 Ferry, the three units have a lot of shared systems.

12 MEMBER STETKAR: But they had people --
13 they had operated those units for some period of time
14 and they had people who were trained and licensed in
15 that configuration. They had to train new people, but
16 as I said, training a new body to understand how a
17 shared plant works is different than retraining an
18 existing person who has operated a single unit for 13
19 or 14 years. That's probably a large challenge.

20 MR. HAAG: We do have in our inspection
21 program where we look at the original programs, so
22 that would be an opportunity where we could look at
23 the training that was provided to existing operators,
24 whether it's differences or whether it's subtle system
25 changes that will now take place because it's going to

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1 be a two unit operation and surface water has now got
2 double number of loads. So that would be an
3 opportunity. I don't know, you know, the extent of
4 our --

5 MEMBER STETKAR: Two days ago when I asked
6 TVA the same question, I got the answer that focused
7 on differences between Unit 1 and 2. And that's
8 certainly important, I'm not trying to downplay that.

9 I'm just trying to raise an awareness of a set of
10 currently licensed operators who now know -- they
11 know, this is not testing -- they know how those
12 systems work because they've always worked that way
13 for the last 13 or 14 years. And the retraining
14 program, you know, it's something you can't just tell
15 somebody okay, in this requal session, you're going to
16 have to learn to think of the fact that these are now
17 shared. It doesn't work that way. It takes awhile to
18 unlearn things.

19 MR. PLISCO: It's a good question, we've
20 talked with TVA about it a little bit. I don't think
21 they've worked out all the details. I mean we know
22 some of the systems over the years that they've used
23 Unit 2 as far as margin and they've had issues. And
24 that obviously goes away and they have -- they're
25 working on some engineering issues like that and that

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1 obviously would go back and impact the operators'
2 understanding of the operation.

3 CHAIR SIEBER: Are we ready for the
4 conclusion?

5 MR. HAAG: I'm ready.

6 Just kind of looking back at where we've
7 been and trying to give you an assessment, view of our
8 thoughts on this program and where we've been and
9 again what we need to do. We think the infrastructure
10 is adequate to support our needs. I did mention the
11 one item we're looking at as far as possibly new
12 inspections, but for the most part we feel comfortable
13 with the guidance we've got, knowledge level of our
14 inspectors and ability to complete that.

15 Inspection resources, we believe they're
16 adequate, 10 FTE, and how we're utilizing those and
17 like Loren said, there will probably be some time when
18 we'll be using -- where we'll have more than 10
19 inspectors dedicated to it, but overall we believe as
20 far as our ability to hire people and dedicate them to
21 work, we believe that's adequate.

22 The experience particularly in my branch
23 and what they bring to the table, I feel like we're
24 very capable of being able to assess TVA from the
25 standpoint of understanding what they're currently

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1 doing and the challenges that they face because of the
2 historical problems at the site.

3 The oversight, I think that's going to be
4 an opportunity for us to add even more stability and
5 having a clear agency understanding that we're going
6 in the right direction. It's still in its infancy
7 stage as far as, you know, developing what it all
8 wants to do, but I think it has the capability. We
9 had a similar assessment group for Watts Bar Unit 1
10 and that was viewed as a success as far as being able
11 to monitor things and make course corrections as we
12 go.

13 Then the last bullet there talks about
14 just challenges that I face in making sure we have the
15 right inspection talent up there at the given time for
16 observing and inspecting those activities that we felt
17 like were crucial to ensuring success of the
18 construction project. And we're working on that, it's
19 still a challenge and I think it's going to be a
20 challenge throughout the project.

21 That was pretty much it as far as my
22 presentation. Any additional questions?

23 CHAIR SIEBER: Does the committee have any
24 additional questions?

25 (No response.)

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1 CHAIR SIEBER: I think this morning's
2 session was very well done and I personally appreciate
3 that as I'm sure the members share my feelings.

4 Not that I'm a rigorous schedule follower,
5 but we're exactly on time according to the agenda and
6 I would like to have a one hour recess for lunch. We
7 should return and be prepared to start at 12:30.

8 Thank you very much.

9 (Whereupon, a luncheon recess was taken at
10 11:30 a.m.)
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AFTERNOON SESSION

1
2 CHAIR SIEBER: The meeting is back in
3 session.

4 Mark.

5 MR. LESSER: Well, good afternoon. I hope
6 everybody had a nice lunch.

7 I've been asked to talk about other
8 construction inspection activities that are going on
9 in the Center for Construction Inspection, away from
10 Watts Bar 2. My name is Mark Lesser, I am a branch
11 chief in the Division of Construction Inspection and
12 I'd like to talk about four main areas of activities
13 that the Center for Construction Inspection is
14 involved in.

15 We'll talk a little bit about fuel
16 facility construction activities, vendor inspections,
17 new reactors and support to operating reactor
18 inspections.

19 First up, fuel facilities, we're doing a
20 lot of active inspections on two major fuel facility
21 construction projects. The first one, Shaw Areva's
22 MOX facility, or mixed oxide fuel fabrication facility
23 in Aiken, South Carolina.

24 Our inspection program is governed by
25 Manual Chapter 2630. We started inspections there in

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1 October of 2006. We do have a senior resident
2 inspector on site and supplemented by inspections from
3 the region.

4 The other major facility is the Louisiana
5 Energy Services, LES, national enrichment facility in
6 Eunice, New Mexico.

7 Our inspection program there is governed
8 by Manual Chapter 2696 and inspection started there in
9 December 2006. We do not have a resident inspector
10 there and those inspections are conducted solely from
11 the region.

12 The next slide just lists the general type
13 of inspections. Both programs are similar --

14 MEMBER ABDEL-KHALIK: Excuse me. How old
15 are these Manual Chapters, 2630 and 2696?

16 MR. LESSER: They are relatively new.
17 They were written specifically for these projects, so
18 I don't know the exact date, but they were written in
19 the 2006 time frame or right before we needed them.

20 MEMBER ABDEL-KHALIK: Thank you.

21 CHAIR SIEBER: Let me ask a couple of
22 minor questions on the previous slide. Both of these
23 fuel facilities, they do not have the same accident
24 potential that a power plant does. For example, in a
25 fuel facility, you worry about criticality accidents

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1 and in particular the MOX facility may have red oil
2 issues or any kind of reprocessing or purex type of
3 plant. Generally those kind of local effects do not
4 have a widespread impact on the surrounding
5 populations. Does that change the focus of the type
6 of inspections that you do, the fact that the accident
7 sequences are different? And if so, in what way does
8 it change your focus of inspections?

9 MR. LESSER: You're correct that I guess
10 the risk associated with the MOX facility is
11 considered higher, and so first of all, we have
12 authorized a higher number of inspection resources,
13 full time equivalent resources, per year to perform
14 the inspections.

15 LES is a lower risk type of operation and
16 so the number of inspection hours is much less on
17 that.

18 The general types of inspections are
19 similar because we're going to look at quality
20 assurance, civil engineering, electrical engineering,
21 mechanical engineering and the building of systems for
22 construction purposes. And we're going to focus on
23 the safety-important systems. But obviously the way
24 that the program is and will continue to be set up is
25 that the amount of resources and the intensity of

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1 inspection will be a lot more on the MOX facility, and
2 that also dictates why we have a full time senior
3 resident there.

4 MR. REYES: I was going to add that was
5 the driver. On the MOX facility, you have special
6 nuclear material related concerns accident scenarios.

7 But you do have some -- you mentioned red oil. You
8 do have a lot of chemicals, large amounts of chemicals
9 that are always a concern in accident scenarios.

10 The LES facility is much more simpler,
11 less hazards, so the degree of oversight by us is
12 driven by the facility design complexity and the
13 potential hazards. And you see a difference here,
14 where we have a resident inspector on the site all the
15 time for the MOX, we don't do that at LES, it's much
16 simpler -- much simpler structure, much simpler
17 systems, just less hazards.

18 CHAIR SIEBER: Thank you very much.

19 MR. PLISCO: And just to give you a
20 quantitative sense of the budget, in LES we have one
21 FTE to do inspections, in MOX, we have about five,
22 compared to what we talked about this morning where we
23 have 10.

24 CHAIR SIEBER: But that's not related to
25 the cost of the facility, it's related to the hazard.

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1 MR. REYES: Correct.

2 MR. PLISCO: Exactly.

3 CHAIR SIEBER: Thank you.

4 MR. LESSER: As I was saying, the nature
5 of the inspections is similar. This is kind of a
6 summary of some of the inspections that we've been
7 performing for the last couple of years.

8 Certainly the quality assurance program
9 implementation. Both of them have quality assurance
10 program documents that have been approved by the
11 Nuclear Regulatory Commission and are required to
12 follow them. This includes things like design
13 control, corrective action and all the other
14 associated criteria that you would expect to see in a
15 quality assurance program.

16 Our inspections will focus on
17 implementation of that program.

18 We focus on the structures called items
19 relied on for safety. These are the safety-related
20 structures in a fuel facility components and the
21 acronym is IROFS, items relied on for safety. So the
22 construction of those.

23 The program will look at ultimately the
24 finished construction and the testing of those
25 systems.

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1 Civil engineering, typical civil
2 engineering activities -- backfill, concrete
3 foundations and buildings, structural steel,
4 instrumentation. LES has some limited amount of
5 safety instrumentation, it is not digital, it's
6 analog, but they have some safety functions that
7 require instrumentation, high temperature trips on
8 certain functions. Piping and welding and commercial
9 grade dedication activities associated with that.

10 CHAIR SIEBER: To what extent in these
11 kinds of facilities are seismic issues part of it?
12 For example, you don't have the size of the
13 structures, and the hazards associated with a seismic
14 event other than a chemical reaction is probably not
15 high. On the other hand, control of things like
16 backfill, foundations and so forth are important to
17 establishing the proper engineered features to deal
18 with seismic events. To what extent is seismicity
19 involved in these kinds of structures?

20 MR. LESSER: Seismicity is part of the
21 licensing basis.

22 CHAIR SIEBER: Is it the same standard
23 that a power plant would have?

24 MR. LESSER: I don't know if it's the same
25 standard --

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1 CHAIR SIEBER: Or is it civil? Like a
2 test reactor conforms to state standards for
3 industrial buildings as opposed to the NRC standards
4 on seismicity.

5 MR. REYES: The mixed oxide facility has
6 similar standards as a nuclear reactor.

7 CHAIR SIEBER: Okay.

8 MR. REYES: Because of the systems and
9 contents of the material.

10 CHAIR SIEBER: Okay.

11 MR. REYES: And then the LES facility is a
12 lesser standard.

13 CHAIR SIEBER: That would be a state
14 standard for --

15 MR. REYES: The piping or the centrifuge
16 system becomes the barrier, the boundary, and what you
17 need is getting the building to withstand certain
18 seismic activity, but not to the extent of a nuclear
19 reactor.

20 CHAIR SIEBER: Okay. You don't want the
21 building to fall on the piping, but if you were to get
22 a breach in the building, it would be of no
23 consequence.

24 Okay, thank you.

25 MR. LESSER: We've been developing a lot

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1 of inspection experience. We've had findings in
2 various areas associated with quality assurance
3 controls, associated with construction activities.

4 This is just a couple of slides just kind
5 of summarizing some of the issues that have come up.
6 Controls over the concrete batch plant, rebar bending
7 issues, reinforcing steel splices, design change
8 controls, test procedures.

9 And typical of what you might find at a
10 construction site.

11 Quality assurance record issues, oversight
12 of contractor issues, corrective action issues.

13 So our inspectors have basically been
14 finding these things using the traditional enforcement
15 process and verifying the licensee is adequately
16 addressing those types of findings.

17 CHAIR SIEBER: They use CAD welded rebar,
18 right? And so you would have process controls on the
19 welding process, you inspect things like that?

20 MR. REYES: Right.

21 MR. LESSER: We would; yes, sir, we would.
22 That would be a typical special process that they
23 would use, that's exactly the type of thing we would
24 look at.

25 CHAIR SIEBER: Thank you.

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1 MEMBER ABDEL-KHALIK: Now without
2 mentioning any of the plants, one of the plants we
3 were looking at, they had a hole in the containment
4 and the presumed underlying cause was that there was a
5 piece of wood, a spacer, between the rebar and the
6 containment liner that was left in place. How do
7 these lessons get transmitted to your inspectors to be
8 on the lookout for things like that?

9 MR. REYES: That has happened more than
10 once.

11 (Laughter.)

12 MR. PLISCO: Yes, that wasn't the first
13 time.

14 MR. REYES: You don't always remember the
15 reason, but some of that has been experienced and it
16 has been more than once, but it comes back to the
17 licensee and the oversight by the NRC in terms of when
18 you look before the concrete is poured in this
19 example. In this example, the steel liner was placed
20 and the rebar and then you pour over it and make sure
21 there is no extraneous or foreign material there.
22 That's part of your visual inspection. So the
23 inspectors look at that and are aware of not only --

24 MEMBER ABDEL-KHALIK: Do you codify
25 somehow this process of sort of recording the lessons

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1 learned?

2 MR. PLISCO: For the new reactor program,
3 we've established a program, what we call construction
4 experience and it was modeled after what we're doing
5 on the operating reactor side. So they look at these
6 reports that come in and there's a group that sort of
7 synthesizes the information in headquarters and then
8 they make information available to the inspectors.
9 They can subscribe to certain technical areas, certain
10 topics, and have information forwarded to them. And
11 they also go back and -- our program oversight for new
12 reactors is in the Office of New Reactors, and they
13 will go back and if they see something like that, do
14 we need to go back and look at the inspection
15 procedures, do we need to add something to the
16 inspection procedures. That's their function.

17 And they look for things to communicate to
18 the industry, if they see repeated events or things
19 that need to be provided to the industry. And
20 actually Luis and I were just talking, they just sent
21 information out this week on the topic of new
22 construction. And even though the heavy, the new
23 reactor construction hasn't started yet, they're
24 trying to remind them of some of the old lessons and
25 then as new one reappear in the fuel facility

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1 construction that we thought we had already learned,
2 to remind the industry these are things they should be
3 looking at.

4 MR. REYES: It parallels what we do on the
5 operating side. Generic communications with the
6 licensee and internal systems or knowledge center, all
7 that kind of experience and then a feedback mechanism
8 to 10 CFR procedures, inspection procedures, if we
9 don't think that there was enough items there for the
10 inspection.

11 CHAIR SIEBER: I think it's important to
12 note though that the NRC inspectors do not inspect 100
13 percent. They're present at the site, they may as
14 part of the procedure observe some minor percentage of
15 an operation like that. On the other hand, part of
16 the inspection is to make sure the licensee has
17 adequate FME controls which is what the issue is here,
18 and that there's proper signoffs and people are
19 present, the resources are appropriate and they're
20 looking for the right things.

21 MR. REYES: To reiterate what I said this
22 morning, you're right, we've been trying to do a lot
23 more monitoring of activities. So the list of issues
24 that Mark just went through, we go back when we
25 identify -- it was very early in the process, we're

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1 trying to go and inspect something as soon as the
2 process has been implemented and when there's a new
3 example, rather than wait a long, long time, because
4 then if you have an issue, it just gets more
5 difficult.

6 CHAIR SIEBER: Yeah.

7 MR. REYES: And that's why we're applying
8 more resources to the construction effort. For the
9 new reactors, we're going to have a lot more
10 inspection resources than we did in the '70s and '80s,
11 a significant increase and an emphasis of inspecting
12 early and actual monitoring of activities, plus the
13 record review, trying to hit -- it's hard to witness a
14 whole concrete pour when it goes 24 hours. In the old
15 days, we just sampled. This time, what we're going to
16 do is to have multiple inspectors so we cover more
17 hours.

18 So we have a change in strategy on how the
19 NRC is going to do business for the new generation of
20 construction based on some hard lessons learned from
21 the past.

22 CHAIR SIEBER: I think in the concrete
23 liner issue too, my recollection is that this has
24 occurred four or five times. The one we're looking at
25 now is the smallest that I can recall. I think the

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1 two largest ones were both in Region II a number of
2 years ago, ten years or more. So it's not unique, but
3 the controls have to be in place.

