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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

August 24, 2005

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This transcript has not been reviewed, corrected and edited and it may contain inaccuracies.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

PLANT OPERATIONS AND
FIRE PROTECTION SUBCOMMITTEES

REGION II VISIT

+ + + + +

Wednesday, August 24, 2005

1:30 p.m.

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Conference Room 24T20
Sam Nunn Federal Center
61 Forsyth Street, N.W.
Atlanta, Georgia

PANEL MEMBERS:

JOHN D. SIEBER, ACRS Chairman

GRAHAM B. WALLIS, ACRS

VICTOR H. RANSON, ACRS

DANA A. POWERS, ACRS

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4 JOHN T. LARKINS, ACRS STAFF

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6 STEPHEN CAHILL, NRC: RII

7 MIKE LESSER, NRC: RII

8 VICTOR M. McCREE, NRC: RII

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

(1:30 p.m.)

MR. SIEBER: Good afternoon. This meeting will now come to order. This is a meeting of the Advisory Committee on Reactor Safeguards, the Subcommittee on Plant Operations.

My name is Jack Sieber, and I'm Chairman of the Subcommittee. The Subcommittee members and attendants are Doctors Mario Bonaca, Dana Powers, Tom Kress, Rich Denning, Victor Ransom, Graham Wallis, who is also chairman of the whole ACRS, and Bill Schack.

The purpose of the meeting today is to discuss regional inspection, enforcement and operational activities. The subcommittee will hold discussions with representatives of the NRC staff regarding these matters. The subcommittee will gather information, analyze relevant issues and facts, and formulate proposed positions and actions as appropriate for deliberation by the full committee.

Ralph Caruso is the designated Federal official for this meeting. The rules for participation in today's meeting have been announced as part of the notice of this meeting previously published in the Federal Register on June 20, 2005.

A transcript of the meeting is being kept

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1 and will be made available as stated in the Federal
2 Register notice. With regard to the production of the
3 transcript, it is requested that speakers first
4 identify themselves and their affiliation, and speak
5 with sufficient clarity and volume into a microphone
6 so that they can be readily heard.

7 I would point out that the individuals not
8 seated at the main table, since we don't have
9 microphones around the room, if you could move close
10 to the table where a microphone will pick up your
11 voice. That would help in the production of the
12 transcript.

13 I appreciate on behalf of the ACRS the
14 efforts that the Region II personnel have gone through
15 to provide an opportunity to meet with them today, and
16 also tomorrow morning. And these visits, for us, are
17 very important because it gives us insight into the
18 region's activities, and also into the region's way of
19 thinking about issues and resolving issues that are
20 important and pertinent at a region base.

21 And so we particularly appreciate your
22 hospitality. I note, based on correspondence back and
23 forth, and also the agenda that resulted from it, that
24 our agenda is very ambitious. So I will not take any
25 more of your time to take time from the agenda. And

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1 so I would like to move to the first subject.

2 MR. PLISCO: Good afternoon. I just
3 wanted to welcome you. My name is Lawrence Plisco.
4 I'm the deputy regional administrator here in Region
5 II. I wanted to welcome you to Region II, and we're
6 looking forward to the discussions. And hopefully
7 they meet your needs.

8 I actually went back and looked at the
9 last time the subcommittee was here, back in 2002, to
10 sort of compare what has changed since then. I think
11 the last time you were here, we were really very early
12 on in the Reactor Oversight Process, and we spent a
13 lot of time talking about the oversight process. And
14 that process has obviously matured now. But we still
15 have issues and we're going to talk about some of
16 those process issues that we have in the oversight
17 process, and some specific topics that we'll talk
18 about.

19 Bill Travers apologizes. He's actually in
20 transit back. He was with Commissioner Jaczko
21 yesterday in Richland, Washington, at the Framatome
22 fuel facility, and he'll be here tomorrow to stop by
23 and just say hello.

24 In your package there is some basic
25 information on Region II organizational structure, and

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1 who is who. I wasn't going to spend any time on that
2 unless you had any specific questions. I know you
3 wanted to get into the technical subjects. And I was
4 going to go right to that, if that's all right with
5 you.

6 MR. CAHILL: All right. Well, first we're
7 here to talk about the Browns Ferry I recovery, and
8 the Region II's oversight of that. I'm going to be
9 doing the first half of this, and then I'll be turning
10 it over to Mike Lesser to my left to do the second
11 half.

12 The first thing I want to talk about, and
13 a lot of this is what you heard yesterday at the visit
14 to Browns Ferry, is the TVA Background. They told you
15 that, you know, all three units voluntarily shut down
16 in March of '85 because of TVA's regulatory management
17 issues.

18 One point that I don't think came out
19 yesterday in the discussion was that the TVA was
20 stretched fairly thin at the time. They had an
21 ambitious construction program going on, and that was
22 one of the reasons that a lot of these issues that
23 caused them to shut down came up as problems.

24 But Unit I has been maintained in a
25 defueled lay-up condition since then. And since '85,

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1 the NRC has conducted period annual lay-up
2 inspections. If you remember, Bill Bearden, the
3 senior resident now at Unit 1, he was part of our
4 regional staff. And he was the primary inspector that
5 had done most of those inspections.

6 So each year we inspected what TVA was
7 doing to preserve Unit I, the dehumidification and the
8 wet lay-up programs that they had in place were looked
9 at annually by us. And we're still doing those
10 similar inspections at Bellefonte and Watts Barr Unit
11 II. And we did those up until 2003, when TVA
12 terminated their lay-up program for Unit I.

13 There were some common systems that were
14 also operating to support Units II and III. And those
15 were not a part of our lay-up inspection. We
16 inspected those routinely, as we would any systems to
17 support Units II and III. So those were -- there was
18 really nothing with Unit I that was not covered under
19 either our lay-up inspections or our routine
20 inspections.

21 And you heard this point yesterday, and I
22 wanted to make -- reiterate it. That lay-up is not
23 credited by TVA. And it's also not credited by us.
24 It's not part of any basis that we have for acceptance
25 or review of any of their efforts or any of their

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1 programs. As they explained to you, that it's purely
2 to maintain the economic viability of the units. So
3 there is nothing with the lay-up program and the
4 inspections we've done before that we're using now for
5 our oversight.

6 MR. POWERS: Well, then why do you bother
7 to inspect them?

8 MR. CAHILL: That's a good question. I
9 know with the other units it's part of maintaining an
10 accurate construction permit. And actually, we
11 inspected it because we didn't know how they would
12 take credit for that. We didn't know if there was
13 going to be some basis for that, and having not looked
14 at it for many years, we would be in pretty much an
15 untenable position if we had to suddenly take credit
16 for it and didn't really have any insight as to how
17 they were doing.

18 MR. POWERS: Well, I mean, they can take
19 all the credit for it they want. If you don't give
20 them credit, well, I guess it's kind of a waste of
21 their time too.

22 MR. CAHILL: Exactly. But we haven't even
23 gone down that road, so it's -- the next bullet talked
24 about the -- we issued the 50.54(f) letter that you
25 discussed yesterday. And I know the question came up

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1 as to what regulatory hold we have over TVA.

2 We -- in that process we confirm TVA's
3 commitment to seek NRC approval before restarting any
4 of the units. So it's not truly a COW, but it did lay
5 out some of the confirmation of that commitment in
6 that correspondence back in the '80s.

7 When Unit II restarted in '91 and Unit III
8 restarted in '95, they both followed Commission
9 briefings and staff approval. And both Units II and
10 III have operated very well since they've restarted.

11 TVA discussed some of that with you
12 yesterday. But since the implementation of the ROP or
13 the Reactor Oversight Process in 2000, they've had
14 nothing but green issues that never crossed into
15 anything but the licensee
16 response column of our action matrix.

17 They're in good standing with INPO, as
18 they discussed with you. And even prior to the ROP,
19 they had very high average self-ratings under our old
20 program. So they have a long period of operation with
21 us. But there is other units that give them some
22 track record with us as far as a licensee that the
23 regions oversee them.

24 Leading up to the TVA Board decision in
25 2002, they did do some environmental scoping, which

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1 they discussed with you yesterday. And a key point is
2 they did some equipment verifications. They were very
3 open in their dialogue with us as to that they were
4 considering this.

5 And we did have the opportunity to have
6 some of our inspectors involved with some of the
7 things that they were looking at, just so we could
8 understand if they were going to be taking credit for
9 any of those pre-decision inspections. If we would
10 need to be involved, we were.

11 One of those things they did take a look
12 at, the core shroud -- I know that came up yesterday.
13 And we did have an inspector that was along with that.

14 As you know, in May 2002, the TVA Board of
15 Directors voted to restart Unit 1, and authorized TVA
16 to ask for a 20-year extension. That license is for
17 three units. Just some key points we saw in that
18 plan. And I know some of this is familiar to you.
19 But they're implementing the same programs in Unit I
20 that they used for the restarts of Unit II and III,
21 which we had a very detailed oversight.

22 They had a similar five-year plan for
23 duration. They're incorporating a lot of lessons
24 learned and improvements that they came across from
25 Units II and III. We -- I know you heard some of the

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1 details on that yesterday.

2 One key point that we didn't cover
3 yesterday, though, that was very fundamental on our
4 perspective was they are assigning resources for the
5 Unit I restart, that the people they have in their
6 organization have a lot of experience with Unit II and
7 III restarts. They brought back a lot of retired TVA
8 folks that were instrumental players in the Unit II
9 and III recoveries to keep that corporate knowledge in
10 house, and understand how they'd gone through this
11 before.

12 So they had an experience organization
13 that we were familiar with, and recognized a lot of
14 the individuals that had come back, and knew that
15 they're experienced in how Unit II and III were
16 recovered.

17 TVA reiterated their commitment to request
18 NRC approval before restart. They put out the concept
19 that you heard extensively yesterday. Unit I is to be
20 operational identical to Units II and III. And they
21 at that point laid out some of the differences some of
22 us have learned. They informed us that there are some
23 other plans to replace many of the systems, as opposed
24 to analyzing them. I know you saw some of that first-
25 hand yesterday.

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1 MR. POWERS: They parsed the word
2 identical more finely than I probably would myself.
3 Could you explain that a little better to me?