4 MR. REYES: And what happens is you don't
5 want the rebar laying on top of the stainless steel,
6 the steel membrane of the containment, you have to
7 separate it. And what you use to do that has to be
8 the right material, not a two by four. And so that's
9 the issue. You still have to separate the rebar from
10 the form, but you should not use wood.

11 MR. LESSER: And to add to what Loren
12 said, we're emphasizing lessons learned from any
13 source. We have a couple of different initiatives to
14 go through lessons learned of the past construction
15 projects through NUREG 1085, instruct and educate our
16 inspectors on that. We put out an information notice
17 to the applicants to be aware of this. We asked them
18 if they're training their people on it. We challenge
19 our own staff to do lessons learned presentations on
20 various topics even outside of the nuclear industry,
21 just -- anything is wide open that would be relevant
22 to our industry, so general industrial events,
23 accidents, what are the lessons learned, what kinds of
24 things can we gain from those.

25 And even foreign reactor construction

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1 sites. We are going to foreign construction sites.
2 About once a year we send an inspector for several
3 weeks to see what's going on there, try to bring back
4 what's happening there. Is there anything that
5 impacts or affects our way of doing business that we
6 can learn from.

7 CHAIR SIEBER: One of the advantages that
8 NRC has is that they can inspect those sites, so
9 there's an exchange of information that goes on during
10 that inspection process between resident inspectors
11 and transient inspectors, which is a good feature of
12 that process.

13 MR. REYES: We have established a
14 quarterly meeting with INPO also on the new
15 construction. We want to make sure we are sharing
16 with them all the lessons learned that we're learning
17 not only here but overseas to ensure that there's
18 another mechanism through the INPO process back to the
19 utilities as a way to disseminate information not only
20 internally but externally.

21 MR. LESSER: On the next slide, I show
22 that we're also providing support to other projects
23 that are under the ownership of the Division of Fuel
24 Facility Inspection and they've been left there. We
25 haven't taken project lead for these, but the American

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1 Centrifuge project in Piketon, Ohio, although we
2 recently just heard that they may be down-scaling.
3 And so our inspection plans of that project will
4 likely be down-scaling also. But we have done
5 inspections there and the Global Laser Enrichment
6 facility in Wilmington.

7 Again, the project lead remains with the
8 Division of Fuel Facility Inspection because they have
9 an established inspection presence at those facilities
10 and these new initiatives are an expansion, so to
11 speak. So they have the lead, we've been supporting
12 them and will continue to do that.

13 MR. REYES: And the construction of the
14 two projects is very different and that's why we left
15 the lead for the existing with that group in the NRC.

16 In the case of new sites, American Centrifuge, the
17 buildings are there, all they're changing is the
18 internal systems and processes. So it's just an
19 internal system change. There were no structures to
20 add, et cetera, et cetera. So they kept the lead with
21 technical support.

22 And with the Global, it's just one loop,
23 they're just testing one loop with lasers to see that
24 the technology is viable before they go to a full
25 blown.

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1 CHAIR SIEBER: My understanding of that
2 facility is it's more of a -- almost like a laboratory
3 experiment as opposed to production.

4 MR. REYES: That's precisely correct.

5 CHAIR SIEBER: And it's low energy
6 process.

7 MR. REYES: Right.

8 CHAIR SIEBER: Okay.

9 MR. LESSER: We have been gaining a lot of
10 experience in the vendor inspection area which is
11 relatively new for the region. Traditionally,
12 headquarters NRR or NRO has had the lead for vendor
13 oversight inspection activities. And that's still
14 true for reactors. But for fuel facilities, there is
15 no corresponding component in headquarters that looks
16 at vendor and does vendor inspections. And so Region
17 II has picked up that role and we've done some of
18 that, we've gained a lot of experience.

19 There's really two types of ways we're
20 looking at implementing the vendor oversight. One of
21 them is to simply look at the licensee's oversight of
22 a vendor and assess the licensee or the applicant's
23 oversight capabilities. And then another way, a
24 different type of inspection, would be to look at the
25 vendor directly. And of course the different

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1 regulations and requirements are different. So we've
2 had to adapt to that.

3 We continue to work with the headquarters
4 vendor inspection branch to gain experience and gain
5 knowledge on how best to interface with them.

6 CHAIR SIEBER: Before we move into new
7 reactors, we were talking about fuel facilities.
8 There were issues in a Columbia, South Carolina fuel
9 plant that caused some interest at the NRC and
10 otherwise.

11 Could you explain what those issues were
12 and how they were identified?

13 MR. REYES: Are you talking about the
14 material that couldn't be accounted for?

15 CHAIR SIEBER: Yes.

16 MR. REYES: Okay. Whenever you go through
17 the process of taking the UF-6, which is what Columbia
18 does. They take five percent of UF-6 and eventually
19 begin production to come up with a fuel assembly. So
20 they basically take the UF-6, they reduce it, they
21 make a powder, they make a pellet, they make fuel rods
22 and the fuel assembly comes out the other end.

23 Whenever the pellet goes through the
24 processing and they're rejected for whatever quality
25 issue, they go back into a wet process. If there's a

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1 metal oxide, they have to go back to an acid bath,
2 dissolve, extract the uranium and start all over
3 again.

4 In that process, they didn't have a good
5 mechanism to control the material and there was a
6 question about a particular amount of material, how it
7 was controlled. So it was an issue of material
8 control and accountability and the conventional path
9 of that material.

10 CHAIR SIEBER: It was not an issue of the
11 material disappearing? Or was it?

12 MR. REYES: Well, that was one scenario in
13 that how do you know it didn't leave the premises.

14 CHAIR SIEBER: Right.

15 MR. REYES: And that's how we started this
16 process. And those efforts are still ongoing to do a
17 mass analysis of the different systems and
18 investigation into people, et cetera, et cetera. So
19 we haven't resolved that.

20 It does not -- it's not likely that the
21 material left the facility. I'm not sure that at the
22 end we'll be able to say with 100 percent surety,
23 because they did find out they had some situations at
24 the facility that they were not as tight in terms of
25 controls as they could have been. And they're

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1 modifying the facility to do that.

2 Some areas of the facility, you have to be
3 able to leave for industrial reasons, for safety, so
4 you have to have doors that lead you to the outside.
5 And the monitoring of those exits and all that was not
6 as secure as it is today.

7 So that was the real question on the
8 table, how do you know the material didn't leave the
9 premises, and that's what drove our issue.

10 CHAIR SIEBER: This is one of the
11 enrichment materials. So from a strategic standpoint,
12 it's a threat.

13 MR. REYES: The licensee identified that
14 they have a mechanism where every pail or group of the
15 material, if it doesn't move through the facility, a
16 computer will flag it for production purposes to say
17 how come this bucket didn't move to the next stage.
18 And so there was a report from the computer that the
19 bucket didn't move and that investigation led to -- it
20 appears likely that somebody put it in the recovery
21 system, put it in the acid and didn't log properly the
22 transaction. That is the most likely scenario.

23 CHAIR SIEBER: Okay.

24 MR. REYES: We came at it a different way.
25 We came and said show me how you are satisfied that

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1 the material didn't leave the premises.

2 CHAIR SIEBER: I think a violation was
3 issued.

4 MR. REYES: Yes.

5 CHAIR SIEBER: Well, I appreciate the
6 explanation. I didn't know all those details and it's
7 refreshing to learn them. Thank you.

8 MR. LESSER: In moving to new reactor
9 inspection activities, we're doing a lot of work
10 obviously in this area, working very closely with the
11 Office of New Reactors basically to develop our
12 inspection program and the infrastructure and tools
13 that we will need to inspect new reactors.

14 But we've already started some
15 inspections. Some of the pre-licensing activities
16 that NRO conducts, we've supported and participated on
17 -- site audits, site visits, quality assurance audits,
18 geotechnical investigations that the applicant is
19 doing and we want to verify they're being done in a
20 quality manner.

21 Again, vendor oversight inspections.
22 Engineering design verification is one we're working
23 with NRO and the vendors -- Westinghouse and GE, et
24 cetera -- to establish that inspection program, which
25 is primarily intended to take the high level certified

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1 design information and inspect, verify that it's been
2 adequately translated into design documents. So
3 that's -- we did a pilot with Westinghouse, that's
4 just starting.

5 MEMBER STETKAR: Mark, I'll ask you here,
6 I was going to ask you on the next slide. We've had
7 considerable discussions with the staff regarding DAC,
8 design acceptance criteria. And first of all, do you
9 here in the region consider DAC any differently than
10 you do ITAAC?

11 MR. LESSER: Yes.

12 MEMBER STETKAR: You do. Good.

13 (Laughter.)

14 MEMBER STETKAR: The follow up on that is
15 that we have been told that you're currently in the
16 process of writing procedures for how you are going to
17 inspect for DAC-related issues. Where are you in that
18 process? We as a committee have some difficulty
19 getting our hands around how this whole DAC closure
20 process is going to be resolved and where the agency's
21 responsibilities for closing that process lie between
22 the region and between headquarters. So if you could
23 help us from this end, it might be really good.

24 MR. LESSER: Our end of the story.

25 MEMBER BROWN: This is a hornet's nest, I

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1 want to tell you.

2 MEMBER STETKAR: We, by the way -- to make
3 your life a little easier -- we haven't a good other
4 end of the story, so we're looking for an end.

5 MR. LESSER: I think the best answer is
6 probably that the way that DAC will be inspected is
7 still to be resolved. We recognize that some of it
8 may not be ready until after licenses are issued and
9 personally, I know I've been conversing with NRO and
10 our other staff members. We recognize that it's going
11 to be a combined effort between NRO and the region to
12 finally inspect DAC and to ensure that the design gets
13 adequately reviewed by the appropriate people and that
14 the implementation gets reviewed by the appropriate
15 people.

16 I think what remains to be done is exactly
17 how that's going to happen and what the processes and
18 procedures are going to be. That really has not yet
19 been fully vetted and worked out.

20 MEMBER STETKAR: Do you have -- I'm going
21 to put you on the spot here -- do you have any sense
22 of what time frame that resolution will be
23 forthcoming? Because we've been told, you know, that
24 you folks here are indeed writing the procedures that
25 will lead to that resolution, as if it's currently

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1 ongoing in real time.

2 MR. LESSER: No, not exactly.

3 (Laughter.)

4 MR. LESSER: I'm going to talk about it a
5 little bit. We've been writing plans -- I'll call
6 them inspection plans -- to inspect ITAAC and ITAAC-
7 related activities.

8 MEMBER STETKAR: And that would be the
9 second half of the DAC, if you want to separate that,
10 the way the design is implemented in the field.

11 MR. LESSER: We have -- in fact, the parts
12 on let's say for example instrumentation and controls
13 which has DAC involved. We've put those off. We
14 haven't started writing those yet because we recognize
15 there's not a lot you can do with it right now and we
16 do need to work with headquarters. I can tell you
17 that the way headquarters is currently looking at some
18 of these is they're looking at the software design
19 life cycle. As a vendor reaches a certain milestone
20 in that life cycle, they signal to the NRC they're
21 ready for inspection or audit in that area and NRO
22 currently has the lead for looking at that. And we're
23 participating and supporting those.

24 And again, how that -- some of that, my
25 understanding, may not be resolved, may not be

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1 completely ready for inspection until close to fuel
2 load, especially in the digital I&C area.

3 MEMBER STETKAR: I guess the reason I
4 asked is that the plans -- the process for resolving
5 DAC and the procedure for doing that to the agency's
6 satisfaction could have an important impact on the
7 timing of the actual submittals, whether it's post-
8 design certification, pre-COL; post-COL, pre-fuel
9 load. There are different levels of responsibility
10 that come into play. And we've been trying to
11 understand how that process will work.

12 I mean we've been told there are some --
13 we heard, you know, one set of opinions that says
14 well, because of the way the process at one time was
15 envisioned, that DAC resolution would fall into the
16 scope of engineering design verification, which is
17 simply as-built meets plan, but there seemed to be a
18 gap about making sure that indeed the design met the
19 design plan. So that's why we've been quite concerned
20 about understanding how that process really will work.

21 And I guess we know the status, the question is when
22 will that process have a little bit more meat to it.

23 MR. SHUKLA: Girija Shukla. Can I say
24 something?

25 MEMBER STETKAR: Sure.

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1 MR. SHUKLA: I'm Girija Shukla with the
2 ACRS staff. The real question of the committee is
3 that DAC was needed because of the lack of completion
4 of the design and right now the way we understand that
5 the DAC will be closed to inspection process. The
6 problem is that you cannot do an inspection and make
7 sure that it gets the same kind of view that a design
8 of a new process will get. For example, you cannot
9 test the independence of digital I&C for testing. So
10 the committee's concern is to make sure that somehow
11 we have the same review of the design as we would have
12 done if the design would have come in front of us.
13 Just before the fuel load if you do this, it may not
14 have the same rigorous review. So the committee is
15 looking for some way where we can have a balance of
16 regular design review plus inspection activities to
17 make sure the design is a quality work. There's a
18 letter coming from the committee on this.

19 MEMBER MAYNARD: It's probably better for
20 the committee to describe what the committee's
21 concerns are.

22 MR. PLISCO: Yes, but we have the same
23 concern, I'll start with that. You know, from the
24 inspection standpoint, we know from history that doing
25 design reviews during inspections is not a good thing.

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1 CHAIR SIEBER: That's right.

2 MR. PLISCO: It doesn't work. We went
3 through some of that in the '70s and '80s when they
4 did design as you go and while you're trying to look -
5 - it's really not where you want to be.

6 So as Mark was saying, we're trying to
7 work out with NRO -- we've been watching this for a
8 couple of years now obviously and when it first
9 started out, it was -- I mean DAC made a lot of sense
10 and then we heard, you know, we'll work DAC out by COL
11 and now that's not happening. And now it's moved into
12 the inspection arena, post-COL. And we agree
13 completely.

14 MEMBER STETKAR: Well you say at some time
15 in the future, but, you know, even as we speak, we're
16 having subcommittee meetings looking at a COL for a
17 particular applicant.

18 MR. PLISCO: Right.

19 MEMBER STETKAR: So regardless of what you
20 may think in time frame in terms of actually starting
21 construction, indeed the licensing process is in fact
22 proceeding.

23 MR. PLISCO: Yeah.

24 MEMBER STETKAR: On a design that does
25 have a large amount of DAC.

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1 CHAIR SIEBER: Well, it's even worse than
2 that because it depends on what the DAC is about. For
3 example, a DAC on piping is, from a design standpoint,
4 probably simpler because there are fewer constraints,
5 than a DAC on digital instrument control where you
6 have a lot of constraints that are expressed in the
7 abstract. And the issue that I see is that the skill
8 set required to do a design review is substantially
9 different than the skill set required to do a
10 construction inspection.

11 And I think it's an area where ACRS has to
12 assert itself.

13 MEMBER BROWN: I'm working on that.

14 CHAIR SIEBER: I'm thinking about it and
15 if my 75th birthday doesn't come too quick, I probably
16 will put in a lot of input on it because I think it's
17 an area that is complex from a regulatory standpoint.

18 MEMBER MAYNARD: The difference between
19 NRC staff and the ACRS is you get another chance to
20 look at this. We're being asked to approve something
21 that we don't have another shot at and that's why
22 we're so interested in the process for approval,
23 because we're not a part of that process. You guys
24 get a chance to take a look at it again.

25 MEMBER STETKAR: At the COL stage.

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1 CHAIR SIEBER: And we find it difficult to
2 approve something that is nebulous.

3 MEMBER BROWN: Did you notice my restraint
4 through all this?

5 MEMBER STETKAR: Let's don't talk about
6 that.

7 MEMBER BROWN: I'm done.

8 MR. PLISCO: And as Luis said, our concern
9 is, our strength is looking at implementation and not
10 --

11 MEMBER BROWN: We've had that discussion
12 in a couple of committee meetings and when I came on
13 board a year and a quarter ago, it was the idea that
14 DAC was put in place for digital I&C was because the
15 technology was moving so fast that you just couldn't
16 define the product, which is absolutely flawed and
17 fallacious. I'm not speaking for the committee right
18 now, I'm speaking for myself and 35 years of working
19 with this stuff, probably before the civilian industry
20 ever got started with it.