4 MR. CAHILL: Explain operation identical?

5
6 MR. POWERS: Yes.

7 MR. CAHILL: This is -- and when TVA first
8 laid this out in some public meetings, we struggled
9 with it also, as -- particularly a lot of the staff in
10 headquarters were challenging what that meant.

11 To us it means, from an operational point
12 of view, from an operator implementing the procedure,
13 there may be some underlying components that are
14 different. There may be some different controllers
15 or, you know, as they talked about, some of the
16 recorders might be different.

17 But they can basically implement the same
18 procedures, go through their same programs and
19 processes that they have at the site at any of the
20 given units. There is no fundamental differences that
21 would have a significant impact on the way they would
22 approach each unit.

23 I mean, one of the key things that did
24 come up yesterday -- we talked about licensed
25 operators and their preparation for staff done up by

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1 Unit I. There is no unit-specific license or
2 transfer. The operators there, you know, prior to the
3 shut-downs in '85 and going forward will have one
4 license for all three units.

5 There are some sites in the country that
6 we did issue unit-specific licenses for the operation,
7 because there is enough differences. We don't see
8 any -- that is not something that has really even been
9 discussed, because there is not anything along those
10 lines that would cause us to need to do that.

11 MR. SIEBER: It seems to me that's what
12 they're trying to preserve, was this
13 operational sameness from one unit to another.

14 MR. CAHILL: And from some of their
15 perspective, and their benchmark on other facilities
16 and their need to keep it simple, it's in their best
17 interest to keep it operationally the same. When you
18 start getting differences between units, that's just
19 a set-up for mistakes to be made down the line.

20 And that lets something -- we have seen
21 that throughout our oversight of the recovery, that
22 that is a tenet that they've been carrying through all
23 their programs, you know, just they want to implement
24 everything consistently across all three units so that
25 it's fairly seamless.

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1 MR. SIEBER: But that doesn't necessarily
2 mean that all the materials will be the same in every
3 location, you know. In one unit they may have
4 replaced a pipe that in the other two is not replaced,
5 and so forth.

6 MR. POWERS: And I can well imagine that.
7 But I -- other things come to mind. I mean, yes, I
8 can ensure that the operations during normal
9 operations could be very close. Now talk to me about
10 shut-down.

11 At the very minimum, presumably there are
12 other things that are associated with the maintenance
13 rule. The -- especially on lay-up. How many -- what
14 particular systems can you have out of that offlining
15 for maintenance at the same time that would be
16 different simply because plants are operating a
17 different power?

18 MR. CAHILL: That's an -- you're going to
19 get that same inconsistency regardless if you're
20 recovering a unit that's been shut down since '85.
21 You've got a three-unit site. And you start
22 implementing an EPU, we'll you're well, then you're
23 going to get a -- at a multi-unit site, units are
24 never ever identical.

25 Someone is always out of sync, or some

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1 unit has some outage or related mods have already
2 done, the next one's waiting for the next outage to
3 implement those mods. And that's something that the
4 utilities are used to dealing with, and our oversight
5 program is used to addressing. Did we cover that for
6 operationally identical?

7 Some of the initial perspective the NRC
8 had after getting the news from TVA was that this is
9 the third unit TVA is recovering. And they did have
10 success on the other two that was -- those programs
11 went fairly well. And like I said before, they did
12 have a good period of operation on both those units
13 that established some credibility for TVA's ability to
14 pull off this project
15 on Unit I.

16 And there are very similar efforts, and
17 they have -- the approaches that they were laying out
18 didn't cause us any new concerns that we hadn't
19 addressed already on II and III.

20 Also there was -- originally Unit II was
21 laid out to be the lead unit for the extent of power
22 upgrade, not Unit I. So some of the discussions we're
23 having now about Unit I were not in play back in 2002
24 when we were discussing this.

25 Also something that was laid on the table

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1 fairly early was we had some dialogue with TVA. TVA
2 launching into this project had a need or a desire for
3 budget and regulatory predictability.

4 They knew that they oversight that we had
5 done on Unit II and III was fairly significant. There
6 was -- a lot of resources were applied to it. And
7 they were trying to understand what type of oversight
8 we would apply in this case. And I'll discuss some
9 more, like, one of the points that we raised in that
10 discussion later.

11 But overall, with the scope of what TVA
12 was planning to do, we did not perceive the need for
13 the same level of significant oversight that we had
14 previously. We had to have formal restart panels
15 through the whole process. And we had to have an
16 extensive amount of resources that were applied to
17 both of those recoveries.

18 One of the things that also was discussed
19 early in our perspective was things are a lot
20 different now as far as the NRC's oversight at this
21 time in 2002, one of the most significant ones being
22 the implementation of the ROP that was not in place
23 for the -- either of those two recoveries.

24 TVA had originally requested that we use
25 the ROP for recovery of Unit I. We listened to that,

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1 but we had some fundamental problems with that. We
2 didn't think that would work. And some of the points
3 on that is the ROP complicated documental thresholds.
4 As many of your are familiar with our current report,
5 we don't weight a lot of opinions and just what we saw
6 type of things, unless we have something that rises to
7 the threshold of a finding.

8 And we didn't -- we did not think that
9 that would be very useful for us in documenting the
10 recovery effort over -- of a unit like Unit I. It
11 also -- things like the inspection procedures that
12 were not really applicable to inspecting an operating
13 unit that's at power, or going through each team
14 refueling outages. Not the unique situation that Unit
15 I was in.

16 Also enforcement was a key thing we
17 discussed. The enforcement basis for the ROP is a
18 significance determination process. And that
19 significance determination process being a risk-
20 informed process is based on the risk associated with
21 an operating unit.

22 We are very familiar with the efforts we
23 had done on II and III, and the recent licensing of
24 Watts Bar -- the type of issues you find on a recovery
25 are not the ones that can really be processed through

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1 an SDP based on an operating reactor. They're more of
2 a work -- work -- the quality and program type of
3 issues.

4 There was also the -- the pre-ROP
5 verifications that were done on all the operating
6 units. There was actually a very conscious effort to
7 roll all the operating units in the country into the
8 ROP. That was never done on Unit I.

9 Things just validated the performance
10 indicators and things like that. And also the
11 assessment process for the ROP -- the action matrix --
12 again, very predicated on the color of the findings we
13 get out of the SDP. And that would not really be
14 applicable to the oversight of the recovery units,
15 so --

16 The need was set that we had to do a
17 manual chapter. And some of the considerations that
18 we laid out when pulling this manual chapter together
19 was a lot of the issues -- and they touched on this
20 briefly yesterday with you, their special programs
21 that TVA defined as necessary to be resolved before
22 they could recover the units.

23 Those are programmatic issues. And a lot
24 of those had already been fully addressed for the Unit
25 II and III recoveries, and all we really needed to do

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1 was verify implementation of them. We didn't need to
2 do reverification of those programs, because TVA was
3 basically taking them off the shelf, and now just
4 applying them to Unit I.

5 A good example is like fuse control. They
6 had a fuse control program problem back in the mid-
7 '80s. They implemented that. We are very confident
8 in their ability to control their fuses. We just need
9 to make sure they put the right fuses in on Unit I.
10 So we didn't need to reverify that whole program. So
11 we tried to incorporate those type of things in the
12 manual chapter.

13 The other thing that was very important to
14 us is to make sure we ensure a clear document trail
15 for everything we did on the Unit I recovery. As I
16 answered before, there are a few reports that we've
17 been working with for the last several years. Are --
18 they don't document a lot of critical thinking. They
19 document the results of the finding if we have
20 something.

21 But we recognized that we needed to have
22 a clear way of documenting how we resolved every issue
23 that was open for Unit I to make sure that it was
24 clearly resolved at the end. And our thought process
25 was to be ready at the end when we would be briefing

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1 an organization like you, the Commission, or dealing
2 with any intervenors that might come up and you know,
3 particularly challenge a certain issue and say, How
4 did we resolve that for Unit I?

5 We wanted to make sure that we could pull
6 a report where it was clearly documented that we
7 looked at it, what we did, and what our basis for
8 closure was.

9 And also, like I said before, there was a
10 desire to do this with a different type of oversight,
11 not establish a formal restart panel from the
12 beginning, and also not to use the Manual Chapter 0350
13 process, which is -- has some implications politically
14 as far as the performance of the licensee, and also
15 requires a lot of live oversight wickets that we
16 didn't think were necessary in the beginning of the
17 project.

18 So the Manual Chapter I'm mentioning now,
19 Chapter 2509, was developed jointly by Headquarters
20 NRR, the IIPB program office, and Region II. It was
21 also done very openly with TVA. After -- till we had
22 come up with a draft product. We did have a meeting
23 with TVA where we shared that with them. We issued
24 that as a public document to make sure that it was
25 clearly out in the open.

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1 That was a very productive effort, because
2 TVA raised some concerns that we had not thought of.
3 So after several months of interaction, we did issue
4 the Manual Chapter in August 2003. And this specific
5 Manual Chapter, specific to the oversight of Unit I
6 recovery, because it's a fairly unique situation,
7 there was some discussion about the applicability of
8 this to new construction. And that was one of the
9 reasons we decided to do a separate manual chapter,
10 because it really was not analogous to new
11 construction.

12 A couple of key points -- and I have
13 copies of the manual chapter, if any of you would be
14 interested in looking at it.

15 MR. POWERS: I think I would.

16 MR. CAHILL: There's a couple of points in
17 the Manual Chapter that I just wanted to emphasize.
18 The open item closure criteria -- we relaxed the
19 criteria that we had used in previous restarts, which
20 was basically the whole thing was open till the very
21 end, and to inspect every last thing until the final
22 implementation.

23 As I mentioned before, like some of these
24 special programs, we didn't need to reverify those
25 programs. So we took -- we added some criteria that

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1 are laid out specifically in the Manual Chapter that
2 my inspectors and Marc's inspectors use each time they
3 close out an item, that it basically allows a credit
4 to be applied. If TVA is implementing identical
5 solutions like they did on Units II and III, and it's
6 tracked in one of the programs that we've already
7 inspected and have confidence in, we can close out
8 that item before the last piece of equipment is
9 actually installed or the last test is done.