21 But that's my opinion, because it's an
22 architecture dependent thing in the software world
23 that you can get your hands on and people are not
24 facing that. Jack was right on when he talked about
25 the skill set. You echoed that, Jack -- John echoed

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1 that and so did Otto relative to you can't do this at
2 the COL stage. There's a design issue and then
3 there's this execution of pulling the cabinet out of
4 the vendor after the design is approved, the software
5 is qualified, it's ready to go. You stick it in the
6 plant, you make sure the wires are connected in the
7 right place and you confirm that the label, the
8 version of the software, is okay. And somebody -- you
9 don't look at the software, you know the labeling of
10 the software as is per the design. That's my opinion
11 of what the regional inspection -- whether it will all
12 come out that way or not, I don't know, but the other
13 comments were maybe they've been listening to me a
14 little bit. Either that or they came to that
15 conclusion on their own because they're all smart guys
16 too.

17 That's a big concern of mine, is on the
18 design side. We're losing it and of all the stuff
19 we've reviewed, me personally, I am receiving a very
20 squishy, mushy concept of what these designs look like
21 and to me it's very concerning. I won't say
22 unsatisfactory, I will just say concerning.

23 CHAIR SIEBER: Maybe I can sum up --

24 MEMBER BROWN: Problematic, as George
25 would say.

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1 CHAIR SIEBER: -- our feelings. We're
2 uncomfortable with the process and it depends on what
3 the area is. I personally -- not speaking for the
4 committee -- intend to pursue it as do a number of
5 other persons until we get a position that actually
6 has grassroots implementation pathways to it, which
7 right now I don't -- I can't figure out what they are.

8 MEMBER BROWN: We don't see them anywhere,
9 they're not on the table.

10 CHAIR SIEBER: So with that being said,
11 maybe we ought to move on. We could actually still be
12 here over the weekend on this one thing.

13 Yes, sir?

14 MR. HACKETT: If I could add, because I
15 don't think it's come up in this discussion --

16 THE REPORTER: I'm sorry, sir, I can't
17 hear you. Can you stand up a little bit closer. And
18 I don't know what you said your name is.

19 MR. HACKETT: Oh, I'm sorry. My name is
20 Ed Hackett and I'm Director for the ACRS and I just
21 wanted to mention for the record that the committee
22 has just recently issued a letter on this subject. Has
23 caused some concerns in response from NRO, we're
24 meeting with NRO next week, to start the dialogue on
25 what this may look like ultimately. I just wanted to

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1 point that out for the record.

2 MEMBER BROWN: Is this the ITAAC closure
3 issue?

4 MR. HACKETT: Yes, ITAAC closure.

5 MEMBER BROWN: Okay.

6 CHAIR SIEBER: Thank you. So anyway,
7 you've reached one of our boiling points, but it's not
8 your fault.

9 MR. LESSER: I mentioned foreign
10 construction site visits is another one of our goals
11 and we've been to Finland, we've been to Taiwan,
12 India. We have plans to go elsewhere.

13 The next slide, I briefly mention the
14 manual chapters that are governing our inspection
15 program, which we are training on and learning the
16 ITAAC-related inspections. Manual Chapter 2503 is our
17 governing inspection manual chapter on ITAAC-related
18 inspections. And I think this may be what you've
19 heard about. We've taken the ITAACs that have been
20 grouped into families and ranked according to priority
21 and we are developing ourselves inspection plans on
22 what we would do to inspect and close those ITAACs,
23 and that's I think what you were referring to. And
24 basically what we want to do is pick out the actual
25 components, valves, circuit breakers, the actual SSEs

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1 and the numbers, try to quantify how much we would
2 need to inspect, put that down on paper. And we're
3 having inspectors do those. We've made substantial
4 progress on the AP-1000 and we're actually going to
5 have some contracts out to finish those out.

6 And that merges the inspection procedures
7 with the ITAAC, with the SSEs that are involved, and
8 gives us a strategy on what we can do. Yes, sir?

9 MEMBER STETKAR: Mark, are you doing that
10 -- you mentioned the AP-1000, are you developing
11 different procedures or strategies for each of the
12 different reactor designs, so you'll have an AP-1000
13 and an SPWR ITAAC closure process?

14 MR. LESSER: Yes.

15 MEMBER STETKAR: Separate process. Not
16 necessarily a separate process but certainly --

17 MR. LESSER: Different strategies.

18 MEMBER STETKAR: -- different strategies.

19 MR. LESSER: Yes. We've made substantial
20 progress on the AP-1000. I would say maybe 10
21 progress on the ABWR because those ITAAC are final.
22 The other designs, the ITAAC are not final yet, they
23 haven't been certified, so we're -- and they haven't
24 been grouped and ranked yet, so we haven't started
25 work on those. But that's part of our plans.

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1 MR. PLISCO: There is a significant
2 difference in how we did the structure of the
3 inspection program last time, because the ITAAC are
4 different for each design and our program is built
5 around the ITAAC. So each design will have a
6 different inspection program because we're looking at
7 different conditions.

8 CHAIR SIEBER: The one you did not mention
9 is the USA 250-R which does not seem to have a lot of
10 DACs.

11 MEMBER BROWN: They don't have any DACs.

12 MEMBER STETKAR: Well, they claim they
13 have one DAC, but they will have ITAACs.

14 MEMBER MAYNARD: They may or may not have
15 a DAC.

16 MEMBER BROWN: They said they don't want
17 it.

18 MEMBER MAYNARD: They don't want it.

19 CHAIR SIEBER: That's more of an
20 evolutionary plant anyway, so the technology is very
21 bare.

22 MEMBER ABDEL-KHALIK: Now the ITAAC
23 inspections are sort of a sampling process, you're not
24 going to inspect each and every ITAAC, but you will
25 inspect presumably each and every DAC. At least

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1 that's our understanding.

2 MEMBER BROWN: No, they're not inspecting
3 every DAC.

4 CHAIR SIEBER: No.

5 MR. REYES: The answer is we don't know.

6 MEMBER ABDEL-KHALIK: You're not sure or
7 no?

8 MR. REYES: The DAC -- we haven't
9 finalized the strategy. We know we're going to do
10 some field verification. The contents of that field
11 verification we haven't finalized.

12 MEMBER ABDEL-KHALIK: The committee I
13 think was told that each and every DAC will be
14 inspected.

15 MEMBER MAYNARD: I would suspect that each
16 and every DAC will be inspected, it's not necessarily
17 stated that every element of the DAC will be
18 inspected. There should only be a few DACs, there are
19 a number of ITAACs but only a few DACs. But as to how
20 many elements of the DAC are 100 percent inspected, I
21 think that's still up in the air.

22 MR. PLISCO: How much of it and exactly
23 what we will be doing, that's the part we haven't
24 decided.

25 MR. REYES: We will do instrumentation and

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1 control, no question about it. The extent of our
2 field activities is what hasn't been finalized.

3 MEMBER ABDEL-KHALIK: Well, I think we
4 somehow need to clarify that and that will become
5 clear once your procedures are finalized.

6 But the other related question, would the
7 sampling process be guided by failure rate data on
8 individual components?

9 CHAIR SIEBER: For ITAAC?

10 MEMBER ABDEL-KHALIK: Yeah.

11 MR. LESSER: There are several
12 considerations that actually are going in and have
13 gone into the sampling and prioritization. First of
14 all, the ITAAC, each ITAAC itself was looked at and we
15 committed to take about the top 30 to 40 percent of
16 them, depending upon the design, to verify that the
17 licensee has completed it. So now each ITAAC may
18 encompass, you know, 100 components, so our strategy
19 is to sample the appropriate number of components
20 within that ITAAC to basically close that ITAAC.

21 And there's a lot of considerations into
22 how we choose samples. There's operating experience, a
23 great example is welds. Okay, there's an ITAAC that
24 says welds will be, let's say conform to the ASME code
25 or they'll have non-destructive examination. Do you

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1 randomly just select welds or do you pick ones -- we
2 put into our strategies things like there are certain
3 welds we want to look at on the AP-1000, that will be
4 the higher temperature welds. Let's make sure we
5 include that in our sample. If there has been repairs
6 done on these, let's make sure that we include
7 repaired welds, because they may be a higher risk. So
8 there's some insights that the inspectors bring to the
9 table, based on their experience, and include into a
10 strategy which would dictate what type of things we
11 want to look at.

12 MEMBER BROWN: In other words, I just want
13 to try to make sure I understood right. Primary
14 system welds are not 100 percent inspected?

15 MR. LESSER: No, sir, not by us.

16 CHAIR SIEBER: The licensee does that.

17 MR. REYES: They're required to.

18 CHAIR SIEBER: Right.

19 MEMBER BROWN: Do you do a 100 percent
20 audit of their weld records?

21 MR. LESSER: No. The licensee is
22 obviously going to be required to do the ITAAC on
23 every single weld.

24 MEMBER BROWN: I understand that point.

25 MR. LESSER: We're going to sample -- our

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1 inspection program is a sampling. If we pick that
2 particular ITAAC as a prioritized or a targeted ITAAC,
3 our process will be to make a conclusion that the
4 licensee has met that ITAAC by sampling a number of
5 components within that ITAAC. So we will do various
6 numbers of types of inspections, either on site,
7 record review observations to do that.

8 CHAIR SIEBER: Do you do any kind of
9 rudimentary statistical analysis to ensure that you
10 have the confidence level that you need for the sample
11 size you've chosen?

12 MR. LESSER: No. We've not tried to
13 advertise that that is statistically based or there's
14 a confidence level. You know, typically what we're
15 starting off is in the area -- with lack of other
16 guidance, we're telling our inspectors let's just
17 start out with maybe a 10 to 15 percent sample and
18 that would be typical of any other inspection we would
19 do. Other things come into it, we may up the sample,
20 it may up it to 50 percent if there's only a few
21 components, you know. But that's basically how we're
22 doing it and that's traditionally how we've always
23 selected samples.

24 MR. REYES: First, we take the ITAAC and
25 they're risk ranked and we layer it that way. We take

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1 those and then we take the samples of the population,
2 whether its welds or whatever that Mark is talking
3 about.

4 There's two ways to do it, one is families
5 of ITAACs are risk ranked, low risk, high risk and
6 then within that, we take a look at the equipment
7 within the system. But I can tell you based on
8 experience like on the welds, we don't check every
9 radiograph, we don't check every weld, but we know
10 which ones are the most significant and we bias our
11 sample towards that. And the same thing with the
12 systems, if the operation of the breaker is essential
13 in that system, we will check that. We will check the
14 installation, we will check the records to be sure it
15 was bought and purchased right, installation testing,
16 et cetera, et cetera.

17 MR. PLISCO: And there's a sample
18 expansion process obviously if we start finding
19 problems.

20 MR. REYES: In the feedback, if we find
21 problems with our samples, then we keep expanding.
22 But we do not do calculations to say that we have
23 confidence, 90 percent confidence or --

24 CHAIR SIEBER: Yeah, 57 of these were to
25 be 95 percent caught. Okay, thank you.

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1 MEMBER ABDEL-KHALIK: Does the definition
2 of the words as-built cause you as much angst as it
3 seems to cause a lot of other people?

4 MR. LESSER: I don't know. I'm not sure
5 what angst it causes other people. To us, as-built
6 means -- and there's a lot of that in the ITAAC -- as
7 the licensee installs it, as it's left in the field,
8 the as-built condition. Typically there's ITAAC that
9 says the as-built condition is in accordance with the
10 design or a configuration.

11 CHAIR SIEBER: And that's good.

12 MR. REYES: A typical inspection, we walk
13 down the system with the drawing and we confirm that
14 the drawing and the as-built condition are one.

15 CHAIR SIEBER: Yeah.

16 MR. REYES: By the way, that usually
17 raises a lot of issues, it's not a clean operation.
18 It feeds back on itself.

19 CHAIR SIEBER: But that's important.

20 MR. REYES: The fuel facilities, for
21 example, that Mark has talked about, there was a big
22 issue in the '70s and '80s.

23 CHAIR SIEBER: But that's important to
24 assure yourselves that the design analysis applies to
25 what's in the plant.

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1 MR. REYES: Yes, we look at the drawing
2 and we want the system where it says, support, pipe,
3 instrument location, whatever it is, we confirm that.

4 Again, on a sample basis. We don't do every system
5 from A to Z. We pick the right systems though.

6 MEMBER STETKAR: To follow up on Said's
7 question, the genesis of that discussion was it seems
8 as though some vendors want to define as-built for
9 specific equipment as the condition in their
10 manufacturing facility rather than the condition
11 installed in the nuclear power plant. In other words,
12 that your inspection of the as-built equipment might
13 be done at the vendor's facility and that perhaps the
14 verification would be simply, you know, whether
15 something was welded in place or bolted to the floor
16 or something like that. You would do a sample that
17 that thing was bolted to the floor or welded in place.

18 But that the as-built inspection would not
19 necessarily be inside the eventual nuclear facility.

20 Have you run across that at all?

21 MR. LESSER: It's a good question. Some of
22 this is --

23 MEMBER BROWN: There was an adjunct to
24 that, it could also be based on records of the vendor
25 of their oversight and inspection, but not necessarily

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1 you did it, but there are plant inspection records.

2 CHAIR SIEBER: Yes, but manufactured
3 products don't usually show those kinds of emphasis
4 compared to the field kind of products like pipe
5 welding, vents and drains, supports, hangers.

6 MEMBER BROWN: I don't know. We've had,
7 you know, pressurized piping pieces where they get
8 measured and fitted up in the shop, they're measured,
9 they meet all the specs. They bring them down, they
10 put them in and when they finish and the welds
11 themselves change the dimensions, change something.
12 The reactor vessel head now will fit or not fit
13 because of some dimensional change based on some weld
14 repair they made. And yet it was, based on the
15 records, okay. So I mean that's what gave me angst
16 when we were talking about this at the full committee
17 meeting. Things can change from the facility where
18 they built these components. Once they're installed,
19 just based on the transportation and installation.

20 CHAIR SIEBER: That's part of the QC
21 process.

22 MR. LESSER: I think we're anticipating
23 some ITAAC may be done by the licensee at modular
24 fabrication facilities.

25 CHAIR SIEBER: Yes.

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1 MR. LESSER: We may complete a weld, do
2 the NDE on the weld and claim that in the ITAAC and
3 our role would be to verify that process and to verify
4 that we would go to the fabrication location. If
5 that's later shipped, you know, our role would be to
6 verify the ITAAC remains valid. Like you say, if
7 something changes on that, the ITAAC perhaps would no
8 longer be valid.

9 You know, I think we're going to have to
10 see how that plays out, but that will be certainly
11 something we would want to maintain, make sure the
12 licensee is maintaining configuration control and
13 control of their ITAAC, because they're the ones that
14 are going to have to certify that the ITAAC is met on
15 each one.

16 CHAIR SIEBER: Well, there are a lot of
17 issues associated with ITAAC and DAC and I think we're
18 just now putting our arms around it to decide how
19 we're going to deal with it. And I think there are
20 some challenges because there's a lot of work hidden
21 under these phrases. But what I do sense among
22 ourselves and the regions and people in the field,
23 there is an understanding of the challenges that are
24 involved in DAC and ITAAC and we will pursue as best
25 we can clarifications so that we'll understand what it

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1 is we're doing.

2 And with that, I think we could move on.

3 MR. LESSER: Just to quickly summarize
4 other things. We're working closely with again the
5 Office of New Reactors for infrastructure development
6 and we're involved in writing inspection procedures,
7 coming up with the infrastructure in which we will
8 document inspections, inspection scheduling, working a
9 lot with the applicants and the vendors to understand
10 their ability to communicate scheduling and
11 construction information to us, developing things like
12 enforcement policy. So a lot of work going on there.

13 And finally, I'd like to just briefly also
14 talk about our commitment to supporting the operating
15 reactors in the Center for Construction Inspection.

16 It is our commitment to maintain those
17 qualifications of inspectors who have been qualified
18 to be inspectors on operating plants. To maintain
19 those qualifications, they will continue to
20 participate in activities and refresh their training
21 and participate in ROP inspections as requested or as
22 needed. It supports the region, NRC and also
23 maintains their proficiency.

24 We've committed to digital instrumentation
25 and controls inspection report to the operating

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1 plants, the modifications that are currently being
2 planned, to support their role, the Division of
3 Reactor Safety and the Division of Reactor Project's
4 role in inspecting those and in things like emergency
5 preparedness.