10 We're still going to be involved,
11 obviously, with the restart testing and all the
12 validation at the end. But it allowed us to make
13 reasonable progress on the list of restart items and
14 to spread those over time.

15 The Manual Chapter also establishes a lot
16 of public communications expectations. There is a
17 series of meetings that we've been doing, rotating
18 between the sites, Region II, and headquarters, that
19 have been done just to discuss the status of where TVA
20 is in this project, and our perspective on how they're
21 doing.

22 We just had one of those July 20 here in
23 Region II. And we've been doing those in an
24 approximate nine-month periodicity. Now that we've
25 gotten closer towards the end of the project, we'll

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1 probably accelerate that to more like a six-month
2 periodicity.

3 But it's meant to just give opportunity
4 for any stakeholders in any locations that would be
5 interested to have a chance to interact with us and to
6 hear what progress is being made.

7 Another key thing that's laid out in the
8 Manual Chapter is the oversight level. And I kind of
9 alluded to this before. But it keeps the oversight
10 level at a regional level until the restart -- the
11 formal restart oversight panel is established.

12 And the Manual Chapter alludes that that
13 is a decision by the regional administrator, and the
14 panel would be established approximately 12 months
15 before restart. Right now our intention is to
16 establish that restart panel at the beginning of this
17 fiscal year to -- that's a little earlier than 12
18 months, but we've decided that it was an appropriate
19 time with the activity base that TVA has over Unit I,
20 that we need to get that level of oversight in place
21 now, to get it set and get it -- get the process
22 moving.

23 The other thing, that there's a lot of
24 detail in the Manual Chapter talking about the report
25 documentation guidance, that uses the document that we

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1 used to use for reports prior to the ROP. So it
2 allows us to document a lot of critical thinking. And
3 that's an expectation that Marc and I have for
4 inspectors.

5 That it's very clear to any third party
6 uninformed reader that it's very clear what we were
7 looking at, and what our criteria was, and how we came
8 to the conclusion that this issue was resolved for
9 Unit I restart. That's an important point that we
10 have to continually emphasize with our inspectors.

11 One thing I didn't mention was -- TVA did
12 this -- did request that we use the ROP. And like I
13 said, we decided that wouldn't really work. But after
14 getting further into the exploratory project for this
15 Manual Chapter, we realized there are parts of the ROP
16 that would be very applicable to Unit I.

17 And we came up with a framework that
18 would -- that was laid out in detail in this Manual
19 Chapter on how to transition Unit I into the ROP.
20 Like I said, that's not something we had to deal with
21 in Units II and III. So it's unique. It really
22 hasn't been done with any other plant, with the
23 exception, possibly, of DC Cook, who was -- and their
24 long shut-down when the ROP was implemented, and they
25 had to get them transitioned into that.

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1 We came up with a plan to do that on a
2 cornerstone-by-cornerstone basis. There was center
3 cornerstones that -- fundamental tenets of the ROP.
4 And we decided that looking ahead, that several of
5 those cornerstones -- they're not really unit-
6 specific. It would be very easy to give an ROP
7 treatment.

8 So we laid that out in the plan there, and
9 I'll talk a little bit more in detail about what
10 progress we've made along there later. But that
11 was -- I think TVA was happy to hear that we basically
12 put that part of it in there, because it was a
13 reasonable acceptance of their request to use the ROP.
14 And it also allowed us to keep the parts of the old
15 traditional process that we needed where it was
16 appropriate.

17 Another key tenet that's in the manual
18 chapter is the use of traditional enforcement during
19 this recovery process and before we put a cornerstone
20 into the ROP. As I mentioned before, the significance
21 determination process, with its risk-informed focus on
22 an operational unit really wasn't going to be a useful
23 tool for us if TVA had performance issues.

24 We were all very familiar with the
25 traditional enforcement process we used for Unit II

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1 and III recovery, and for construction plans like
2 Watts Bar. We know that that was the tool we needed.
3 So that was a departure from the ROP, and it was
4 something that was -- there was really no framework
5 laid out to do that.

6 So we put that in the Manual Chapter, and
7 just to make sure that we were doing this as clearly
8 and out in the open as we could. There was an
9 informational SECY paper that was issued in July 2003
10 to inform the Commission of our plans to do this. And
11 also it laid out a lot of the details in the Manual
12 Chapter about not using the ROP, and approach that we
13 were going to be using for our oversight.

14 Okay. That was about all that I was going
15 to talk about on the Manual Chapter right now. Is
16 there any questions? I know it's dangerous to ask you
17 guys if you have questions. I learned that yesterday.

18 The next thing I want to talk about was
19 resources. Very quickly in this process we laid out
20 the resources that were going to be needed for this
21 and the oversight that was going to be needed. One of
22 the very first things was the assignment of the
23 oversight for the recovery in Division of Reactor
24 Projects. And that was a DRP branch chief, which was
25 discussed in there, generically, was assigned part of

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1 the oversight. And that's me. I'm in the Division of
2 Reactor Projects.

3 But also Mark Lesser is my peer in
4 Division of Reactor Safety. He owns most of the
5 engineering inspectors that were -- that are owning a
6 lot of the issues that are on our restart list and
7 have history with Units II and III. So the residents
8 at the site work for me, and Mark runs most of the
9 specialist inspectors that go out there.

10 So we jointly share oversight up until the
11 restart panel was established for the day-to-day
12 inspection and oversight of TVA's recovery effort.
13 And that's not to say that the licensing aspects --
14 NRR took care of that also took care of that also very
15 early, dedicating a full-time project manager, who now
16 is Margaret Chernoff, who I think most of you know, to
17 be over just Unit I, specifically. And that was with
18 the amount of licensing and initiatives TVA had to
19 file. That was a good allocation of resources in
20 hindsight.

21 We also assigned a Unit I Senior Reactor
22 Operator. You met them yesterday, Bill Bearden. And
23 we also assigned an extra resident inspector, in
24 anticipation of that person being a permanently-
25 assigned resident, when you get up to a three-unit

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1 staffing level, where you'd normally have two
2 residents at the site.

3 So right now at the site -- you didn't
4 meet all of them yesterday. But I have two senior
5 residents, Bill, and a fellow named Terry Ross. Bill
6 takes care of Unit I. That is his sole focus. He is
7 worried about their -- the activities going on in Unit
8 I, and is not doing any oversight of the operating
9 units.

10 And Terry Ross, the senior resident -- the
11 normal senior resident, is exactly the other side of
12 that house. He is keeping an eye on Units II and III,
13 and implementing our baseline program. And his only
14 involvement with Unit I is when the activity in Unit
15 I can potentially impact the operating units.

16 It's very analogous, that I think what you
17 saw a little bit yesterday from TVA, that they are
18 going to have a Unit I organization that's focused on
19 the recovery. And then they have their operating
20 organization.

21 And we've preserved those roles since the
22 beginning of this project, when Bill arrived. And
23 it's been actually very beneficial. He keeps our
24 focus on what's important for each of them, and
25 doesn't get them distracted in their responsibilities

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1 to it.

2 And we have two residents over there. And
3 they're a shared resource. They work either for Bill
4 or Terry, depending on what activities are coming up.
5 And we try to look at what their skills are, and
6 whether they'd best be suited. But generally one
7 works primarily on the Unit I recovery, and the other
8 one works mostly on the baseline.

9 MR. RANSOM: This was addressed a little
10 bit yesterday. But having three units in such close
11 proximity -- does that cause problems when you're
12 working on one to the extent they are in Unit I? And
13 I'm wondering if there is a history of problems, that
14 because of the interaction -- I understand there are
15 some benefits, but --

16 MR. CAHILL: There was more of a history
17 back with the other unit recoveries about that. And
18 that's one thing I -- TVA didn't really make a big
19 point about that. And they have in a lot of previous
20 presentations, about how they have that separation set
21 up. I don't know if you notice, a lot of the Unit I
22 workers have -- they're like shoplifting-type tags on
23 their badges that would alarm if they cross over into
24 one of the operating units. There's gates they go
25 through.

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1 We walked through a lot of those yesterday
2 on the site tour, that would set off an alarm, lights
3 would flash that say you're entering an operating
4 unit, because the Unit I people are not supposed to be
5 in an operating unit.

6 And that's just one of the barriers that
7 they put in place to ensure that they can minimize the
8 impacts on the operating units from the significant
9 effort that's going on with Unit I, with the 2,000-
10 plus workers that are in and out of there.

11 They've created a -- they've got a lot of
12 facilities for -- to support the Unit I workers on the
13 other side of the site that we didn't really get to.
14 There is an extra gate access over there for them to
15 come into security, and even an extra way for them
16 to -- oh, not any more. Bill is shaking his head.

17 MR. RANSOM: There's a little bit of a
18 concern when you see pipes and wires, you know,
19 crossing from one unit to the other, and --

20 MR. CAHILL: The only place we -- and
21 there is concern, and there will always be a concern
22 with Unit I, which has been unique at this -- up at --
23 it hasn't been a problem with the other ones, but you
24 heard yesterday that Unit I needs to -- or they have
25 a lot of shared systems that are intertwined.

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1 And you do run into a lot of work, you
2 know, you'd be in a -- like in a switch gear room,
3 where they're doing Unit I work. But it -- those
4 panels need to be energized and need to be active to
5 support Unit II work. So that type of activity does
6 occur, and quite frankly, there really hasn't been any
7 significant problems that have occurred.

8 I mean, our inspectors do look at that.
9 That is part of Terry Ross's role at the operating
10 units. If he knows there is Unit I work going on in
11 one of his, you know, operating switch gear rooms,
12 he's going to assess and have his inspectors assess to
13 make sure that all the planning is done right, and
14 there really isn't too much of opportunity for an
15 impact.

16 But it's been -- considering the scope of
17 work that's been going on, and the intertwined nature
18 of Unit I and II, there really have not been many --
19 any significant problems.

20 MR. LESSER: And I can add to that, Steve.
21 Back when Unit II was the only one operating, they
22 really implemented controls to address that when
23 they -- after they got Unit II running. And -- which
24 include color coding of rooms, equipment, and
25 structures to really separate the two, and keep

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1 workers aware of staying off the -- it was really to
2 protect the operating unit. That's what they want to
3 do.

4 They didn't want any interference from,
5 you know, recovery activities, impacting operating
6 units. So that's been in place for many years.

7 MR. SIEBER: Most of the licensees relied
8 on the clearance program as a way to make sure there
9 is not a misoperation in an active unit from something
10 that is going on in an inactive unit.

11 And I saw lots of clearance tags that
12 looked like boundary tags to me, issued by Unit II,
13 which Unit I people aren't allowed to touch.

14 MR. CAHILL: That's -- they are doing all
15 the tagging out of the operating units just for that
16 precise reason, because that's the primary thing
17 they're trying to avoid, is the operators in the
18 operating unit know what could impact them.

19 MR. SIEBER: Well, that's where the energy
20 is, and that's where the risk is. I have a quick
21 question for you. When I walked through the Unit I,
22 it looked to me just like a unit under construction.
23 And when I recall days when we had the units under
24 construction, where I -- some that I worked in, there
25 was a different NRC program and inspection method

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1 which looked at things like radiographs, and
2 examination of wells, and so forth. And that was a
3 pretty extensive effort, as I recall it.

4 And it's certainly different than the kind
5 of effort that occurs in an operating plant. Do you
6 look at all -- at Unit I as a plant under
7 construction, and do you employ any of those
8 inspection techniques and aspects from the old
9 construction programs. Or are you relying totally on
10 2509?

11 MR. LESSER: Well, the answer to your
12 question is we do rely on techniques from the
13 construction program, because the Manual Chapter, in
14 fact, does reference inspection procedures that are
15 construction inspection procedures.

16 So -- and a good example might be pipe
17 replacements as part of their IGSCC program, where
18 they installed new pipes, welded them. We've had
19 inspections of that ongoing for the last few years.
20 In fact, we're just finishing that up. But our
21 inspectors, in fact, did sample and inspect their
22 activities associated with welding, NDE, radiographs,
23 ultrasound and things like that. So the answer is
24 yes.

25 MR. SIEBER: And I take it the inspectors

1 that do that are all region-based?

2 MR. CAHILL: Yes. Actually, Bill Bearden
3 used to work for him, and he has a lot of engineering
4 inspection experience. So he's a good asset to have
5 on the site, because these are helpful planning marks.
6 So it's always a -- as you know from construction, the
7 scheduling challenge -- when is the right time to get
8 there to see things. But --

9 MR. SIEBER: Yes, I need to study your
10 Manual Chapter a little bit more. And I'm sure I'll
11 better appreciate what you're doing. But I -- your
12 answer gives me comfort that you're doing it the right
13 way.

14 MR. CAHILL: We set up the Manual Chapter
15 to give us flexibility to use all those old
16 procedures. Basically, we could use any procedure
17 that we can find off the shelf in the manual chapter.
18 And that's what Mark's saying. We pull a lot of those
19 old construction type of procedures as -- because
20 they're the appropriate guidance for the activity
21 we're looking at.

22 MR. SIEBER: Okay. Well, I think you're
23 doing the right thing, so I appreciate the answer.
24 Thank you.

25 MR. CAHILL: And the last thing I wanted

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1 to mention under resources was we're currently in the
2 process of assigning another resident inspector out at
3 the site, knowing that one of the existing residents
4 will retire probably at the end of this project.
5 We're basically using our allowance, the double
6 income -- that we would need on an operating site to
7 get somebody out there early so that they can get up
8 to speed and familiar with the site.

9 And also the support -- a lot of the
10 operational type of activities that are coming up, you
11 presented yesterday with their SPOC and SPA [phonetic]
12 process. That -- a lot of that activity falls into
13 the residents arena for inspection, as they integrate
14 the unit into the -- start integrating and bring
15 systems back and integrating into the operational
16 units. We know we're going to need more resources
17 over there towards the end,
18 that's going to accomplish two goals for us.

19 The next item I was going to talk about
20 briefly was the regulatory framework. TVA mentioned
21 this to you yesterday. And they actually did
22 establish a regulatory framework in their 1991
23 submittal. And they submitted it for both Unit I and
24 III, incorporating the lessons learned as they did
25 from the Unit II restart.

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1 But in 2002, once they announced the
2 project, they basically needed to update that. A lot
3 of it -- a lot had transpired, since that was the last
4 real correspondence on any framework that was done for
5 the Unit I.

6 So there was a series of correspondence in
7 2002 and 2003 that updated the Unit I restart scope.
8 And that was TVA's perspective. They submitted that
9 this is what they considered the regulatory framework
10 to be. That was primarily an effort that NRR took on,
11 was to validate that; did we agree with that. A lot
12 of it was, you know, similar or same issues that were
13 on the table for Units II and III.

14 So we also looked through our databases to
15 verify that such things as generic communications,
16 Three Mile Island action items, things like that --
17 that TVA had captured them all. And that was some of
18 the correspondence and discussion that went back and
19 forth in 2000 and 2003, was to make sure that we had
20 a list that everybody agreed upon, and that we
21 initially understood regulatory framework.

22 So in August 2003, we issued a Final
23 Regulatory Framework agreement letter, that basically
24 endorsed the results of our conversations and endorsed
25 the last submittal TVA had.

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1 And that regulatory framework includes
2 things like the special programs that TVA defined when
3 they shut down in '85. It also had other things like
4 bulletins, generic letters. I mentioned Three Mile
5 Island Items -- a lot of things that were out on the
6 docket for previous units, and that we knew that were
7 still open and not resolved.

8 One other thing though that was beyond
9 that -- after that was established, the Region did an
10 effort to go back and scrub all our databases. We had
11 numerous tracking databases for open items over the
12 years. And as we transitioned between those,
13 sometimes they -- you know, it wasn't a clear trail on
14 how some issues were resolved.

15 We also went back and looked at all the
16 old Unit II and III reports and other intervening
17 reports, looking to establish where each item was
18 resolved from Unit I.

19 And what we find is that there is some
20 vague documents out there on the docket as to what
21 Unit I's status. We would close -- for example, we
22 would close a certain, you know, inspector follow-up
23 item for Unit II, or actually, the last unit, Unit
24 III, and it was inferred that it was resolved for Unit
25 I. But it wasn't clear.

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1 If it wasn't clear to us in the documents
2 that we found, we just threw it on our own internal
3 tracking list. We basically reopened the item in our
4 tracking system, and it was put on the resident's list
5 to start running down.

6 And our effort -- I mentioned before, we
7 were thinking towards the end of this project, we were
8 thinking of the challenges that we could possibly get
9 as to how this particular item was resolved for Unit
10 I. So the focus of our effort was basically to look
11 under every rock.

12 So aside from the stuff that was
13 established between NRR and TVA as far as the
14 regulatory framework, what other loose ends were there
15 that somebody went and started, you know, doing their
16 docket search and started looking at old reports that
17 they'd pull out and say, Aha, you missed this one.
18 That was our intent, was to make sure that nothing was
19 missed.

20 And most of the items that are in this
21 population that I'm talking about were previously
22 addressed for Units II and III, and all -- in almost
23 all cases, they wound up being a paperwork exercise
24 for us to verify that it truly was resolved. But that
25 goes, again, back to our documentation threshold that

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1 we have in our reports, that makes it very clear that
2 we document in the reports that we do look at this and
3 we verify that it's resolved, and now we know it's
4 resolved for Unit I.

5 MR. LARKINS: So now it's the -- would you
6 say the scope then for the restart is pretty much
7 finalized?

8 MR. CAHILL: Yes. And I'll --

9 MR. LARKINS: Because I noticed on the
10 chart before that you talked about scope growth. It
11 sort of seemed like there was still some open items
12 that we're doing --

13 MR. CAHILL: Scope growth -- we're looking
14 closely at what TVA is defining as when they get into
15 systems and work. And right now I think this
16 regulatory framework is pretty firmly established. We
17 have not -- just after we completed this effort early
18 in 2004 was really the last things we were looking at.
19 There really hasn't been anything of a scope growth
20 issue that it's covered.

21 There are some things that are -- that a
22 good example of something that we recently are
23 addressing is the maintenance rule -- the
24 implementation of a maintenance rule. That wasn't
25 really an issue for Units II and III recovery because

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1 the rule wasn't out then. And it's not something that
2 was really clearly defined in the regulatory
3 framework.

4 And it's not truly an open item, but it's
5 something that we know that we are going to have to
6 take a look at to make sure Unit I gets their program
7 up and operating. Just like we did for all the units
8 in the maintenance pool when we did those initial
9 inspections.

10 That is -- those are fairly isolated
11 examples. And that's about the only extent of those
12 scope growth we see. And we're closely monitoring
13 what TVA is doing physically. I mean, they're
14 constantly just scrubbing their schedule and looking
15 at the project.

16 And we're looking -- Mark in particular --
17 his staff looks closely at the schedule, as does Bill
18 Bearden, to see if there is any significant scope growth
19 that's going to alter our plans, because we're fairly
20 resource-loaded out to the end. And scope growth can
21 have a significant impact on both TVA and on our
22 schedules.

23 MR. THADANI: What about issuing -- what's
24 the role of PRA in the scope?

25 MR. CAHILL: The role of PRA is -- the

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1 regulatory framework is not risk-informed. It's the
2 stuff that was established and all the issues that
3 basically needed to be resolved. Just as any unit
4 that's been shut down, we have a restart list.

5 The PRA comes in for this. And it's
6 mentioned a little it in the Manual Chapter. There
7 are other -- there's a lot of activity as you saw.
8 And I'll mention it later. We issued our restart list
9 publicly for the first time as part of the meeting
10 summary for this July 20 meeting. That's the first
11 time our version of it has been out there since the
12 framework TVA has established.

13 But there's a lot of other things going on
14 at that site. There is a lot of -- like the perfect
15 example is the SPOC SPA process you went over
16 yesterday. There is a lot of systems that there
17 really is not anything in the restart scope
18 particularly for, you know, reactor water cleanup. I
19 think that's one we talked about yesterday and in
20 July.

21 And I'm just speaking off the top of my
22 head, but I don't think we have anything in particular
23 associated with that system. The PRA comes into
24 account when we decide which systems we're going to
25 verify they're SPOC and SPA process. How involved are

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1 we going to get? It's a risk-informed decision.