6 So in summary, that is just kind of a
7 summary of the activities that are going on in the
8 Center for Construction Inspection.

9 Any other questions for me?

10 (No response.)

11 MR. LESSER: I'll turn it over to Mr.
12 Wert.

13 MR. WERT: Well, good afternoon. My name
14 is Leonard Wert, I'm the Director of the Division of
15 Reactor Projects here in Region II. And I've
16 organized this portion of the presentation to address
17 specifically the questions and topics that were
18 provided to us regarding the operating plants.

19 And right up front, I want to share with
20 each of you that we actively solicited inspection
21 staff input to answer the questions and address the
22 topics that you asked. Particularly related to the
23 effectiveness and current operating plant performance.

24 We actually distributed the questions through the
25 chain of command out to the branch chiefs and then we

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1 actually held face-to-face discussions in our
2 inspector counterpart meetings in small group sessions
3 to discuss the answers.

4 But I just wanted to make sure that you're
5 aware that my presentation incorporates direct
6 feedback that we got from the inspection staff and was
7 not just written from a management perspective.

8 I actually got several inputs from seeing
9 some of my senior inspectors directly.

10 So moving on to the operational topics
11 that you asked about. The first question that was
12 asked regarded the current ROP -- reactor oversight
13 program -- process performance for Region II reactor
14 licensees. And you asked discussion about the
15 baseline inspection program, is it identifying the
16 right issues and has the application of the ROP
17 evolved over the years or is it in a steady state
18 situation.

19 So on that topic, I would mention that 29
20 of the 33 operating units in Region II are in the
21 licensee response column, they're the action makers.
22 We have four units traveling in the regulatory
23 response column and three units, which are
24 incidentally all located at one site, that have an
25 open substantive cross-cutting issue. So that's from

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1 a high level perspective, the overall performance of
2 the operating facilities in Region II.

3 Baseline program effectiveness. We think
4 the baseline program is effective and I would hold out
5 to you examples where our inspectors continue to
6 identify safety issues. Without going too far into
7 the details, some examples of those that recently
8 occurred -- and these are within the last several
9 months -- and they're not an inclusive list.

10 We recently identified an issue with tech
11 spec compliance on increased reactor coolant system
12 leakage at an operation BWR here in Region II. In
13 fact, the senior resident inspector actually convinced
14 the licensee that they were in the shutdown limiting
15 condition for operation action statement and
16 effectively ensured that the licensee complied with
17 the tech spec requirement.

18 Another example, and we have two examples
19 of this, where we went and reviewed the licensee's
20 root cause analysis that was presented as supporting
21 documentation for a licensee event report,
22 particularly of reactor trips, and determined that in
23 two cases particularly, the licensee did not come up
24 with the correct root cause and went back to the
25 licensee to provide that feedback and the licensee

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1 subsequently revised its corrective actions. Not
2 necessarily significant and earth-shattering issues,
3 but they do a lot of things for us -- adds credibility
4 to our inspection program, causes the licensee to sit
5 up and take notice.

6 Another subset of issues we discovered or
7 we have identified recently is maintenance
8 deficiencies, and these are usually largely in the
9 area of work controls. People working on systems
10 without proper work authorization. We recently had a
11 diesel generator fuel leak where a licensee
12 maintenance worker went out and did some maintenance
13 on that outside the work control process and actually
14 made the leak worse and caused the diesel to be
15 inoperable on a subsequent surveillance test.

16 That's just some of the examples that
17 we've had. On the maintenance deficiencies, a finding
18 that we recently -- particularly was noteworthy to me
19 was one of our inspectors actually was watching the
20 licensee start up a diesel after an extended outage of
21 the diesel, and he noted that they did not open the
22 circuit board valve or it didn't appear open to him,
23 before they started the diesel. So the licensee was
24 pretty appreciative at that point.

25 MR. REYES: Saved the engine.

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1 (Laughter.)

2 MR. WERT: But those are just some
3 examples of some of the things that we've identified.

4 Now I'd also like to point out that not
5 only --

6 MEMBER BROWN: Did you go do a root cause
7 for that? Did he just not pay attention, didn't read
8 the procedure, didn't remember what he was doing, was
9 ignoring the procedure -- is that fed back? What do
10 you do with that?

11 MR. WERT: Well, let me try to answer that
12 question by what we -- our expectations of all the
13 licensees for all inspector-identified issues. Is
14 that they enter them into their corrective action
15 program and depending on the significance of that --
16 this one was pretty significant -- the licensee does a
17 graded approach in their corrective action program and
18 does a root cause or maybe a current cause evaluation.

19 But they did get to the bottom of why it happened.
20 And we dispositioned a finding. And I'm going to talk
21 more about that later, about whether it's important or
22 not.

23 I did want to point out that not all these
24 issues -- some of the examples I was talking about
25 leads you to believe this is all on-site inspectors,

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1 the residents. But also our Division of Reactor
2 Safety inspectors that go out on the team inspections,
3 particularly our component design basis inspections,
4 they also identify findings. In fact, we recently had
5 a team at one of our facilities, boiling water reactor
6 facility again, and they had identified several
7 potentially significant electrical bus issues.

8 The licensee addresses all findings. They
9 put them in their corrective action program like we
10 talked about.

11 We start with an issue of interest and we
12 proceed through that. That could be an inspector
13 observation, that could be just something that we saw
14 when we were looking through the corrective action
15 program documentation. We process it through our
16 process, which is fairly rigorous, to determine if
17 it's a performance deficiency. Then how significant
18 is the performance deficiency, and then we also
19 determine if their enforcement is appropriate.

20 The safety significance with many
21 observations actually results in the large majority of
22 inspector-identified issues are not even documented.
23 They don't appear in inspection reports, they're not -
24 - they don't reach the level of findings. However,
25 the licensee, as I talked about earlier, enters them

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1 into the corrective action program and they typically
2 initiate actions to address the issue. And I might
3 add, as well as why did their process fail to identify
4 it before we identified it. We looked for that to be
5 addressed in the licensee's corrective action program
6 as well. And I would hold out to you that this does
7 contribute to increased reactor safety.

8 One of the things that there was a
9 question asked was are we identifying the right issues
10 and I think I got this feedback from even my
11 inspectors that are not overly enamored with the ROP
12 and they liked the old way of doing business. They
13 still acknowledge that the ROP does focus both the
14 licensee and us on the risk significant issues. We do
15 tend to not put as much attention on the lower risk
16 issues and move on to the higher risk issues.

17 MEMBER STETKAR: You guys feel pretty
18 comfortable using the risk significance indicators?
19 Your inspectors are pretty familiar with the process?

20 MR. WERT: Yes, and we do feel pretty
21 comfortable with it. I think certain ones are a
22 little more comfortable with it than others. My
23 counterpart on the Division of Reactor Safety side
24 would probably tell you that the Appendix F, the fire
25 protection FTP is a little bit more complex. That's

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1 what you're referring to, the FTP process?

2 MEMBER STETKAR: Not anything specific, I
3 was just trying to get some feedback.

4 MR. WERT: But our inspectors are very
5 aware of -- if I go to an operating plant, for
6 example, they're very aware of the dominance for ...
7 They know what the sets are. In fact as an inspector
8 even 20 years ago, when I was in the field, I used the
9 PRA to determine some of my inspection templates. And
10 our inspectors are pretty savvy with that.

11 We also have a -- we actually have a risk
12 table that we utilize here in Region II that we even
13 know if a licensee loses a diesel generator or the
14 licensee in the middle of the night gets a steam
15 generator tube rupture event, we know what specific
16 things we have to ask about the plant to determine at
17 least in a rough way, the risk of the event.

18 MEMBER STETKAR: That helps, thanks. It
19 sounds like though you said you're still struggling a
20 bit in the fire protection area, but that's not
21 surprising.

22 MR. REYES: We have recalculated certain
23 typical scenarios at 3:00 in the morning -- the reason
24 we did that, I'm not that intelligent, but at 3:00 in
25 the morning, I wanted to know if I had a phone call of

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1 a particular scenario, what was our calculated risk
2 which dictates our reaction to it. And so the staff
3 uses it, we use it. Our level of comfort with using
4 that is significantly increased.

5 MEMBER BROWN: Is that across all regions?

6 MR. REYES: No. No other regions have the
7 table that I'm referring to. We felt a need here and
8 we developed that, I don't know if --

9 MR. WERT: We did share it with the other
10 regions.

11 MR. REYES: We share everything.

12 MEMBER STETKAR: You'd have to do it for
13 each plant.

14 MR. REYES: I cannot tell you if it has
15 been done for each plant, but the other regions are
16 aware of what we did.

17 CHAIR SIEBER: Well, one insight, I've
18 been working on an operating experience process
19 recently and one of the interesting things is if you
20 count events and just record the numbers of different
21 types of events and then calculate the risk of events
22 and then plot those chronologically, you find out that
23 you can have a lot of events with relatively little or
24 no risk and then there will be in some years where
25 there weren't very many events and you look at the

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1 risk number, it's higher enough to get your attention.

2 So using risk as a basis for enforcement and for
3 response I think is essential. That's a good
4 initiative on your part. I was surprised at the
5 results that I got when I went through that exercise.

6 MR. WERT: Also there was a question asked
7 about the ROP baseline evolution, is it moving along
8 or is it steady state. And I would say that the
9 baseline program is flexible and it continues to be
10 refined. And there are some examples I put up there.

11 When emergent safety issues are
12 identified, we have temporary instructions that we
13 utilize and we also might use a generic letter to
14 conduct follow up on specific technical issues. I
15 think that's an example how the ROP is accommodating.

16 Oftentimes, part of those TIs or maybe a generic
17 letter gets subsequently inserted into the inspection
18 procedure so the inspection procedure itself actually
19 changes to capture the issue.

20 Of course, experience and incidents do
21 lead to changes, we all know that. Even in just how
22 we implement the ROP, the rigor with which we
23 implement the ROP. Like for example, the allegation
24 process was significantly strengthened after the Peach
25 Bottom lessons learned.

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1 We do participate in the formal ROP re-
2 alignment process. That is a formal process that has
3 a written manual chapter that guides how we do that.
4 It's on a periodic, every two or three years we go
5 through. The program office reads it where every
6 inspection procedure is evaluated. We look at the
7 statistics like how many hours were put into that
8 inspection, how many findings were generated as a
9 result, what does the inspection staff consider --
10 inspection staff input is very much considered in the
11 process.

12 And then we make determinations about how
13 to revise that procedure. That procedure is actually
14 ongoing right now for the next revision for the fiscal
15 year 2010. And in fact, one of the large changes will
16 be that we're now doing some interim security checks
17 that we do as resident inspectors, and that will be
18 formalized through an inspection change. That's one
19 of the changes that's coming about when we look at the
20 program.

21 And also I would point out the safety
22 culture aspects, the way we handle the safety culture
23 aspects, the ROP has certainly evolved and continues
24 to evolve in that direction.

25 Staff input, inspection staff input, as I

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1 told you earlier, we actively solicit input. The more
2 specific input we got was that several inspectors
3 think that we should have more in-process inspections
4 of maintenance activities and also engineering
5 activities. And there is some support for that at the
6 management level too. And I would say -- I gave you
7 some examples where maintenance work control processes
8 seem to be -- we've recently identified quite a few
9 issues in that area. So that's an area that we're
10 looking at.

11 The ROP does look at that area mostly
12 through the back end. We look at post-maintenance
13 testing, we look at other parameters with the thought
14 being that's when the safety-significant issues would
15 show up. But in fact, we've actually identified quite
16 a few deficiencies even in the area of post-
17 maintenance testing, which gives us some concern.

18 MEMBER ABDEL-KHALIK: How about the area
19 of engineering, what do you have in mind there?

20 MR. WERT: Well, I'm not -- the Division
21 of Reactor Safety is actually where we usually do the
22 inspection of engineering and we do inspect some
23 engineering activities of course through the component
24 design basis inspections and other inspections that we
25 do. Review of 5059s, that's an area that we look very

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1 close. But there are some inspectors that would like
2 to see us do more work in looking at the details of
3 calculations, like voltage drops for transformers and
4 electrical bus transfer speeds.

5 I think we do quite a lot of that, but
6 it's usually targeted, it's a very narrow focused
7 area.

8 MR. REYES: But there's no significant
9 change to what we're currently doing in engineering.
10 If that was your question. No push at the present
11 time to significantly change what we're doing which is
12 the engineering inspections we do every three years
13 and then the 5059 changes that Len was referring to.
14 No significant changes in that approach.

15 MEMBER ABDEL-KHALIK: Thank you.

16 CHAIR SIEBER: There are things that drive
17 licensees into beyond normal regulatory response. For
18 example, greater than green findings can get you
19 there; greater than green in the mitigating system
20 performance can get you there. It would seem to me
21 that the mitigating system performance indicator has
22 become a significant factor in the overall safety and
23 performance rating of plants over, for example, the
24 last 10 year period. Is your observation consistent
25 with my view of that?

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1 MR. WERT: Yes, I would agree with that
2 and I think the inspection staff would agree with
3 that. I think our SRAs would agree with it and that's
4 important because they understand more about MSPI than
5 I do.

6 CHAIR SIEBER: Does that in any way
7 reflect on the inspection program? In other words,
8 you don't really get in trouble until you start having
9 events that haven't been found through inspections.
10 Maybe that's not a great question to ask but --

11 MR. REYES: I'll give you a reflection on
12 31 years with this organization doing inspections.

13 CHAIR SIEBER: Okay.

14 MR. REYES: The licensee's performance has
15 a level of sophistication today in the industry like
16 never before.

17 CHAIR SIEBER: I agree with that.

18 MR. REYES: And the reason the ROP works
19 is as an enabler, you have that performance.

20 CHAIR SIEBER: Okay.

21 MR. REYES: I don't necessarily agree that
22 that system would have worked 20 years ago or 30 years
23 ago. But that combination of factors I think is what
24 needs to occur in performance.

25 CHAIR SIEBER: That's an excellent answer.

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1 MR. REYES: And I think you're going to
2 hear here in a minute about how that's being reflected
3 on safety, actual safety changes in the plant. That
4 is a success.

5 CHAIR SIEBER: That's a great answer.

6 MR. REYES: You see what I would refer to
7 as more enlightened organizations on the same sites
8 making modifications at the stations that improve or
9 reduces the risk and improves safety and actually
10 improves the operational flexibility.

11 Len is going to touch on some examples and
12 we're going to talk a lot about it if that's something
13 you're interested in.

14 CHAIR SIEBER: Thank you very much,
15 appreciate that, good insight.

16 MR. WERT: I also wanted to just spend a
17 couple of minutes talking to you about something
18 that's very near and dear to me. Basically what we do
19 in the regional office is we focus on the quality of
20 the implementation of the ROP. And I think I'm
21 preaching probably to the choir here a little bit, but
22 having a period without a significant safety issue or
23 incident really doesn't mean that a serious safety
24 issue cannot develop tomorrow. And that's something
25 that we discuss a lot at our meetings and it's just

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1 foremost in my mind. I talk with the branch chiefs
2 all the time on that, that we and the licensees must
3 remain vigilant against safety issues that could creep
4 up.

5 One of the ways that we do this is the
6 Region II management actively focuses very closely on
7 the quality of the inspection samples and what I refer
8 to frequently as the integrity of each inspection
9 sample. We talked to you earlier about the sampling
10 process that the NRC utilizes, we're pretty much
11 constrained with that. We'd have to have quite a much
12 larger inspection staff if we were not going to pursue
13 that.

14 So what I do in my job is concentrate very
15 closely on what is the quality of each and every one
16 of those examples. And let me give you an example of
17 how we do that.

18 We look at the ROP minimum baseline
19 activities. We're required to complete so many
20 samples.

21 CHAIR SIEBER: Right.

22 MR. WERT: If the estimated level of
23 effort for a particular sample is let's say five to
24 ten hours, we do not want the five hour version every
25 time. That's the type of discussion that we have with

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1 our inspectors.