2 Those are risk-significant systems that we
3 really haven't touched and other avenues which -- like
4 Mark mentioned, the IGSCC program, when you get other
5 restart piping replacements. We have been very
6 closely inspecting them, and there's really no chance
7 that we missed that. But if there were some other
8 similar type effort going with a risk-significant
9 system, we would add some additional inspections to
10 our routine oversight to make sure that we had a
11 regular footprint there, that we could see and
12 validate some of what their effort is.

13 MR. THADANI: The generic letter 8820 that
14 went out to licensees, including TVA, asks that the
15 licensees look for opportunities for safety
16 improvements and how they have to do certain things.
17 Is that within the scope to look at that, or has that
18 already been done?

19 MR. CAHILL: Their -- the improvements
20 that they did on II and III as a result of that are in
21 the Unit I scope. And I don't think there was any --
22 basically TVA's intention was to make the operation
23 identical on the -- if there is -- not that I know, to
24 look for new things to add on to Unit I.

25 If they were intending to do something, it

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1 was something they would want to do with all three
2 units. We had -- the PRA has -- it is a special
3 program. So it is a line item on our list that has
4 to be -- a submittal we are going to be inspecting.
5 We have already looked at some of it already.

6 MR. POWERS: There was probably where we
7 asked a number of questions in connection with fire
8 protection at the meeting, and got a minimal amount of
9 information in that regard.

10 One of the issues is where they stand on
11 reconstituting the fire protection licensing basis.
12 My understanding now is that they do. They have done
13 that for II and III. And that it's in the works for
14 I. Who is looking after that?

15 MR. CAHILL: Do you want to take this?

16 MR. LESSER: Yes. That's -- yes, we got
17 inspections scheduled to look at the whole fire
18 protection, Appendix R implementation.

19 MR. POWERS: This is more their licensing
20 basis. I mean, it would be what you would look at
21 prior to doing the inspections. That comes to you
22 when you review and approve it?

23 MR. LESSER: No. Well, no --

24 MR. POWERS: They just set it up and you
25 look at it?

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1 MR. LESSER: My -- I don't -- they would
2 have a safety evaluation from NRR on their program.
3 Okay. We will -- the region will inspect the
4 implementation of that.

5 MR. POWERS: They have five exceptions
6 to -- their Appendix R plant. They ought to be the
7 quintessential Appendix R plant. They have five
8 exceptions to that Appendix R. Do you happen to know
9 what they are?

10 MR. LESSER: I don't know. I can find
11 out.

12 MR. POWERS: They don't seem to either.

13 MR. LESSER: Our inspectors know.

14 MR. CAHILL: Yes. This has been a very
15 big challenge for us in timing when to do this. This
16 is a -- there is a lot of parts to fire protection
17 that fall onto our plate. One is the special
18 program, and the verification of that. We're waiting
19 for, you know, TVA to give us good schedule
20 information on when they're really ready for us to be
21 inspecting. It's been a moving target.

22 We're also -- we have a significant fire
23 protection program in the ROP. And part of our
24 effort, which I'll discuss a little bit later, but we
25 have to figure out a way to transition over to the ROP

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1 inspections. So typically what we've been doing in
2 those areas is first, the most significant ones, we do
3 like the equivalent of a triennial fire protection
4 baseline to try to roll in Unit I to see if our
5 program complied and if there is any loose ends, and
6 if TVA is far enough along.

7 MR. POWERS: Well, it seems to me that
8 this is one of those things where you'd want to go
9 ahead and do the triennial at the front end here
10 someplace.

11 MR. LESSER: Well, we're going to -- what
12 I -- we haven't really started that. That's one of
13 the programs that has not been started in too much
14 substance yet. But we're going to do, you know,
15 special efforts on just Unit I first outside of the
16 ROP, outside of the triennial fire protection
17 inspection. Just for Unit I.

18 MR. POWERS: That's what's -- that's what
19 was very confusing, because at least when you look on
20 the activity charts, somewhere buried down -- if you
21 go enough lines down in the Charter, enough charts
22 through, you'll eventually see there's actually quite
23 a number of activities going on in connection with
24 fire protection.

25 And you can't figure out exactly what's

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1 being done, and you can't -- now I'm not exactly sure
2 where the fire -- where the inspection part of it
3 comes in.

4 MR. CAHILL: We issue -- at the end of
5 this month we issue a -- as part of the ROP, we issue
6 our assessment letters. Also we issue an inspection
7 schedule. And for Unit I inspections we've been just
8 issuing them as part of the Browns Ferry assessment
9 letter. So it's one schedule that Bill Crouch gets
10 that shows all the inspections coming from Browns
11 Ferry.

12 And it's going to have several fire
13 protection inspections. We've got a preliminary
14 one -- I think it was for two people this fall, and
15 then we've got two more scheduled for next year. And
16 they're all -- all in all, it's one of the more
17 significant efforts that we're -- that we have as far
18 as the amount of resources that in the end will be
19 applied before we close up this restart; it will be
20 one of the top five.

21 MR. POWERS: I wouldn't think that there
22 would be a lot to worry about here, because Unit I
23 is -- has escaped all these troubles we've had with
24 fire protection barriers and things like that over the
25 last ten years. And so they have to catch up. And so

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1 there is a lot of catching up to do here.

2 MR. CAHILL: Uh-huh. That's all. All
3 right. You'll have him -- Charlie Payne is on the
4 schedule tomorrow. And he is the branch with that
5 responsibility. And he has been -- he is the closest
6 to the planning and the scope of what's going on with
7 this, and he can probably speak to it better than Mark
8 and I can right now.

9 But it's not something that we have not
10 had on our radar, and it has been something there had
11 been a lot of -- topic of a lot of discussion as far
12 as the sequencing and the scope of what we're going to
13 be doing.

14 Okay. I'll go to the next one. I'm not
15 going to get too far into this. I just want to talk
16 about the TVA schedule and plant condition.

17 Overall, we monitor TVA's schedule pretty
18 closely. And their project is relatively on track.
19 You heard a lot of specifics yesterday. And that's
20 obviously something we're going to pay close attention
21 to, because a lot of our milestones are dependent on
22 their performance.

23 There is a current emphasis by TVA on
24 productivity and making sure that their schedule
25 really does reflect reality. We've been very closely

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1 monitoring the results that they've been getting from
2 that. They want to make sure that they really get the
3 work out of the folks that they need to to keep on
4 their schedule. So that was a significant effort that
5 TVA has been going through the last couple of months,
6 to rescrub their schedules to make sure that they
7 really are where they think they are.

8 And TVA has been very -- the management
9 oversight of Browns Ferry I we've been closely
10 monitoring, and it is very actively and closely
11 monitored by their senior management. They've been
12 holding people accountable, and they've been changing
13 people out when their performance hasn't gotten to the
14 level that they needed. So that's not something that
15 we've had any concern with. Their oversight is pretty
16 close.

17 TVA staffing -- I just -- just to give you
18 a perspective, and I was kind of disappointed
19 yesterday when we went to the reactor building, it was
20 lunch time. So you really didn't get a sense of the
21 pace of activity.

22 But there has been approximately 2,500,
23 2,600 people dedicated to the Unit I project on site
24 for the last two years. And normally, when you go
25 into the reactor building like we did yesterday, there

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1 would just be tons of people around. It was fairly
2 deserted yesterday because of the timing that we'd
3 gone through there on our tour.

4 But the activity level, with that many
5 people on site, was very evident normally when you
6 walk around anywhere. And I wanted to make sure that
7 you understood that, because you didn't get that
8 perspective just through the timing yesterday.

9 MR. SIEBER: Well, that brings up a
10 question that I had, you know. I actually did see
11 some various numbers in my head to come up with the
12 number of 2,500 over that period of time to spend all
13 the money they said they were going to spend. And so
14 that's the number.

15 When I look at what they're doing, again,
16 it looks like there is construction programs. So I
17 asked the question, are you doing this work under your
18 maintenance and modification program? And the answer,
19 I sort of gathered, was some of it is, most of it is
20 not.

21 And so I have to ask myself, a plant under
22 construction that is doing this kind of work under a
23 construction program has an altogether different set
24 of procedures than an operating plant has. And --

25 MR. CAHILL: That's one thing, when TVA

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1 laid out in the beginning they were going to use the
2 same programs and processes, when they're doing all
3 these changes, the physical changes that you see in
4 the plant, they are using their normal design change
5 modification program. They mention DCN as their term,
6 Design Change Notification. That's their term that
7 they use on all their -- all three of their sites, and
8 it's the process that they're using on Unit I, just as
9 Unit II and III were in an outage. It's the same
10 process.

11 MR. SIEBER: Now, they had a -- most
12 licensees had a set of construction procedures that
13 told you things like how to fit up pipe and how to
14 make welds and how to do M-preps and how to install
15 hangers, and how to determine a wire and label and all
16 this stuff.

17 I take it those are referenced by their
18 design change process and engineering change notices?

19 MR. CAHILL: Those are the specific
20 procedures. I mean, I -- they've got -- TVA has a
21 robust set of different procedures off the shelf for
22 all different disciplines. And they've got those, and
23 those just weren't construction-unique. I mean, they
24 still do some of those activities. They still have
25 those.

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1 MR. SIEBER: Yes, most licensees do. One
2 of the things, I guess, that brought all this whole
3 line of questioning into my head was back when I asked
4 them about organization, you had a maintenance program
5 over here and a construction-like program over here.
6 And it was married at a pretty high level.

7 And you know, I was sort of surprised at
8 that, and needed to know, which they really didn't
9 tell me, whether there is one overall blanket plant
10 maintenance program that includes not only repair, but
11 replacement of commodity-type stuff like piping and
12 wires and so forth. And whether they're treating it
13 as one would treat a small design change like if
14 you're installing a feedwire control system or
15 something like that.

16 And I think what you're telling me is
17 that, yes, it is blended into the plant procedures,
18 and the construction procedures and the field
19 procedures are referenced in part of the plant set,
20 and when you're inspecting it that way.

21 MR. CAHILL: What they presented to you
22 yesterday, when they talk about their Mods
23 organizations and their maintenance organization,
24 that's TVA's standard organizational setup at all
25 their sites, and it's the same organization they used

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1 at previous recoveries.

2 They had a conscious division that
3 modifications is the organization that implements the
4 design changes from engineering all the way up to the
5 final testing before it gets turned over to the
6 operational side. And that's part of what the SPOC
7 SPA process of the men in the maintenance organization
8 wanted, as far as the maintaining and the -- the --
9 you know, all the things that go with the normal
10 maintaining of the system that is not considered
11 operable, and on the operational side of the plant.

12 So they keep a firm line organizationally,
13 and in their process with that, that MODS owns it
14 until it's done -- done done, as Rupert said
15 yesterday -- and turned over to the operational side.

16 MR. SIEBER: I guess how they do it is,
17 you know, up to them. There's a lot of folks who --
18 some do it that way, other -- a lot of them they don't
19 do it that way. But that's okay. That's not for us
20 to decide. But I did need to understand it.

21 MR. CAHILL: Just to give some insight on
22 that staffing level. I mean, initially, when the
23 project was started, the bulk of that large work force
24 that I had there was engineers and those type of
25 folks. And gradually, as the engineering work has

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1 been resolved, it has been shifting. The engineers
2 are going away and there has been a lot more
3 craftwork. And it's pretty stable now.

4 Just to give you some insight. The
5 beginning of projects, there wasn't a whole lot for us
6 to inspect. The engineers were doing design work.
7 And most of the physical work that was going on in the
8 plant was what we phrase demolition. They were
9 removing all that piping that they've been telling you
10 they've been replacing.

11 We did do some inspections that early in
12 the program. Just one of the ones that comes to mind
13 is the health physics inspections. We verified that
14 they were applying health physics programs and
15 managing, you know, LARA principles and doing all the
16 right things as far as this demolition program was
17 concerned. But it's -- aside from that, there wasn't
18 a whole lot of things that we needed to have on our
19 regulatory plate that we needed to look at in early
20 phases of the project.

21 The fact that some of the outputs of their
22 design -- and something Luis Reyes wanted to make sure
23 we got involved with early, is doing some reviews, and
24 once they had designs done. And Marks's inspectors
25 were most of the ones doing that early in the program.

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1 And Mark is going to go through -- I
2 didn't really lay this out in the beginning, but he's
3 going to go through a lot of the specific inspections
4 and specific areas we looked at. So I'm not going to
5 go touch too much on that.

6 I did want to mention I did had a little
7 bit to talk back here about the SPOC process. I
8 mentioned yesterday when TVA was talking about it,
9 this is a process we're very familiar with. It's the
10 same one they've used previously on the Unit II and
11 III recoveries, and they used at Watts Bar when they
12 licensed it.

13 So we understand that program. We've
14 already inspected it as a program. So we understand
15 it -- they're doing pretty much the same thing they've
16 always done. And we know that the program, if
17 implemented properly, works. So we started on some of
18 those support systems. We had done a couple of
19 inspections on some of those. And then you mentioned,
20 you saw it in some of our reports.

21 We're not planning to look at every -- I
22 think they have 60-some systems. I mean, obviously
23 this is where it's going to be a risk-informed.

24 And for some of those ones, their systems
25 will have some other means -- or reasons for looking

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1 at that system, and other ones we're just going to
2 take another -- the ones that are risk and safety
3 significant, we'll make sure that we include those in
4 the scope of our routine inspections.

5 The second simulator that they mentioned
6 yesterday -- they did just submit a letter to us
7 saying that they completed all of the ANC testing and
8 they gave you enough information on that yesterday,
9 the need for it, that we think it was a very proactive
10 and a good move on their part, because with the number
11 of new licenses that they've got in their pipeline,
12 plus the recall demands for the three-unit site, that
13 it would really be onerous to try to come up and run
14 with just one simulator with the current operator
15 requirements that exist.

16 So we've looked briefly at the scope of
17 what they put in that simulator, and we don't -- we're
18 not planning to do any more overview or inspections of
19 it. It's complete, and they're going to be using it.
20 Everyone will get a chance to be involved with that
21 when we do re-qual inspections and the initial
22 operator licensing exams.

23 I'm just going to go through NRC
24 inspection status. And beginning in 2003, we started
25 issues the integrated quarterly reports, so all the

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1 inspection effort that we do for Unit I is contained
2 in one integrated quarterly report that goes on the
3 calendar quarter.

4 Aside from some Torus support issues that
5 resulted in some escalated enforcement in 2004, which
6 Mark will discuss, Browns Ferry I performance has
7 overall been pretty good. There's been very few
8 issues identified.

9 Our Recovery Issues List is fully
10 developed now. This is the -- most of the standard
11 restart lists that any other unit that we've ever
12 recovered or been in an 0350-type process, we've
13 always had a recovery issues list.

14 It incorporates most of the items -- well,
15 it incorporates all the items from the regulatory
16 framework that TVA and the NRC agreed on in 2003. And
17 it also adds some other things on there that we've
18 mentioned before, like maintenance rules, one we're
19 going to be adding on there. Just make sure we've got
20 that tracked as something that we need to take a look
21 at for restart.

22 And we're going to be using that also as
23 their tool for any other thing that would come out
24 like license renewal, or EPU reviews that will be tied
25 to restart. We're going to try to include them in

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1 also.

2 But that was issued for the first time as
3 a public document the beginning of this month when we
4 issued that meeting summary. That was a significant
5 milestone for us to get at the point where we could
6 actually share publicly with TVA and make sure we're
7 working off of a common list.

8 And in that, all items that are in that
9 have an owner. Most of the owners are either the
10 resident inspectors or Mark has a large stable of
11 specialists that own each issue, each line item on
12 there.

13 And one of the things you also see there
14 is sometimes there is two names. From the beginning
15 of this, a lot of the folks that are owners of the
16 folks that were involved in the Unit II and III
17 restart or have a lot of experience here in the
18 region -- those are the fellows that are close to
19 retirement.

20 So we paired most of them up with a lot of
21 the newer staff we have, to make sure that we've got
22 defense in depth for any issues. Somebody decides to
23 retire earlier than we had planned, and also just to
24 help with the development of some of the newer staff
25 we've had.

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1 So usually when Mark sends somebody out
2 for a review of a special program, it's two people.
3 It's the owner and the newer fellow or lady that's
4 fairly new to the agency.

5 Other things that we tried to include on
6 the list which was a significant project to pull
7 together was if there was any Unit II or III
8 precedents for closure issue, and any other actions
9 that were put out. There is a lot of SCRs,
10 particularly from the Unit II recovery. We tried to
11 reference those to make sure this list was complete.
12 And it would -- it's really a very significant tool
13 for our inspectors when they go out, to be able to
14 understand what cross-references and what precedences
15 there are for each one of the issues.

16 TVA started at the end of last year
17 issuing a quarterly restart items update report. So
18 everything that they have on their regulatory
19 framework they issue a quarterly summary of where they
20 stand with all those, and what their plans are, which
21 ones they consider closed, and when they are planning
22 to tell us that things are closed.

23 And now that we've issued our list
24 publicly, it will make those line up a lot better in
25 sync, and then we can do more effective planning

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1 between the two of us. But that's been helpful just
2 since TVA has started doing that, for us to make sure
3 our planning is set.

4 Our work-off projections, which are
5 somewhat dependent on TVA's plans -- but we're looking
6 at trying to get the bulk of the open items closed in
7 advance of when they really start restart activities,
8 because our focus towards the end, as you heard
9 yesterday, is going to be more operational, how to
10 integrate this unit into the operating units, and you
11 know, we're planning to do some sort of ORAT --
12 operational readiness assessment team -- overview,
13 towards the end.

14 So our -- this inspection schedule, I
15 mentioned again before, that's going to come out for
16 Browns Ferry is a fairly significant work for us,
17 because it's an 18-month schedule. And it carries
18 through a lot of this project to the end. So we have
19 to make sure we have all the resources aligned to make
20 sure that we get all these things that are on our list
21 closed.

22 MR. POWERS: We have spent quite a lot of
23 time discussing their operational readiness review.
24 And I think it seems like a fairly-extensive
25 undertaking that they got. Have you looked in detail

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1 at their plans?

2 MR. CAHILL: The plans that Mr. McGrath
3 presented yesterday?

4 MR. POWERS: Uh-huh.

5 MR. CAHILL: Not in detail. We've looked
6 at them and -- from the point of view that what they
7 are proposing to do is fairly similar to what they've
8 done with the other recoveries, what they did with
9 Watts Bar when they started up. And from that point
10 of view, we consider it an appropriate level that
11 they're getting a lot of -- putting the onus on their
12 organizations to do their own self-assessments. And
13 they're also getting appropriate third-party reviews.

14 I was a resident of Watts Bar when they
15 started up. And what I've seen that he presented to
16 you yesterday is very analogous to what I saw when
17 they did the Watts Bar when they started up.

18 I -- we don't have any concerns with what
19 their plans are right now.

20 MR. PLISCO: I think once we stand up to
21 the oversight committee -- that's really one of their
22 primary focuses, is, you know, looking at the end game
23 of what we need to do and what they're doing at the
24 end.

25 And that's why we stand up there.

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1 Oversight is not only to go back and look what Steve
2 and Mark has done, make sure we've got a ribbon tied
3 around everything, but also looking -- you look at the
4 end game and how we're going to do that.

5 MR. POWERS: The usual feeling in an
6 operational readiness review is that there is so much
7 to do that you miss things if you try -- start too
8 late. And then you really have to get in very early
9 in the operational readiness review, or you will -- I
10 mean, it's just human nature. You start blowing off
11 things -- just because there's so much to do.

12 MR. CAHILL: That's one of the things I
13 was driving at. I decided to get an extra resident
14 out there, someone with an operational focus to get
15 there and get acclimated and be able to basically do
16 some inspections of those typical activities.

17 ROP Cornerstone Transition -- I just
18 wanted to touch on that. And per the Manual Chapter,
19 we're allowed to take an individual cornerstone basis
20 and transition things into the ROP. And some of the
21 framework that was laid out for that was to do
22 transition inspections and track all this with the
23 transition matrix on each cornerstone.

24 And when I say transition matrix, we're
25 looking at, you know, for us to be able to say a

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1 cornerstone is monitorable under the ROP, means that
2 performance indicators have to be valid, in effect of
3 course, and we need to be able to do our baseline
4 inspections.