2 And we have the manage, I and my branch
3 chiefs, have to manage the staff resources so that the
4 onsite inspectors are adequately supported, so that
5 they feel they can spend the ten hours or the nine
6 hours or maybe even the 12 hours that they need to get
7 that sample. And we very actively encourage our
8 inspectors to not feel constrained by the inspection
9 procedure time estimates. If it takes them a little
10 bit longer to get the sample, particularly ones that
11 are high risk significance like watching what the
12 licensee is doing when they go in to reduce inventory
13 with a short time to boil -- very active interest area
14 to us and we encourage them to spend more time maybe
15 in that area.

16 And over the last year, one of the things
17 we've done in my division is we have increased the
18 onsite inspection time of some of our project
19 engineers that are based here in the region. We
20 specifically did that to allow the onsite inspectors
21 more inspection time during high activity periods like
22 a refueling outage.

23 So I just wanted to kind of convey to you
24 how we focus on implementation of the program. We can
25 talk a lot about the IPs and samples and the sizes and

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1 are we looking at the right thing, but where it really
2 counts is each and every one of those samples have to
3 be done correctly, not just check off the box.

4 A question you also asked about I believe
5 -- the next area was for Region II plants that were
6 beyond the licensee response column. And the
7 questions you asked are the issues that are associated
8 with these plants considered plant specific or do they
9 have generic implications and are any of them
10 associated with safety culture.

11 So as we mentioned earlier, we currently
12 have four units at three sites that are beyond the
13 licensee response column. The associated performance
14 issues are primarily plant specific. And I'll just
15 give you a little example. Four units, McGuire Units
16 1 and 2, are in the regulatory response column. We
17 will write findings in the mitigating systems
18 cornerstone that involved Criterion 16 violations.
19 They did not correct a significant condition adverse
20 to quality involving the service water backwash
21 system.

22 Oconee Unit 1 is also in the reg response
23 column and that's due to a white finding on initiating
24 events cornerstone. There was a loss of shutdown
25 coolant incident that occurred with a relatively short

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1 time to boil. That involved a procedural inadequacy
2 during a modification activity on the main generator
3 voltage regulator, of all things, during an outage.
4 The procedure had some problems with it and they had a
5 problem with power supplies and had the incident.

6 And the last of the four units I mentioned
7 is Farley Unit 1. They're there because they had a
8 white PI with the MSPI on emergency --

9 CHAIR SIEBER: That was three out of four
10 with performance indicators.

11 MR. WERT: And it was the 1 Bravo
12 emergency diesel generator header that failed during a
13 surveillance test. The licensee did not comply with
14 vendor instructions. The header came with vendor
15 provided tack welds that held it in place, but they
16 were to be replaced by full welds and the licensee
17 failed to do that.

18 CHAIR SIEBER: Okay, now those are your
19 recent determinations. I've looked back over the last
20 number of years and that's sort of consistent with
21 previous years too. Regulatory responses have
22 increased mainly due to performance indicator
23 violations, MSPIs.

24 MR. WERT: Also, as far as the association
25 with safety culture aspects, I would just say in

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1 general that practically speaking virtually every
2 performance issue can be connected to a safety culture
3 aspect. I mean the way they're defined in the Manual
4 Chapter 0305, the definition pretty much addresses all
5 fundamental attributes that are involved in a safety
6 significant activity. So you can generally put them
7 in one bin or the other unless -- and our procedures
8 direct this -- it's not appropriate because it doesn't
9 reflect current plan performance. For example, if the
10 mistake was made five years ago and the licensee has
11 to process that today, that mistake would not occur,
12 we think it would not occur.

13 CHAIR SIEBER: Okay.

14 MR. WERT: And I would point out that the
15 licensee's actions including safety culture aspects
16 are evaluated by us via our supplemental procedures.
17 And those are the 95001, 002 and 003 procedures. They
18 specifically require graded levels of approach to
19 evaluating what the licensee did specifically in the
20 area of safety culture. So they are looked at. And
21 of course you gentlemen know that those procedures are
22 far more diagnostic than the indicative procedures
23 that we use.

24 Potential generic implications. The
25 question asked if we had issues at these plants that

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1 are in the regulatory response column, do we examine
2 them for generic implications. And my response to
3 that would be we examine all findings for potential
4 generic implication. In fact, we examine issues that
5 are below even the level of a finding for generic
6 implications. It wouldn't matter where they are in
7 the action matrix and it doesn't matter the plant's
8 overall performance level.

9 In Region II, we utilize a system we call
10 the Plant Issues Tracking Application, commonly
11 referred to as PITA, P-I-T-A. It's a web-based system
12 that we utilize on a daily basis. The inspectors out
13 at the site can enter in the data of an event that
14 occurred during the night or early that morning,
15 including things like pictures and system drawings
16 that convey what happened. We use that system and
17 display it on the wall in our daily safety meeting and
18 we talk about it. And frequently -- we do this
19 because we frequently find that people from another
20 branch or from another organization outside that one
21 of this inspector over that particular plant, can
22 contribute added value. I've seen that before, did
23 you ask this, did you look over here, those kind of
24 things.

25 We think that that system, PITA,

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1 facilitates to a large degree operating experience
2 information exchange and communications. Particularly
3 our headquarters office has full access to that, the
4 program office, and they frequently utilize that,
5 inputs right out of that system, directly into the
6 operating experience system. And we also, in addition
7 to that --

8 CHAIR SIEBER: Do all regions use PITA?

9 MR. WERT: No, sir. I think it is
10 restricted only to Region II.

11 MR. REYES: They have a morning safety
12 meeting like we do, but they don't necessarily use the
13 electronic web-based tool that we use.

14 CHAIR SIEBER: That's a good tool.

15 MR. REYES: They discuss it similarly, et
16 cetera, et cetera. What happens with this tool is it
17 allows you, like Len said, to have either a drawing or
18 a picture of the incident so you get the synergies of
19 other inspectors that have dealt with something
20 similar bringing questions to the table to make sure
21 we follow it right. And people who have never faced
22 the situation just got a knowledge transfer right
23 there. So we think that the dynamics of the safety
24 meeting are very important.

25 CHAIR SIEBER: Do you foresee this

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1 becoming an agency-wide practice?

2 MR. REYES: Well, I'm not sure the
3 information technology part is, but all the other
4 elements of the safety meeting are the same in the
5 regions.

6 CHAIR SIEBER: Right. That is a good
7 tool.

8 MR. WERT: Moving on to the topic of
9 Region II findings that were greater than green that
10 we touched on a little bit earlier. Essentially the
11 discussion point was does this reflect a trend of
12 enhanced safety operation across the licensees in
13 Region II.

14 And to look at this question -- in fact,
15 one of our SRAs did this, we did an informal review of
16 inspection results from the year 2000 to present, just
17 to look and see how many greater than green findings
18 do we typically identify. And don't hold me to these
19 exact numbers, but we think we identified 33 since the
20 year 2000 and subsequently we've determined that on
21 the average, Region II dispositions about three to
22 four greater than green findings each year. That's
23 useful for us to know if we're on track or if all of a
24 sudden there's a sudden increase in those numbers.

25 All the findings are processed in

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1 accordance with the SDP, significant determination
2 process, and other procedures. The fact that none of
3 the very recent greater than green findings did not
4 exceed the white thresholds, we don't think
5 necessarily indicates enhanced safety operations
6 across the licensees in Region II. We think it's more
7 indicative that the basic overall construction of the
8 facilities is fairly robust, the facilities are held
9 to strong regulatory requirement, the licensees
10 generally in Region II operate the facilities
11 conservatively and quite frankly, many of the
12 licensees as Luis was referring to earlier, are
13 interested in outstanding or excellent levels of
14 performance with their plants.

15 All these factors combined result in, when
16 you put an issue that you've identified through the
17 significant determination process, its significance is
18 limited frequently or often.

19 MR. REYES: And if you translate that to
20 examples, if you make a mistake and you have multiple
21 redundant systems, it doesn't mean you're didn't make
22 a mistake, it's just that the risk implications of
23 that mistake were much, much lower. And so you --
24 that doesn't mean -- you don't want to minimize the
25 fact that a mistake happened, the contributing causes

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1 to that mistake, et cetera, et cetera, you still have
2 to pursue that, but the risk is reduced significantly
3 and therefore, you don't get a yellow or red.

4 MR. WERT: And this slide refers to the
5 area that Luis was discussing earlier. We're seeing
6 Region II licensees -- and I think this is true
7 nationwide -- are taking actions to reduce their
8 overall risk. They are implementing modifications to
9 plant systems. And these are not sharpening the
10 pencil type modifications. These are real hardware,
11 real equipment, in some cases hundreds of millions of
12 dollars that are being spent to reduce core damage
13 frequency.

14 MR. REYES: We're talking about addition
15 of safety pumps, addition of diesel generators,
16 realigning systems to be operated in a completely
17 different way, very significant enhancements to safety
18 and reduction to risk, which if you go back to our
19 original discussion, then that original mistake is
20 going to come much, much lower in risk significance
21 but you still have to address that mistake.

22 MR. WERT: Luis just stole my next three
23 lines.

24 MR. REYES: Sorry.

25 MR. WERT: But some examples of that. We

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1 do have one facility, for example, here in Region II,
2 that undertook significant mods to reduce the risk
3 implications of a high energy line break, a tornado
4 incident or a loss of offsite power incident, all
5 three at that facility. And those are significant
6 modifications.

7 We've had a great number of our facilities
8 install improved reactor coolant pump seal packages
9 because of the realization of what that does to the
10 risk.

11 Another area in which we've seen several
12 licensees do is in the installation of blackout
13 diesels, non-safety related, small diesels that can
14 provide power.

15 And as Luis referred to, changing
16 operations of existing systems. We've actually had
17 licensees that used to operate let's say a system
18 cross connected between two units or maybe not cross
19 connected between two units, and when they did their
20 PRA, they discovered there's certain vulnerabilities
21 just by the way they were operating that unit. And
22 they subsequently changed the way they operate the
23 unit to reduce those vulnerabilities.

24 MEMBER ABDEL-KHALIK: If there are
25 recurring problems, let's say reactor coolant pump

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1 seals, do you go back and inspect the vendors and the
2 way they refurbish the seals?

3 MR. WERT: I guess I should be clear on
4 that. When I mentioned reactor coolant pump seal
5 issues, we have had some reactor coolant pump seal
6 issues here in Region II, but not a large number of
7 those and they were not vendor -- directly vendor
8 related. But the point I was trying to make is that
9 licensees really didn't have any problems with reactor
10 coolant pump seals, the seals that were in there were
11 fine. But they upgraded them, put in, for example,
12 seals that are rated to withstand much higher coolant
13 temperatures, so that the seal will not
14 catastrophically fail if you lose cooling water to the
15 seals.

16 MR. REYES: As an initiating event for
17 loss of coolant. But back to you question about the
18 vendor, if we were to find out a problem with a
19 vendor, any equipment, we would go to the vendor and
20 we have done that in some cases in the past. The
21 recent history with seals is different though. Most
22 of the errors we see are physical installation at the
23 site where they're replacing the cartridge and the
24 seals. That's typically the issue where there's a
25 lack of knowledge transfer and you have to assemble it

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1 a given way, et cetera, et cetera. That's been the
2 recent -- not the manufacturing of the seals
3 themselves or the material in them.

4 CHAIR SIEBER: It seems to me that the
5 seal packages in at least one vendor's plant have been
6 an issue for -- since I was a young man. But I think
7 licensees, including us at the time, when a new seal
8 package would come out, we would install it during a
9 regular pump overhaul because of the risk of a seal
10 failure, that leads to grave consequences. We never
11 had a seal failure but we were close to it if you lose
12 pump cooling water or service water to the pump when
13 the plant is pressurized and hot, the seal is going to
14 fail.

15 And the chance of losing cooling to the
16 seal is not high, but it's there. And so without
17 prompt and accurate operator action, there is a risk
18 there. And I think licensees have recognized that
19 risk all along as well as vendors and tried to modify
20 seals and take actions to give more time, higher
21 degrees of protection and so forth.

22 So those are all positive steps to reduce
23 the risk of a moderate LOCA. So that's been I think
24 the industry practice for some time and continues to
25 be so.

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1 MR. REYES: We've seen a big improvement
2 in that area.

3 CHAIR SIEBER: Yes.

4 MR. WERT: A couple of other things to
5 mention that I think -- you know, licensees are
6 continuing -- and us -- are continuing to identify
7 vulnerabilities and decide what areas they can put a
8 little bit of focus in to reduce risk. And some
9 examples I would hold out is the B.5.b activities and
10 equipment that was put on site as a result of that.
11 And also the NFPA 805. One of the pilot plants for
12 that I recently talked to the vice president and
13 they're contemplating installing a modification for --
14 to have a redundant system for reactor coolant pump
15 seals. Lots of studies for NFPA 805 have shown them
16 where the vulnerabilities are.

17 MR. REYES: We're fortunate or
18 unfortunate, depending on your perspective, that the
19 two pilot plants for 805 are here physically in Region
20 II. So they're learning a lot and we are coming along
21 learning a lot too about the issues being identified.

22 CHAIR SIEBER: I do have a question. We
23 have a couple of minutes extra. In a station fire
24 analysis or plant fire analysis, there are
25 calculations made that show the energy intensity of a

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1 fire and a ceiling plume and all of those things. Is
2 the fire plan inspected by region-based people and do
3 they go through those kinds of fire calculations for
4 example, that 20-foot separation criteria?

5 MR. REYES: Yes, the NFPA code, not 805
6 but others, the bulk of --

7 CHAIR SIEBER: 182.

8 MR. REYES: -- we verify whether there's
9 physical separation, if it's not there, that they meet
10 code for detection and suppression. We continuously
11 do that because you modify the plant and you add
12 sources of heat, or you could.

13 CHAIR SIEBER: Yeah, that's sort of a
14 cookbook kind of a way to deal with it. And the
15 philosophy is that if you detect and suppress, then
16 you won't get the ceiling plume, therefore you won't
17 get as rapid a destruction of cabling and so forth
18 which gives your fire brigade time to get in there and
19 do something about it. But the amount of time that
20 you will survive given a certain level of transient
21 combustibles, which may or may not exist, is dependent
22 on some kind of a calculation. And I was just
23 wondering do they do the calcs or do they just say 20
24 feet and no intervening combustibles?

25 MR. REYES: It varies. Some of the newer

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1 plants, they use a physical separation because there
2 it's much, much easier.

3 CHAIR SIEBER: Right.

4 MR. REYES: The older plants, you have to
5 be much more specific. You end up going with a
6 conservative approach but you have constant detection
7 and suppression, because there's so much intermingling
8 meaning there's not 20 feet of separation. It's
9 interesting that in the two pilot plants under 805,
10 one is a fairly new unit, we licensed it in 1987, much
11 more up to today's standards. And then the other
12 pilot plant was licensed in the early '70s. There's a
13 difference in there and we're getting insights from
14 both of those scenarios.

15 CHAIR SIEBER: Yeah, there isn't much one
16 can do about the older plants as far as
17 compartmentalization and so forth, just because of the
18 civil works and the way they're laid out.

19 Okay, thank you.

20 MEMBER STETKAR: I had a question on
21 something you said earlier when you were talking about
22 priorities for your inspectors. One thing you
23 mentioned kind of caught my ear and that was increased
24 vigilance during reduced inventory status when you're
25 closer to boil, which is a shutdown condition. The

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1 question I had is you mentioned a few examples of
2 people using risk insights to make improvements to the
3 plants in Region II, and of course, all of those
4 examples are from full power.

5 Have you seen folks in your region using
6 any type of risk insights for -- related to shutdown
7 modifications of systems that would address -- even
8 though they don't have formal shutdown risk
9 assessments, which certainly don't exist. Because,
10 you know, your increased vigilance is a risk-informed
11 decision without a risk assessment, because you're
12 aware of a particular vulnerability. I was just
13 curious whether you saw any of that.

14 MR. WERT: Not system modification.

15 MR. REYES: Operationally they calculate
16 their risk through the outage of course, it's pretty
17 high in the beginning, the first 96 hours after
18 shutdown, you're in the red zone for the boiling. And
19 what we have seen is through hard lessons learned,
20 they have realized gee, we were realigning the
21 electrical systems in such a way to accelerate the
22 work during the outage and we didn't realize the risk
23 significance of it. So they have changed, they
24 rescheduled the outage activities and realigned the
25 electrical systems to minimize the risk, especially in

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1 the beginning when boiling is much shorter duration.
2 But no hard wire modifications come to mind.