5 So we did transition inspections in 2004
6 for -- in several areas which I'll discuss later, to
7 make sure that they were ready for that. And that we
8 sent out inspectors that normally did those baseline
9 inspections to say, Look and make sure that these
10 procedures would be -- could be appropriately used for
11 the activities that are going on on Unit I.

12 And also a thought I had is to make sure
13 there is also no open items -- restart items
14 associated with those cornerstones. So the end of
15 last year we did verify that four cornerstones were
16 appropriately resolved that we could transition them
17 into the ROP.

18 I'll just -- I'll mention the criteria
19 that's laid out in the Manual Chapter which is doing
20 this transition. It's corrective actions for the
21 restart items have been completed, performance
22 improvement changes have been made in these
23 cornerstones, and programmatic aspects have been
24 verified as satisfactory during the operations of
25 Browns Ferry Units II and III.

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1 And there can be four operational units.
2 II and III have a pretty good track record. So we met
3 those criteria. And we issued a letter on December 29
4 of last year that put four cornerstones into a ROP
5 approach as of January 1 of this year.

6 And on the ones you might expect, it's two
7 radiation safety ones, occupational and public
8 radiation safety, emergency preparedness and physical
9 protection. And the commonality with those four
10 cornerstones is that there is really nothing Unit-I-
11 specific about any of them.

12 As you saw yesterday, Unit I is just one
13 more unit in the site security perimeter. There is no
14 special security provisions for Unit I that would
15 impact that program. So our inspectors can go inspect
16 site security at Browns Ferry and roll Unit I in there
17 fairly seamlessly.

18 And there is -- of those four
19 cornerstones, there is really no open/restart issues,
20 so as of this beginning of this year, when we sent out
21 an inspection team doing a baseline inspection of
22 units II and III, in those four areas, they're
23 including Unit I.

24 The other three cornerstones are a lot
25 more system dependent. And as you saw with a lot of

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1 systems, for mitigating systems that will not be ready
2 until TVA starts up. So this is part of the phased
3 approach. It's a lot more effective for us to do it
4 for these cornerstones, but they won't -- we'll hold
5 out until those other cornerstones -- the equipment is
6 ready, and then we can actually do our baselining.

7 We can do our regular maintenance role
8 inspection on Unit I equipment. And that won't be
9 ready until the last piece of equipment is back in
10 service. So -- and at that point we'll make a
11 conscious decision sometime after the Unit I restart
12 to where those cornerstones are, are they ready to be
13 covered under the ROP? Is there any loose ends? And
14 at some point, after they recover, we'll actually say
15 that they're in the ROP.

16 Part of that was this -- the performance
17 indicators for some of them that are system dependent,
18 it takes some time for that data to go in. But we do
19 have provisions for that. We used that for DC Cook.

20 But they -- when you don't have
21 performance indicators, you can supplement that with
22 inspections. So that's part of our plan, is to --
23 we'll be inspecting some areas that we don't have
24 valid performance indicators for after they start up.

25 MR. POWERS: We spent some time talking

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1 about growing pains yesterday. And the growing pains
2 are real. And we have a new system, I don't care how
3 much it looks -- how much they think it looks like
4 Unit II, it's not Unit II.

5 And will that not create a perturbation in
6 the performance indicators? You know, the first six
7 months it's not going to be like the next three years.
8 And did you have to kind of go king's X on the first
9 six months? And -- I mean, it's just -- it's a
10 speculation on my part, but --

11 MR. CAHILL: And that's part of what Norm
12 was saying, you know, the oversight panel, that that
13 transition and when to say went through the normal
14 routine process. It's -- there is a lot factors that
15 we can't figure out exactly how they're going to fall
16 into place right now. So it will be an informed
17 judgment as to when the right time to say that they're
18 in a normal ROP.

19 MR. POWERS: Yes, I think it would -- I
20 mean, I suspect that's the answer. It has to be an
21 informed judgment. I don't think you can sit down,
22 okay, six months and 13 days after they start, we're
23 now in the full ROP. I mean, I don't think you can do
24 that.

25 MR. CAHILL: If you look through the

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1 Manual Chapter you can see that we thought about that
2 when we wrote the Manual Chapter, that, you know, the
3 restart panel will not dissolve once the unit gets up
4 to a hundred percent power. I mean, it's going to
5 stay in effect to make -- to manage this transition.

6 MR. POWERS: Well, they -- you probably
7 just carry -- it's something like classic inspection
8 and monitoring -- going on, slowly bringing ROP in
9 parallel, and then one starts disappearing and the
10 other one starts taking full force, or something like
11 that.

12 It looks like that. Otherwise, you create
13 a burden on the plant that's kind of unfair, because
14 that's inevitable that, you know, equipment just never
15 seems to behave quite the way their engineer wrote it
16 down on a piece of paper.

17 MR. CAHILL: And we were informed -- as I
18 said, we had some lessons learned from DC Cook we were
19 able to apply.

20 MR. POWERS: Okay, yes. I see you're
21 right.

22 MR. PLISCO: They had a similar situation.
23 They didn't have any data, and so we took some lesson
24 plans from that exercise and plotted it out how we're
25 going to approach it.

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1 MR. POWERS: That's a challenge you guys
2 face. That's -- better you than me.

3 MR. CAHILL: One key tenet with drawing
4 those cornerstones in the ROP is that we're going to
5 use the normal process just for inspection, and
6 enforcement, if issues came up like the health physics
7 issue comes up now, we'll be able to use the
8 significance determination process for that, and issue
9 a finding and using a color in a normal process, as
10 opposed to traditional enforcement. And that is our
11 intent.

12 But the key point is that Unit I is not in
13 the ROP until the last cornerstone is transitioned and
14 there is a decision made that they're in there, and
15 the action matrix is effective.

16 MR. POWERS: Okay. I understand now.

17 MR. CAHILL: Even though what we're doing
18 is an ROP treatment of the cornerstones, is the --

19 MR. POWERS: Yes.

20 MR. CAHILL: -- phrase you'd like to use.

21 MR. POWERS: I think that's probably a
22 good idea. Then you can control when you put it in.

23 MR. CAHILL: Just some plans coming up.
24 I mentioned we're going to establish the restart panel
25 for the fiscal year. We're also -- NRR is planning a

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1 Commission Communication Paper. We recognize we have
2 new commissioners, and that they might not be familiar
3 with some of the stuff that we communicated
4 previously.

5 So that's going to just be put up as an
6 information paper to make sure the Commission is aware
7 of the status of what our plans have been thus far,
8 and what they are going forward. And we did get both
9 of the new commissioners. They were down at the
10 Browns Ferry very early after they were confirmed.

11 Just a couple of other topics I wanted to
12 touch on. Safety-conscious Work Environment and
13 Employee Concerns Program and the Allegation Trends --
14 this is something that we pay very, very close
15 attention to. There is -- whenever you have a large,
16 transient work force of the nature of Browns Ferry I,
17 there are concerns that are going to come up as
18 people's jobs end and they get laid off.

19 We recognize that. We've dealt with that
20 at the other recoveries. We've dealt with that at
21 Watts Bar. And we want to make sure that we're very
22 proactive with recognizing new trends, and if there is
23 any issues that need to be communicated to TVA
24 generically.

25 And we've actually had some success in

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1 that. You know, very early in 2004, there was a spike
2 in issues coming up with their labor contractor, but
3 while not being able to divulge specifics to TVA, we
4 saw a trend that we communicated to them, and TVA very
5 proactively went out and addressed those, and did
6 everything we would expect them to do and more to make
7 sure that that trend was nipped in the bud.

8 So without getting into too much
9 specifics, I wanted to just make the point that we're
10 very closely monitoring this. But the activity and
11 the type of concerns we're seeing are what we would
12 expect of a project of this size and scope.

13 So right now we do not have a Safety-
14 conscious Work Environment concern with the Unit I
15 recovery. But I just wanted to make sure that it was
16 clear that we were very closely looking at that.

17 The other thing I wanted to talk about
18 was -- oh, I forgot to mention. Routine
19 interaction -- my senior residents meet monthly with
20 the Employee Concerns Program coordinators for TVA.
21 And they have different Employee Concerns Programs for
22 some other contractors, like Bechtel, the engineering
23 contractor, has one. Stone and Webster, the labor
24 contract, has their own employee concerns program with
25 Lee.

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1 My inspectors meet with them routinely
2 just to see the type of activity they're seeing, to
3 make sure that it -- you know, corresponds with the
4 type of trends we're seeing. So that's just one of
5 the things that we do to make sure we're keeping our
6 finger close on the pulse of this.

7 MR. POWERS: I'm struggling with the
8 initial, as in SWEC?

9 MR. CAHILL: That's Stone and Webster.

10 MR. POWERS: Stone and Webster.

11 MR. CAHILL: Stone and Webster Engineering
12 Corporation. We throw that around routinely, and
13 we're used to it.

14 MR. POWERS: I don't.

15 MR. CAHILL: I tried to scrub out my
16 acronyms, but I missed one. All right. The last
17 thing I want to talk about was this Public Interest
18 and Involvement. Jack mentioned yesterday that -- you
19 know, he saw that we do have a web page we set up;
20 it's linked up with the main ROP page.

21 But if anybody's going to look for Unit I
22 information, we figured that's probably the first
23 place they'd look. And we put a link there that they
24 can find pretty easily. And it includes that -- links
25 to our Manual Chapter, links to our reports, links to,

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1 you know, significant meeting summaries. So if
2 anybody that's out there, and a member of the public,
3 is interested on what our oversight is on Unit I, and
4 what type of issues are going on in the -- we're
5 finding that they can pretty much access them off that
6 web page.

7 MR. WALLIS: Do you have any evidence that
8 it's actually visited?

9 MR. CAHILL: Ed made mention -- I'm glad
10 that he looked at it, but no, actually what I wanted
11 to touch on was there's really not a lot of public
12 interest. There's a lot of opportunities for the
13 public to be involved with Unit I. There has been --
14 you know, the normal public meetings we have for --
15 are subsequent meetings for Units II and III. There
16 is an annual public meeting that I conduct, which is
17 talking about how they're doing in the ROP.

18 We've had several license renewal public
19 meetings. But I mentioned the rotating public
20 meetings that we've had just to discuss specifically
21 Unit I restart that have been in all different sites.