3 MR. WERT: That's exactly it. We have not
4 seen yet licensees -- you know, a lot of licensees in
5 the old days used to hold this window of three days,
6 we're not going to touch anything. They have not gone
7 that far yet, but they have done what Luis is talking
8 about pretty extensively, yes.

9 CHAIR SIEBER: I've seen some plant that
10 have protected trains. If you're in this operating
11 mode and at these conditions, you're going to protect
12 this set of equipment to reduce your vulnerability and
13 your risk.

14 MR. REYES: That's standard. That is
15 almost a common practice.

16 MR. WERT: And it's also common practice
17 for us to walk down the protected trains, particularly
18 during windows like you're talking about.

19 CHAIR SIEBER: And that's in particular
20 use by the people that write out equipment
21 corrections.

22 MR. REYES: Correct. Going back to your
23 comments, one of the successes in terms of the 90+
24 capacity factor in the industry are driven by several
25 things -- good equipment, good operation -- but by the

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1 length of the outage.

2 CHAIR SIEBER: Right.

3 MR. REYES: So those outages' durations
4 are critical from a business point of view and so I
5 don't see a lot of changes in that direction. But
6 they have done things like to modify the activity
7 level and the sequencing of activities to minimize the
8 risk.

9 MR. WERT: So back to the topic of greater
10 than green findings, to wrap up that topic, I was
11 going to point out that the licensee's actions that we
12 talked about earlier including modifications and
13 changing the way they operate systems to reduce the
14 risk, those modifications are very closely scrutinized
15 by the inspection process. For example, when the
16 licensee split the way they were operating the system
17 between two units, we actually spent a lot of time
18 looking at the operational impacts of that. Would
19 they introduce in a vulnerability that they really
20 weren't thinking about. We spent a lot of time
21 looking at that. We also had the SRAs actually --
22 senior risk analysts -- in the region actually look at
23 their false reading and see if we agreed with what
24 they are doing.

25 So the point that I make to you is when a

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1 licensee does a modification, we closely scrutinize
2 those modifications.

3 And also, as a reminder, I think Luis
4 mentioned this earlier, the supplemental inspections
5 specifically address licensee's actions to correct the
6 root cause of an incident, even if the licensee
7 essentially gets themselves out of the elevated risk
8 condition and they do things to their plant to modify
9 so that if the event occurs in the future, they have
10 reduced risk, we still look at the root cause that
11 contributed to the event of concern, to make sure the
12 licensee has addressed it. And that includes safety
13 culture aspects that they talked about earlier.

14 So the net outcome of all that, we think
15 is a positive thing. It is reduced risk to the public
16 and the environment.

17 The next question area was the ROP
18 treatment of safety culture and specifically you asked
19 for feedback from inspectors on the ROP treatment of
20 safety culture and how is that process working.

21 In general, the inspectors do agree that
22 the ROP safety culture aspects process does provide
23 opportunities for identification and prompting of
24 licensee action before performance significantly
25 degrades. And what I'm referring to there is the

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1 substantive cross-cutting issue process where we tag
2 or assign findings with cross-cutting aspects. We put
3 these in bins and we compare them to specific criteria
4 that are established in the Manual Chapter 305, and if
5 those criteria are met, we issue a substantive cross-
6 cutting issue. That's the process.

7 One thing to point out there is this
8 process has a threshold built in. And the threshold
9 that is built in is that we only assign cross-cutting
10 aspects to issues that are significant enough to
11 become findings -- unless they're greater than green
12 they're not assigned to the licensee as identified
13 issues and that's to encourage the licensee to
14 identify the issues.

15 So an objective assessment of the
16 significance of a deficiency is used to set a
17 threshold and we think this is an important thing,
18 it's a step in how we maintain objectivity in the
19 assessment process. It reduces the chance that the
20 NRC will get too involved in exactly how the licensee
21 is utilizing their assets. For example, how they use
22 the resources that they have. And of course, this is
23 one of the basic fundamental qualities that keeps the
24 ROP distinct from the previous step in the process.

25 However, in putting the threshold in

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1 there, one of the consequences of that is our
2 substantive cross-cutting issue process is based on a
3 very limited sample size, and certainly it's far, far
4 less significant than the number of issues that are in
5 the licensee's corrective action plan. That's
6 something you have to keep in mind.

7 Feedback from my inspectors, some of my
8 inspectors want the ability to document or tag even
9 minor issues and observations. Why not assign a
10 cross-cutting aspect to them, I can see it, they could
11 do it better, that type of thing. And basically these
12 inspectors are typically highly experienced inspectors
13 that know less than outstanding performance when they
14 see it and they become frustrated when they see
15 indications of performance that's not as good as it
16 could be. And sometimes even that performance can be
17 repetitive. A licensee may be putting resources
18 somewhere else and the inspector maybe not see that or
19 maybe he does see that.

20 But if we did that, one of the
21 consequences could be that we would result -- the
22 program would shift and we would end up essentially
23 regulating to maybe standards of excellence. And it
24 could result in the NRC excessively influencing
25 management of a facility in how they use their

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1 resources.

2 So we think that establishing a threshold
3 above the minor issues level does seem appropriate for
4 the regulator and it supports objectivity. One of the
5 consequences of that is that sometimes you can have an
6 ROP assessment or an evaluation of a facility, in
7 other words what column it is in the action matrix,
8 that may appear to an external stakeholder to be
9 different than the evaluation reached by another
10 entity of that same facility; i.e., maybe INPO.
11 That's just one of the consequences.

12 Specifically a question was asked whether
13 30 minutes was sufficient time to perform the
14 corrective action program documents review. And I did
15 receive feedback from my staff that really 30 minutes
16 is not enough time. This particularly is at the
17 multiple unit sites. But I would point out for
18 multiple units, they are allowed a little bit more
19 time, 40 minutes for two units and 50 minutes for
20 three. Still not a significant period of time.

21 But there is some overlap with other
22 inspection activities that are performed. For
23 example, plant status is one resource that inspectors
24 could use that time to attend the corrective action
25 program meetings and also there are hours allotted for

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1 follow up of issues, corrective action program issues,
2 inside specific inspection procedures. So there's
3 more time to look at corrective action program issues
4 than that which is just indicated in that 30 minute
5 document review.

6 And remember what I told you earlier about
7 Region II management, we do not focus necessarily on
8 30 minutes a day. We do not expect an inspector to
9 stop looking at corrective action program documents
10 because he's hit his 30 minutes a day, for example.

11 We just talked about that -- oh, another
12 part of the question was asked, safety culture
13 assessments of Region II plants. I'm not familiar
14 with any NRC performed safety culture assessment of
15 Region II plants. However, I am very much aware that
16 the licensees have done a large number of safety
17 culture assessments and they vary in scope and they
18 vary in exactly what their content is. Many of them
19 are done by third party representatives.

20 And before I leave that -- before I throw
21 water onto that subject, I would point out that even
22 though we haven't done necessarily a safety culture
23 assessment, at every facility, in accordance with our
24 inspection procedure 71152, we do specifically assess
25 the willingness of workers to bring forth safety

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1 concerns to their management and we do this at each
2 and every site on a routine basis.

3 We ask questions during the team
4 inspection of the problem identification and reporting
5 system of the corrective action program, and we
6 specifically meet with individuals on the site and
7 work these questions into our interface with the
8 staff, the licensee staff at the site. And then we
9 make an independent assessment of the safety conscious
10 work environment.

11 We also collect safety conscious work
12 environment data, you know, through routine site
13 visits like for example I go to the site several times
14 a month and I generally ask questions. For example,
15 lately I've been going to the security facilities,
16 talking to security staff. Have you written a
17 corrective action program document, do you know how to
18 do that, do you get a result. All those thing I think
19 are things that we factor into our assessment of the
20 safety culture at the plants, even though we might not
21 go out to do a definite full-blown safety culture
22 assessment.

23 Now regarding the assessments that
24 licensees do of their safety culture, we're often
25 informed of the results of those. They could be

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1 through discussions with the resident inspectors or
2 licensees might provide those to us or talk about
3 those to us in response to a request for information
4 on an allegation, particularly allegations that may
5 involve chilling effects. That's how typically we
6 might become aware that the licensee has done a safety
7 culture assessment and maybe even a little bit about
8 what the results are.

9 Obviously if the results are not good, we
10 encourage the licensees to review the results and take
11 action. And there are several licensees in Region II
12 that are currently dealing with safety culture related
13 surveys that indicate they need to make improvements,
14 and we are monitoring their efforts to make those
15 improvements.

16 Now typically the cases that I'm familiar
17 with, they typically involve specific work groups on
18 site, not necessarily the whole site, or they'll
19 typically involve a specific area like maybe there's
20 not widespread confidence in the employee concerns
21 program. But they'll still come to the NRC, for
22 example.

23 So I don't want to imply that the system
24 is all broke.

25 The central issue that we focus there of

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1 course is willingness to bring forward concerns to
2 licensee management.

3 MEMBER MAYNARD: I'd like to point out,
4 Region II may not have faced this, but there have been
5 plants that the NRC has mandated a third party safety
6 culture assessment. For those, the NRC does get the
7 results.

8 MR. REYES: We get them in a voluntary way
9 from the licensee when they perform them here in
10 Region II. They're not mandated by us, but they sit
11 down with us, share the results with us, tell us their
12 insights and what they're doing about it. So we have
13 a pretty good understanding and we usually have a good
14 understanding because they come up with allegation.
15 But a lot of times we already have insight, we just
16 want to make sure that the licensee has the same kind
17 of issues and is dealing with them.

18 MR. WERT: The next area for discussion
19 was regarding the safety culture of Region II and
20 specifically how do we evaluate the safety culture of
21 the regional organization.

22 And this is not an all-inclusive list but
23 I think we do put a lot of attention on determining or
24 assessing our safety culture. We look at the Office
25 of Inspector General surveys very closely and we pick

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1 out areas of enhancement, we select them and we
2 develop actions to improve our performance in those
3 areas. Of course, we look at the subsequent surveys
4 to see if we have been successful or not.

5 The internal safety culture task force
6 that was just underway and basically just completed
7 their work, we're looking at that report. The 2007
8 NRC employee survey, that one received a lot of
9 attention here in Region II, we went through in close
10 detail, had management retreat discussions on it and
11 again developed specific action items and initiating
12 actions -- and some of them were significant changes
13 to our processes to improve things that our employees
14 had commented on.

15 And also I think as managers we do solicit
16 staff input and feedback in various ways, and here's
17 some examples in which we do that. And these are not
18 necessarily common across all the divisions. You
19 know, each division may do things a little bit
20 differently. We do use feedback forms like
21 counterpart meeting feedback forms, anonymously
22 submitted, and we get some real raw input from some of
23 those sometimes. But we use those and we factor them
24 into our subsequent meetings. We determines sometimes
25 what subjects we need to hold training on, things like

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1 that from those feedbacks.

2 We also use informal calls to individuals,
3 and I'll talk about this a little bit because many of
4 my inspection staff of course is remote located. So I
5 have a process where each quarter, I specifically --
6 if I have not met with that senior resident inspector
7 at that site, I call him and I spent about an hour on
8 the phone talking about how are things going, are you
9 getting what you need, anything we're missing. You
10 know, that type of thing, just an informal phone call
11 to check in with every senior resident inspector at
12 least once a quarter. If I do a face-to-face meeting
13 at the site, I will not do the call. My deputy
14 director does the same thing for each resident
15 inspector.

16 We also do small group meetings, I'll
17 refer to them as small group meetings. And again, the
18 different divisions do this differently, but I might
19 get all my project engineers together in my conference
20 room during lunch time period just to talk, with not
21 the other layers of management necessarily present in
22 the room, just to talk about how things are and what's
23 going on. I do that with my resident inspector
24 development program candidates and senior project
25 engineers, just different groups get together.

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1 We also have a program called "Ask the
2 Regional Administrator", where anyone on the staff can
3 submit a question or an inquiry or even a comment just
4 anonymously through the web system. We assign action
5 items and address those items and close them out and
6 try to make sure that we're responsive to each and
7 every one of those.

8 I think in some respects it's fair to take
9 credit for 360 degree reviews of managers and we
10 actively participate in those. We certainly get some
11 feedback through those.

12 Specifically -- I don't know that I put
13 this on the slide, but we do recognize employees that
14 bring us issues. We hired an inspector from Region I
15 in one case and he got here and said you guys aren't
16 doing enforcement right. When you do a certain type
17 of thing that we were handling in our enforcement
18 process, and we looked at it and we first didn't agree
19 with him, but we went back again because he was pretty
20 insistent and he was right. It subsequently was
21 determined that he was right and we recognized that
22 individual for bringing that question up and we
23 changed our process.

24 I guess another thing that we hold out is
25 we always tell our staff one of our important

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1 activities at the operating reactors is hurricane
2 coverage and we always tell our staff, you know, make
3 sure -- if you feel like your personal safety is in
4 danger, you tell us. And we have had inspectors say I
5 know you asked me to go from Crystal River over to St.
6 Lucie, but I'm telling you I'm on the road right now
7 and this ain't the right thing to do. And so that
8 individual turned around and drove back. We held that
9 up as an example of the right thing to do.

10 I guess I just try to provide examples of
11 where our inspectors come to us and say hey, you know,
12 I know you told me to do that, but that's not what we
13 should be doing. And I believe that that's indicative
14 of a healthy safety culture.

15 And in general, the staff input indicates
16 that Region II's safety culture is currently healthy.

17 I did not receive any -- I received several direct
18 inputs when I asked that question and I did not
19 receive any negative responses.

20 MR. REYES: Before we go to the next
21 topic, I just don't want to leave the impression that
22 everybody agrees with what Len just said. We do get
23 complaints and we do get 1-800 calls through the IG
24 and they do investigate our actions. You know, we
25 look forward to those. If we're not doing something

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1 right, we want to know and we want to fix it. But
2 those avenues are there and they get exercised. So I
3 think those are people using other avenues because
4 they're more comfortable with other avenues but the
5 issue was brought to the table and it was followed up.

6 So I think that's good for everybody.

7 MR. WERT: And the final area that you
8 asked about at operating facilities was the area of
9 engineering inspections. And the first slide here
10 addresses the component design basis inspections and
11 we do identify issues through those inspections. I
12 talked about that earlier.

13 A lot of the issues that we identify
14 typically involve the licensee's rigor in technical
15 evaluations. This is why I think we have received
16 feedback from time to time that the inspectors feel
17 they need to go heavier into this area because there
18 are issues being identified in those areas.

19 Licensees are not taking advantage of
20 previous component design basis inspection results.
21 That was a significant issue for awhile. When we move
22 on to another site, you would find often the same
23 things. And I think a lot of that was abbreviated by
24 the information notice 2008-02 where we actually
25 talked about the issues that were being found, generic

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1 issues, during those inspections.

2 And finally, --

3 MEMBER ABDEL-KHALIK: Do you have problems
4 finding appropriate documentation for the analysis of
5 records, you know, that the analyses had been
6 performed many, many years ago?

7 MR. WERT: From time to time those issues
8 do come up. A vivid example I think would be of the
9 Ocone site, there's an issue with how high flood
10 waters will be on site during external flood events
11 and the licensee had an analysis previously that
12 indicated that water on site would only reach a
13 certain depth. And then there was an interim analysis
14 that was done by another organization that indicated a
15 higher amount of water on site. And the licensee
16 could not provide the initial -- the supporting data
17 for the initial calculation. That would be an
18 example.

19 So yeah, we do run into that.

20 MEMBER ABDEL-KHALIK: So what do you do in
21 a situation like that?

22 MR. WERT: Well, --

23 MR. REYES: We recreate the analysis.

24 MR. WERT: Certainly when we think it's
25 part of the licensing basis, they need to have it.

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1 Kriss, do you have anything to add?

2 MR. KENNEDY: You're absolutely right, it
3 depends on the plant, depends on how old the plant is
4 and perhaps where the calculations were done, whether
5 they were done at the site or whether they were done
6 at corporate. But if it's a critical calculation
7 that they don't have, they have to recreate it.

8 MR. WERT: Kriss Kennedy is the Director
9 of the Division of Reactor Safety and his division
10 runs those inspections.

11 Other engineering inspection challenges or
12 areas. Digital I&C and cyber security. That's an
13 evolving area, I guess to say the least.

14 Development of baseline inspection
15 procedures is underway and also the training of
16 inspectors.

17 We're holding these up as challenges
18 because there are some high hurdles there but we do
19 think we have a path forward and we're going down
20 those paths.

21 CHAIR SIEBER: And the need is fast
22 approaching.

23 MR. WERT: Yes. NFPA 805 inspections.
24 Again, development of the inspection procedures and
25 training of the inspectors, but I think the net value

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1 added out of the NFPA 805 pilot is going to be really
2 tremendous. I was very impressed with the licensee's
3 management of discussion of things that they
4 understand about their plant that they did not
5 understand before.

6 MR. REYES: And the magnitude of the
7 investment in terms of modifying the plant to decrease
8 those risks, millions and millions of dollars. So the
9 insight has driven them to make those capital
10 investments to reduce their risk and have a better
11 program.

12 MR. PLISCO: It's probably worth
13 mentioning too, we talked about it this morning, in
14 the digital I&C area, that's an area where our
15 construction staff is working very closely with the
16 operating reactor staff. You know, we're training our
17 expertise in construction of digital I&C, we're
18 helping out with review and modification as the
19 utilities are converting to digital I&C systems. So
20 we're sharing a lot of skill sets and experience as we
21 go through those on the operating reactor side, to
22 train up the staff so they can work with digital I&C
23 on the construction side.

24 MR. REYES: That ends our prepared
25 remarks. We're open for any questions.

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1 CHAIR SIEBER: Do any members have any
2 follow up questions, besides me?

3 (No response.)

4 CHAIR SIEBER: I have a question that you
5 may or may not know the answer to that came up during
6 our visit to Watts Bar Unit 2. In one of the slides
7 they showed, did not talk about it a lot, was that
8 Watts Bar 2, the slide stated that it was exempt from
9 the aircraft rule. I wondered why it was. And
10 secondly, what's the basis for that, how long will the
11 exemption last.

12 MR. REYES: The rule that was issued is
13 only forward looking.

14 CHAIR SIEBER: Yes.

15 MR. REYES: So now Watts Bar Unit 2, like
16 the rest of the 104 operating units, has to deal with
17 the aircraft in a different way.

18 CHAIR SIEBER: Do certain things.

19 MR. REYES: In a different way.

20 CHAIR SIEBER: Yes.

21 MR. REYES: One is in operational mode and
22 remediations or actions or equipment that they have
23 added. The rule is forward looking and addresses a
24 different way to deal with aircraft.

25 CHAIR SIEBER: Okay.

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1 MR. REYES: The design of the structures
2 and the design of the features. For Watts Bar Unit 2,
3 they deal with it in a different way.

4 CHAIR SIEBER: I understand that, but I
5 guess my confusion was there are certain things that
6 licensees have to do with existing plants.

7 MR. REYES: Correct, they're not exempt
8 from the order.

9 CHAIR SIEBER: They're exempt from the
10 rules, not the order.

11 MR. REYES: They will have the order
12 requirement B.5.b like every other operating unit.
13 They won't have the requirement of the rule on the
14 design of the facility to meet certain requirements.

15 CHAIR SIEBER: Okay. Thank you, that
16 clarifies that issue. I didn't quite make the link as
17 I should have.

18 Any other questions from members?

19 (No response.)

20 CHAIR SIEBER: Well, the agenda now
21 provides an opportunity for any public comments. Is
22 there any member of the public that would like to make
23 a comment?

24 MR. AYRES: Is there anyone on the phone
25 that would like to make a comment?

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1 VOICE: Yes.

2 CHAIR SIEBER: Could you state your name
3 and if you're affiliated with an organization, could
4 you tell us that for the transcript, please?

5 MS. CURTS: I'm Sandra Curts and I'm from
6 Chattanooga, Tennessee and I'm representing a couple
7 of energy group, the Fuller Valley Coalition and the
8 Southern Alliance for Clean Energy and the Blue Ridge
9 Environmental Defense League.

10 CHAIR SIEBER: Okay, ma'am. We have
11 allocated up to 15 minutes of our agenda for public
12 comments. So if you'd like to make your comments now,
13 we would be certainly glad to hear them and get them
14 as part of the record.

15 MS. CURTS: Okay, thank you very much.
16 And I thank you for -- I've listened in for your
17 entire meeting here and I want to thank you for your
18 diligence and attention to the many details that will
19 be involved with the inspection processes as things
20 move along.

21 The reason -- the comment that I wanted to
22 make was really about the meeting on Tuesday, and I
23 and a colleague arrived late to that meeting, and we
24 could not attend because we didn't have the paperwork
25 and I'm just surprised that a public meeting would

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1 require some sorts of forms or something to fill out,
2 which we weren't notified about. And was concerned
3 that if you're going to have a public meeting, it
4 should not be in a place where the public can't
5 participate.

6 CHAIR SIEBER: I'm not aware that you had
7 difficulty, but we will certainly look into that to
8 see what happened and why it happened and make sure it
9 doesn't happen again unless there is some legal
10 requirement that you ran into. But if it is our error
11 or the licensee's error, we certainly apologize for
12 that.

13 MS. CURTS: Watts Bar certainly appears to
14 be a bit of a fortress. I would suggest that any
15 public meetings be held in public places so that it's
16 not so hard for everybody to come in and out.

17 Thank you.

18 CHAIR SIEBER: You're welcome.

19 Any additional comments that you would
20 like to make?

21 MS. CURTS: No, not me.

22 CHAIR SIEBER: Okay, thank you very much,
23 we appreciate your attention to our meeting today and
24 your comments, as always, are important to us, so we
25 thank you very much.

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1 Are there any other public comments to be
2 made at this point in time?

3 (No response.)

4 CHAIR SIEBER: If not, the next item on
5 the agenda is subcommittee deliberations. Generally
6 speaking, we will discuss to some extent any actions
7 that we would take, particularly in the form of
8 written response, either to the EDO or to the
9 Commissioners regarding a licensing action.

10 In this particular case, for this meeting
11 and the Watts Bar meeting, we have basically been
12 performing fact finding to enhance our knowledge of
13 the process and as to how the licensee and staff is
14 dealing with certain issues and perhaps in the process
15 of our asking questions, we telegraph to everyone what
16 our concerns are and that's okay.

17 But this process of subcommittee
18 deliberations is for all of us to share our
19 impressions so that we can consolidate the issues that
20 are of concern to us and in the process of doing that,
21 that gives you an opportunity to listen as to what our
22 impressions are overall. And I'll start with Mr.
23 Brown.

24 MEMBER BROWN: I have no additional
25 comments to make relative to this other than what I

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1 commented before and my thought processes relative to
2 at least the I&C world and the operator training
3 issues for dual plant operations. So that's all I
4 have.

5 CHAIR SIEBER: Dr. Abdel-Khalik.

6 MEMBER ABDEL-KHALIK: First, I'd like to
7 thank the staff for a really outstanding presentation.

8 MEMBER BROWN: Oh, I would too.

9 MEMBER ABDEL-KHALIK: And being responsive
10 to our questions. That was very good.

11 There are three issues on my list here.
12 One relates to new reactor which is the DAC closure
13 process. We really need to follow up on that.

14 The two other issues related to Watts Bar;
15 one is sort of a comment made by John that perhaps we
16 ought to draw on GALL as far as the aging process and
17 how that may impact some of the passive structures and
18 systems at Watts Bar 2. There are some processes
19 there that could be very valuable.

20 And the third issue relates to retraining
21 of operators at Watts Bar 2, recognizing the
22 importance of shared systems.

23 That's the list of my three issues that
24 sort of I came away with at the end of this meeting.

25 CHAIR SIEBER: Otto.

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1 MEMBER MAYNARD: I echo the comments of my
2 colleagues here. The only thing I would add is I have
3 a better appreciation for how you are organized and
4 how you're treating Watts Bar and how you're getting
5 ready for the new reactors, and doing that in a way
6 where it does not impact your obligation for the
7 operating reactors. So I am personally very pleased
8 with that process. Thank you.

9 CHAIR SIEBER: John.

10 MEMBER STETKAR: I guess I can't add
11 anything at this point. Again, thanks a lot for a
12 very, very good discussion and well organized
13 presentation.

14 Thank you very much.

15 CHAIR SIEBER: I would like to point out
16 that I thought the cooperation between the region
17 staff and our ACRS staff in preparing for this
18 meeting, particularly going through a lot of agenda
19 items that we all supplied to consolidate those into a
20 format that could be addressed, perhaps not easily but
21 addressed in a logical fashion. I think that work by
22 the staff is important and actually vital to the
23 success of a meeting like this.

24 Perhaps you don't believe it, but I want
25 to truly express how valuable the ACRS -- to our

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1 mission, the ACRS -- these subcommittee meetings at
2 the plants and regional headquarters are. I know it's
3 a lot of effort and I certainly appreciate it and I
4 congratulate all of you because I think you do your
5 jobs very well and your opinions and your insights and
6 knowledge and experience are important to us and it
7 helps us give good advice to the NRC staff and to the
8 Commissioners.

9 So I give you my heartfelt thanks for all
10 the work that went into it, for spending your day with
11 us and giving us the insights. It is truly of value.

12 I think that we have answered a lot of my
13 personal questions since a lot on the agenda came from
14 me. And they were good answers and it provides me
15 with better knowledge and perhaps some fresh ideas
16 here as to how we move forward at the ACRS from this
17 point.

18 So again, I thank all of you very much and
19 not only the regional staff but our staff that we
20 brought with us. Thank you for today's presentation
21 and all the work that went led up to it.

22 Sir, do you have comments that you would
23 like to give to us?

24 MR. REYES: Well, I tell you not to be a
25 stranger, we welcome you back, don't wait four years

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1 to do this. As you know, we are the Center of
2 Excellence for Construction Inspections so all the new
3 reactor inspections will be here, so hopefully we can
4 meet again in the near future.

5 Thank you.

6 CHAIR SIEBER: Thank you very much, this
7 subcommittee meeting is adjourned.

8 (Whereupon, the meeting was adjourned at
9 2:46 p.m.)

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**ACRS PLANT OPERATIONS AND
FIRE PROTECTION
SUBCOMMITTEE MEETING**

July 30, 2009

8:00 A.M. – 3:00 P.M.

Region II



SAFETY BRIEFING / REMINDERS

- Evacuation Routes
- Visitors Must Be Escorted
- Restrooms
- Lunch Options
- Teleconference Details
- Sign-In Sheet



AGENDA

- 8:00 - Opening Statement - J. Sieber (ACRS)**
- 8:05 - Introduction - L. Reyes (RII)**
- 8:15 - RII Organization/Staffing - L. Plisco (RII)**
- 8:45 - WBN #2 Current Status and Site Activities - R. Haag (RII)**
- 9:45 *** BREAK ******
- 10:00 - RII Methods and Results in Evaluating WBN Unit 2
Condition and Performance - R. Haag (RII)**
- 11:30 ****LUNCH*******
- 12:30 - Other Construction Projects - M. Lesser (RII)**
- 1:30 - Region II Operating Plant Discussion - L. Wert (RII)**
- 2:30 - Public Comments**
- 2:45 - Subcommittee Deliberations**
- 3:00 - Adjourn**



OPENING COMMENTS

J. Seiber, Chair

ACRS Plant Operations and Fire Protection
Subcommittee



INTRODUCTION

L. Reyes

Regional Administrator



Region II Organization

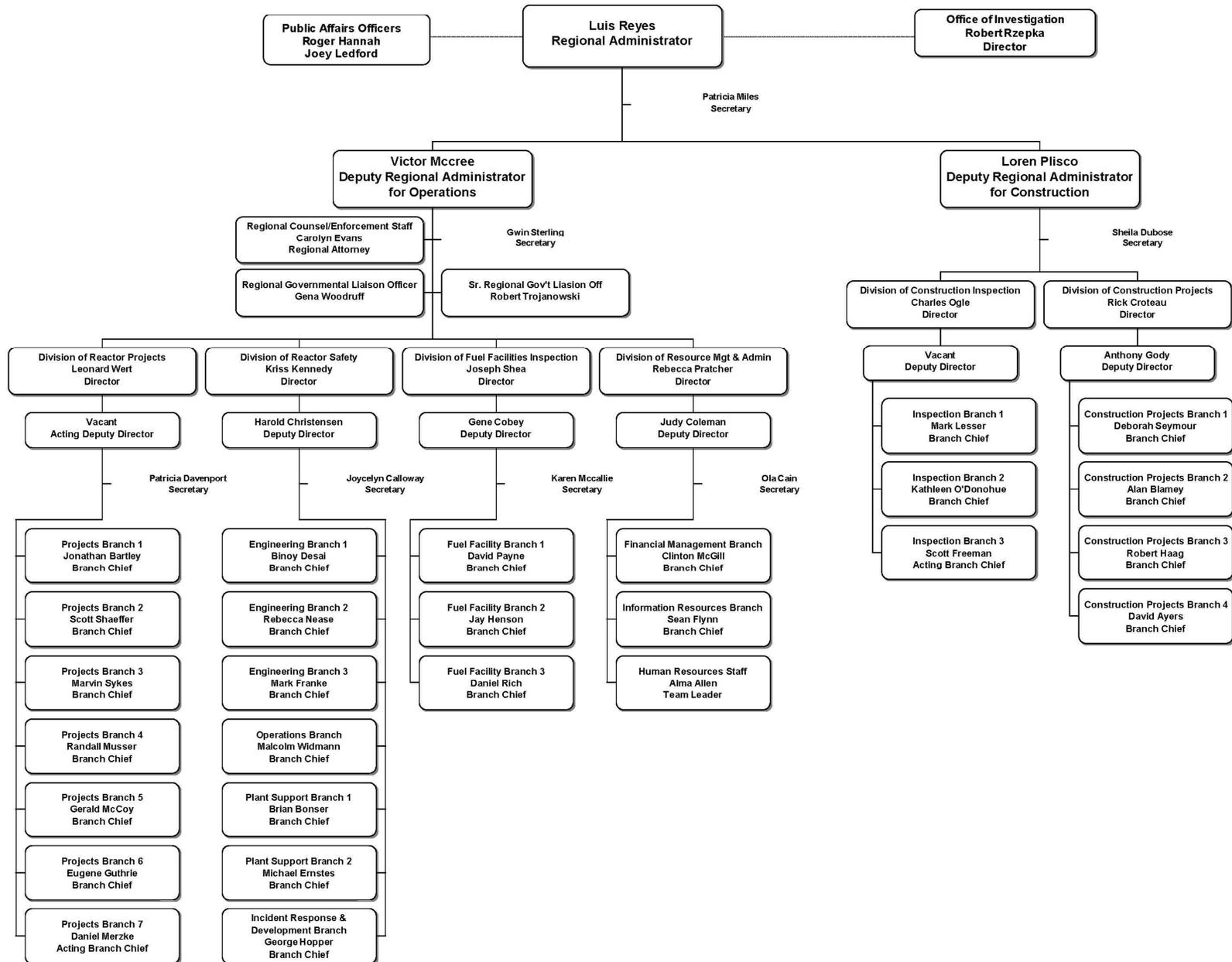
Loren R. Plisco

Deputy Regional Administrator for
Construction

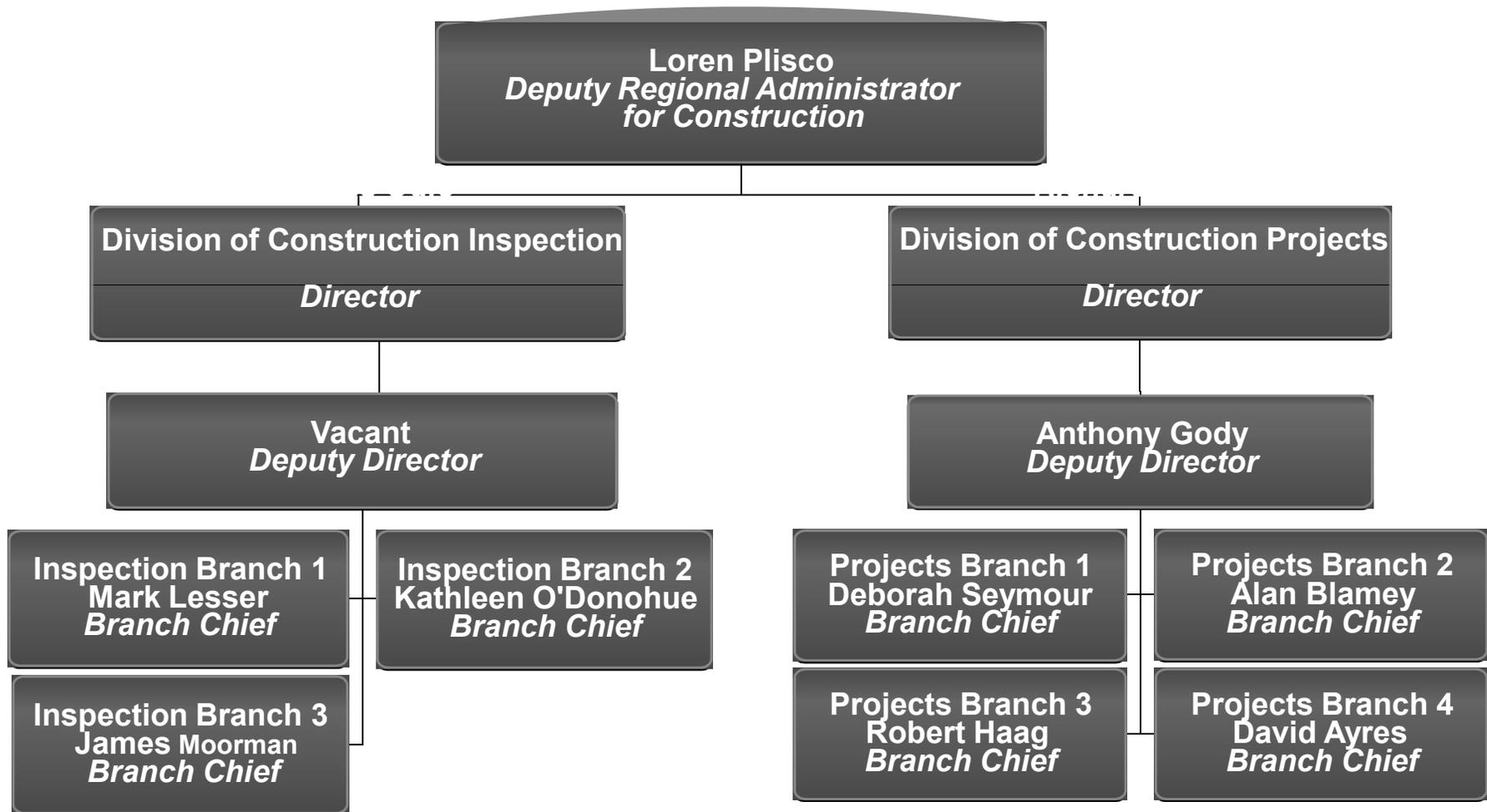


U. S. NRC

Region II - Atlanta, GA



Center for Construction Inspection





Major Functional Responsibilities

- Agency center of excellence for nuclear facility construction inspection activities
- Manage construction project inspection program
- Develop infrastructure for construction inspection program and staff
- Carry out construction inspections at new facilities and associated vendors
- Evaluate performance of applicants/licensees
- Provide regulatory bases for agency decisions



Watts Bar Unit 2 Staffing

- 10 FTE (direct) budgeted
- Construction Projects Branch 3 (DCP)
- Construction resident office established
- 3 resident inspectors assigned
- 5 FTE matrixed to DCI and DRS



WB2 Past Challenges

- WB2 partially constructed and inspected under IMC 2512
- IMC 2512 out of date and archived
- Processes for new reactor construction still under development and/or NA
- Insufficient time to update IMC 2512 or wait until new reactor processes ready
- Not the same as Browns Ferry Unit 1



Implemented Solutions

- Prepared stand-alone IMC 2517
- Incorporated lessons learned
- Used IMC 2512 inspection procedures with caveats to adopt latest NRC guidance
- Reconstituted inspection program performed during construction to-date
- Developed process to evaluate acceptability of past inspection work



WBN Unit 2 Current Status and Site Activities

Robert C. Haag

Branch Chief

Division of Construction Projects

Construction Projects Branch 3 (CPB3)

Construction Projects Branch 3



Robert Haag
Branch Chief



James Baptist
Sr. construction project inspector



Wiahdee Hearst
Secretary



Alfred Issa
Reactor Inspector



Tony Nazario
RI



Peter Van Doorn
Sr. reactor inspector

ROTATION



Hasan Abuseini
RI

Watts Bar



William Bearden
Sr. resident inspector (Watts)

Watts Bar



Linda Chattin
Secretary



RII Inspection of Watts Bar 2

- CPB3 has overall responsibility for WBN2 construction inspection program
- CPB3 staff has construction and Watts Bar experience
- Adequate resources provided by program office
- Planning for additional resident inspector with operations experience



RII Inspection of Watts Bar 2 Cont.

- Readiness inspection at beginning of WBN2 project with followup completed one year later
- Problem Identification & Resolution (PI&R) inspections:
 - Review of correction action program part of resident inspector routine activities
 - PI&R team inspection
- Incorporate historical and current issues into planned inspection activities
- IP&S used to ensure all required inspection activities are completed



RII Inspection of Watts Bar 2 Cont.

- Assistance provided by DCI and DRS in specialized areas, i.e., fire protection, welding, preservice, etc.
- Inspection infrastructure established
 - Existing programs: Inspection Manual Chapters (IMC) 2512, 2513, and 2514
 - Supplemental guidance provided by IMC 2517
 - Additional guidance addressed when identified
- Challenges: Timely identification/ focusing of inspection opportunities



RII Support for NRR

- CPB3 has routine interaction with NRR
 - Periodic status calls
 - Annual management ‘Summit’ meetings
 - Mutual participation in Public Awareness meeting
- Assist in review of licensing submittals
 - Examples: Regulatory framework for Generic communication and CAP/SP completion; Refurbishment program
- Inspections in support licensing consideration
- RII will have an active role in WBN2 Reactivation Assessment Group (WRAG)



WBN2 Current Status

- Completed historical inspection comparison to inspection requirements; reconstitution
- Inspection open items reviewed
- Similar reviews performed for generic communications, allegations, and temporary instructions
- Reviewing construction schedule to identify upcoming inspection opportunities
- CAP/SP inspections initiated with assigned NRC owners



WBN2 Current Status Cont.

- Adequacy of QA records reviewed as part of inspections; CAP on QA records devoted to historical problems
- Layup, preservation, and PM records reviewed during readiness inspection
- Safety Culture inspected as lessons learned initiative; Temporary Instruction for historical employee concern program issues



RII Evaluations and Assessments

- TVA walkdowns closely monitored by NRC; lessons learned from previous TVA projects
- Inspection of refurbishment program:
 - Address gaps in layup and preservation program
 - Resolve qualification of installed components
 - Assess credit taken by TVA for layup activities
- Effectiveness of QA/QC organization



RII Evaluations and Assessments Cont.

- Evaluation of recent industry issues, i.e., gas accumulation, sump debris, ice condensers
- Inspection Results:
 - TVA's oversight of vendors and contractors
 - WBN2 engineering activities
 - Licensing Effectiveness
 - Construction Activities
- Construction controls to prevent impacting U1 operations closely monitored



Unit 2 Annual Assessment

- First formalized construction assessment following guidance in IMC 2517
- Covered inspection results for 2008
- Internal NRC assessment followed by public meeting to discuss results
- Overall conclusion that TVA's program and procedures were adequate to support ongoing construction activities



Operator Licensing

- Administer a “Difference Examination”
 - Operating Exam (in plant walk-thru)
 - Written Exam (if necessary)
 - Based on actual difference (physical and operationally) between Units 1 and 2
- TVA has scheduled upcoming classes to support two Unit operations



Conclusions

- WBN2 infrastructure developed to support construction inspections
- Adequate inspection resources provided
- CPB3 staff experienced and knowledgeable
- WRAG will provide oversight and ability to make course corrections
- Scheduling inspections based on TVA's construction schedule is challenging



Other Construction Inspection Activities

Mark S. Lesser

Branch Chief

Division of Construction Inspection



Overview

- Fuel Facility Construction
- Vendor Inspections
- New Reactors
- Support to Operating Reactor Inspections



Fuel Facilities

- Shaw Areva MOX Services, Mixed Oxide Fuel Fabrication Facility, Aiken, South Carolina
 - Manual Chapter 2630, MOX Fuel Fabrication Facility Construction Inspection Program
 - Inspections started Oct 2006
 - Senior Resident Inspector onsite
- Louisiana Energy Services (LES) L.L.C., National Enrichment Facility, Eunice, New Mexico
 - Manual Chapter 2696, LES Gas Centrifuge Facility Construction and Pre-operational Readiness Inspection Program
 - Inspections started Dec 2006



Inspections

- Quality Assurance (including design control, problem identification and corrective action, etc.)
- Items Relied On For Safety (IROFS)
- Backfill
- Concrete foundations, buildings
- Structural steel
- Instrumentation
- Piping / welding
- Commercial Grade Dedication



Examples of Inspection Findings

- Controls over concrete batch plant
- Rebar bending issues
- Reinforcing steel splices
- Design change controls for steel reinforcement; structural beams
- Procedures for concrete strength tests and grounding rod tests



Inspection Findings (cont.)

- Validation of QA records
- Oversight of contractor non-compliances
- Identification and correction of adverse conditions
- Installation of reinforcement steel
- Documentation of visual weld inspections



Support to Division of Fuel Facility Inspection

- USEC American Centrifuge Project, Piketon, Ohio
- Global Laser Enrichment, Wilmington North Carolina



Vendor Inspections

- NRO - lead for reactor vendor inspection program, CCI participates
- CCI - lead for fuel facility vendor inspection program
- Inspect adequacy of licensee / applicant oversight of vendors and/or vendors directly



New Reactor Inspection Activities

- Support NRO for pre-COL site audits
- Geotechnical investigations
- QA program inspections
- Vendor oversight inspections
- Engineering Design Verification
- Foreign construction site visits



New Reactors (cont.)

- ITAAC Related inspections – MC 2503
- Program Inspections – MC 2504
- Infrastructure Development
 - Inspection Procedures
 - Inspection Documentation
 - Inspection Scheduling
 - Enforcement Policy
 - Inspection Scheduling



Support to Operating Reactors

- Maintain inspector qualifications
- Participation in ROP inspections
- Digital I&C Inspection Support
- Emergency Preparedness



Region II Operating Plant Discussion

Leonard Wert

Director

Division of Reactor Projects



Region II Plants-ROP Performance

- 29 of 33 operating units in Licensee Response column
- 4 units in Regulatory Response column
- 3 units (1 site) with open Substantive Cross-Cutting Issue (PI&R)



Baseline Program Effectiveness

- Inspectors continue to identify safety issues.
- Recent examples:
 - TS compliance on increased RCS leakage
 - Inadequate root cause analysis of event
 - Maintenance deficiencies
- Licensees address all findings.
- Program focuses both licensees and agency on risk significant issues.



ROP Baseline Evolution

- ROP baseline is flexible and continues to be refined:
 - Emergent safety issues (TIs, GLs)
 - Experience/incidents lead to changes
 - Formal ROP re-alignment process
 - Safety culture aspects
- Inspection Staff input: More inspection of in-process maintenance and engineering work.



RII Plants beyond “Licensee Response” column

- Currently, 4 units at 3 sites
- Associated performance issues are primarily plant specific.
- Some association with safety culture aspects
- Safety Culture aspects expected to be addressed by licensees.
- Licensee’s actions, including safety culture aspects, are evaluated via supplemental IPs (95001, 95002, and 95003)



Potential Generic Implications

- Potential generic implications are considered for all findings, regardless of action matrix column or overall plant performance.
- Region II utilizes Plant Issues Tracking Application (PITA) to promptly share information on plant issues.
- PITA facilitates OpE info exchange and communications.
- Region II also recommends/develops generic communications.



RII “Greater than Green” Findings

- RII dispositions about 3-4 “greater than green” issues each year. (33 since 2000)
- No Yellow or Red findings recently does not necessarily reflect trend of enhanced safety:
 - SDP used to assess findings
 - Robust design/construction, strong regulatory requirements, and generally conservative operations limit safety impact of many findings.



“Greater than Green” Findings (Cont’d)

- Licensees acting to reduce overall risk:
 - Implementing modifications to systems
 - Changing operations of existing systems
 - B.5.b activities and equipment
 - Continuing to identify and address issues (e.g. NFPA 805)



“Greater than Green Findings (Cont’d)

- Actions, including modifications, are scrutinized by NRC inspection.
- Supplemental Inspections specifically address actions to correct root causes.
- Outcome is reduced risk to public and environment.



ROP Treatment of Safety Culture

- Cross-cutting aspects are considered for issues that reach level of a Finding.
- Some inspectors want ability to document and “tag” minor issues and observations.
- Many staff feel that 30 minutes for CAP review insufficient, but other IPs allow time for CAP review also.



ROP Treatment of Safety Culture (Cont'd)

- Reg II does not limit inspectors strictly to time estimates in IPs – emphasis is on high quality of each sample.
- No NRC-performed safety culture assessments of Region II plants.
- Numerous licensee assessments of safety culture have been performed - vary in scope and content.



Safety Culture of Region II

- OIG surveys closely reviewed, areas for enhancement selected, actions developed.
- Internal Safety Culture Task Force
- 2007 NRC Employee Survey
- Management solicits staff feedback and input in various ways, some examples:
 - Feedback forms
 - Informal calls to individuals
 - Small group meetings
 - “Ask the Regional Administrator”
 - 360 reviews of management



Safety Culture of Region II (Cont'd)

- Responses are provided for feedback, input, or comments received.
- Management has recognized individuals for bringing up issues, asking questions.
- Staff input indicated that Region II safety culture is currently healthy.



Engineering Inspections

- Component Design Bases Inspections Issues
 - Licensee's rigor in technical evaluations
 - Licensees not taking advantage of previous CDBI inspection results
 - Generic Issues identified in Information Notice 2008-02
 - Procedure under review for revision



Engineering Inspection Challenges

- Digital I&C and Cyber Security
 - Development of Baseline inspection procedures
 - Training of inspectors
- NFPA 805 Inspections
 - Development of inspection procedure
 - Training of inspectors



WRAP-UP

- Public Comments
- Subcommittee Deliberations
- Adjournment



Acronyms

- ACRS – Advisory Committee on Reactor Safety
- CAP – Corrective Action Program
- CCI – Center for Construction Inspection
- CDBI – Component Design Bases Inspection
- COL – Combined Operating License
- CPB3 – Construction Project Branch 3
- DCI – Division of Construction Inspection
- DCP – Division of Construction Projects
- DRS – Division of Reactor Safety
- FTE – Full Time Equivalent
- GL – Generic Letters
- I&C – Instrumentation and Control
- IMC or MC – Inspection Manual Chapter
- IP – Inspection Procedure
- IP&S – Inspection Plan and Schedule
- IROFS – Items Relied On For Safety
- ITAAC – Inspections, Tests, Analyses and Acceptance Criteria
- LES – Louisiana Energy Services
- MOX – Mixed Oxide
- NA – Not Applicable
- NFPA – National Fire Protection Association
- NRC – Nuclear Regulatory Commission
- NRO – New Reactor Office
- NRR – (Office of) Nuclear Reactor Regulation
- OIG – Office of the Inspector General
- OpE – Operating Experience
- PI&R – Problem Identification and Resolution
- PITA – Plant Issues Tracking Application
- PM – Preventive Maintenance
- QA – Quality Assurance
- QC – Quality Control
- RCS – Reactor Coolant System
- RII or Reg II – (NRC) Region II
- ROP – Reactor Oversight Process
- SDP – Significance Determination Process
- TI – Temporary Instructions
- TS – Technical Specifications
- TVA – Tennessee Valley Authority
- U1 – (WBN) Unit 1
- USEC – United States Enrichment Corporation
- WB2 – Watts Bar Unit 2
- WBN – Watts Bar Nuclear
- WRAG – WBN2 Reactivation Assessment Group