22 We've had press conferences when some of
23 the Commissioners have visited. And the turnout is
24 very low. The area and the vicinity of Browns Ferry
25 is very supportive of it. And there is not a lot of

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1 active intervenor groups.

2 There are some groups that we used to see,
3 you know, particularly with Watts Bar. But they're
4 very fervently anti-TVA. And we expected that. This
5 is part of what I was preparing for again. I expected
6 to be challenged by these groups at the end, just like
7 Watts Bar was when they started up.

8 But we have not seen very much activity
9 out of any of them with the Unit I recovery. So it
10 makes our job a lot easier. But we wanted to make
11 sure that we had the opportunities, that they could
12 understand what was going on and be able to
13 participate as they always did.

14 MR. WALLIS: So when you say turnout is
15 very small, what sort of numbers are you talking
16 about?

17 MR. CAHILL: Two or three people.

18 MR. WALLIS: Two or three people, usually.

19 MR. CAHILL: Usually it's reporters.

20 MR. WALLIS: So when we go up to Vermont
21 and we get 2,000 people --

22 MR. CAHILL: Very different environment.
23 Very different plants.

24 MR. POWERS: That's exactly the same
25 number, frankly. There are four people around Browns

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1 Ferry. Half of them showed up.

2 MR. BONACA: My question is regarding the
3 power ascension program. From what I understood
4 yesterday, the plan is the one of, you know, start the
5 power, going up to the license -- to critically
6 licensed power level, and then to continue up to 20
7 percent above. Okay. Are you concerned at all about
8 that? I mean --

9 MR. CAHILL: That's something that we --
10 it will definitely fall into our lap to have oversight
11 of. But right now it's a little -- we just got the
12 submittal from them that Margaret in NRR requested
13 some months ago. So the region hasn't even digested
14 it yet. And that's the restart power ascension plan.

15 And a lot of that really is going to be
16 tied to the outcome of the extended power upgrade.
17 The region has been involved with the meetings that
18 have gone on in the initial submittal, and what we've
19 communicated consistently to NRR is that, you know, as
20 concerns come out of our approval for the extended
21 power upgrade, if there is anything that is very
22 germane to their decision or concern that they would
23 have that we think should be something that TVA
24 incorporates in their power ascension test program,
25 that --

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1 MR. BONACA: Well, I mean, I understand
2 that if I do not -- my only thought after the meeting
3 was during the presentation, I got a sense that
4 they're going to the licensed power level, it's going
5 to be normal effect. And no, it's not. I mean, this
6 is something new. A lot of the equipment has been
7 changed. It's going to be challenging enough to go to
8 the currently-licensed power level.

9 MR. CAHILL: They did not get into a lot
10 of the details of what they planned, but again --

11 MR. BONACA: Well, I say that, you know,
12 they will go up and then come back to the currently
13 licensed one in case there were problems: vibration
14 or whatever.

15 MR. CAHILL: They do a lot of things at
16 each of those plateaus. Again, what they describe --
17 and they were very brief with you yesterday. They
18 didn't get into any of the details. But what we have
19 seen and what they described yesterday, again, is very
20 analogous to what we've seen with their other
21 recoveries, and when they started at Watts Bar.

22 Their SPOC and SPA process feeds a lot of
23 these things. So each of these plateaus will be a
24 huge laundry list of things that need to get
25 accomplished at that plateau before they go on.

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1 MR. BONACA: That would be nice
2 protection, you know, at the existing power level,
3 then you have to sit there and perform a number of
4 tests, I imagine, and then verification of that.

5 You would want to separate what you're
6 going to expect to see as a result of restarting the
7 plant from the power-up rate. They're two different
8 issues at this stage, and I think that -- okay. I
9 recognize it's kind of premature to expect.

10 MR. CAHILL: Regardless of the upgrade,
11 and we haven't -- like Juan said, when the restart
12 panel convenes, this is usually a judgment on exactly
13 what type of oversight we're going to have. But
14 typically, what we've had in the past for any of these
15 recoveries has been the 24-hour coverage.

16 And we're very closely monitoring things
17 that are on their plateau milestone list that they
18 have to get accomplished. You know, specifically
19 there's something that we had some other reasons that
20 we cared about it, because it was related to some
21 special program. And it would be something that would
22 be on our inspection list to make sure that they did
23 get this thing verified at this power level, and so
24 forth and so on.

25 I can't articulate exactly what we're

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1 going to do yet, because we're still waiting to digest
2 what TVA's plans are. But we've been very close to
3 those efforts in the past, and make it -- the biggest
4 intent of that is basically to be looking over TVA's
5 shoulder to make sure they make the right decisions.
6 I mean, our inspectors are very good at relaying that
7 information up, and we have you know, usually folks in
8 Loren's role are the ones hearing about, Well, what
9 happened last night at this plateau? And if there is
10 any question about, you know, the judgment TVA is
11 applying, it will quickly get communicated and acted
12 upon.

13 We've had a lot of VIP visits over at the
14 sites. Bill Kane's been over there; Luis Reyes, the
15 NRR division directors, and Chairman Diaz has been
16 there, as have both the new commissioners. So we're
17 getting a lot of -- TVA has been very proactive with
18 the open invitation, because they want to get people
19 just like they got you there yesterday, to see the
20 scope of what their efforts are.

21 And so most of our senior management has
22 been to Browns Ferry at some point in the recovery to
23 see the scope of that.

24 So -- and the last thing, I just wanted to
25 mention on communications was we do have communication

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1 plans, both one for the region and one for NRR that
2 have been established to -- some of our communications
3 plan is really incorporated in the Manual Chapter.
4 But subsequent to that we laid out, you know, pulling
5 our current expectations as communication plan, laying
6 out how we're going to do all this. And I think I'm
7 going to let Mark talk a little now.

8 MR. LESSER: Oh, thank you, Steve. As
9 Steve said, I'm Mark Lesser. And he's tipped you off
10 a little bit of what I'm going to talk about. But I
11 am the chief of engineer Branch III in Division
12 Reactor Safety.

13 And my role is -- has been coordinating
14 the regional inspections of the licensee's special
15 programs. They don't -- they're not -- the inspectors
16 are not all in my branch, but we're tapping all of the
17 engineering branches and all of the branches in DRS to
18 help support this.

19 And I coordinate their inspections with
20 their other duties, baseline inspections; make sure
21 that they understand the peculiarities regarding
22 Browns Ferry Manual Chapter, the differences in the
23 ROP, the differences in enforcement, and that they get
24 their plans and their schedules aligned.

25 But let me give you an overview of what

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1 I'll talk about, basically three different areas.
2 I'll discuss the TVA special programs that are being
3 inspected by Division of Reactor Safety, and I'll just
4 go over two examples of the special program in just a
5 little more detail to give you an idea of what the
6 scope of that is, and how it became a special program.

7 And then I'll discuss this regional
8 inspection, particularly plans, status, and some
9 results of our inspections. The first grouping of
10 special programs, you may have seen these before
11 already, Civil/Structural. There is a list in there
12 of the programs that have been identified as needing
13 attention: Long Term Torus Integrity, Piping
14 Supports, Cable Tray Supports, HVAC Duct Supports,
15 basically seismic issues, things like that, and prove
16 to Mike that core convenience, because that's how
17 we're assigning them to our inspectors

18 Electrical programs --

19 MR. POWERS: When you talk about Long Term
20 Torus Integrity, or -- is that a corrosion issue?

21 MR. LESSER: No. That was -- it's really
22 the dynamic effects of post-local effects on -- in the
23 water with the Torus that was really identified back
24 in the early '80s on all Mark-I boilers. And that's
25 their program, to get that up in accordance with our

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1 generic letters on that.

2 MR. WALLIS: When do you inspect a
3 program? I mean, program -- you can expect a very
4 different job. You can just look at what they say
5 they're doing on paper, or you can go and look at,
6 Well, how did you do this torus integrity? And what
7 did you find? And show me the evidence, and that sort
8 of -- you get right down to, you know, understanding
9 what they're doing at the -- what the -- on the
10 deepest level.

11 MR. LESSER: Yes.

12 MR. WALLIS: How deep do you go when you
13 do this, the inspection of a program?

14 MR. LESSER: Well, I was going to get to
15 that. But I'll answer that right now. The programs
16 were really established with the restart of Unit II in
17 the '80s. And at that time, as you know, TVA was
18 under the Office of Special Programs. And their
19 program was being defined through a series of
20 extensive overview with the NRC staff, with -- I guess
21 the Office of Special Programs staff.

22 And the scope of the program that the
23 engineering is really well-documented in NUREG 1232,
24 which defines how they -- what the problems were, what
25 they needed to do to fix it, what their corrective

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1 action is, and the NRC's acceptance of it.

2 And the program itself was inspected very
3 heavily with the restart of Unit II. As Unit III and
4 then subsequently Unit I has come up, we made the
5 decision not to spend a lot of resources inspecting
6 the program, as long as it's similar to the other
7 units, because it's already been --

8 MR. WALLIS: As long as they say they're
9 doing the right thing it's okay?

10 MR. LESSER: As long as they say they're
11 doing the right thing and then we sample to make sure
12 they're doing the right thing, and that's part of our
13 plan, we want to make sure they're doing the same
14 thing on Unit I as they did on Unit II.

15 If we can make that conclusion, then our
16 general plan is to sample implementation of that
17 program, through observing of modifications.

18 MR. WALLIS: There are a lot of things if
19 your sampling theory is fairly well-developed. Is it
20 well-developed here? How much sampling do you have to
21 do to have confidence X that the unsampled portion of
22 the program is flaw-free?

23 MR. LESSER: Not to that extent. It's
24 a -- the Manual Chapter basically -- we did not define
25 the number of samples like you would see in a baseline

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1 inspection of an ROP procedure. What we have done is,
2 based on the results of our inspection, there is
3 interaction between myself, the inspector, DRP, to
4 decide, you know, how -- do we have problems? Do we
5 have violations in that area? How much more do we
6 need to do?

7 So it is very much subjective and
8 judgmental to come to the conclusion when we're done
9 inspecting.

10 MR. MCCREE: And just to add, to that
11 extent, it's analogous to the Reactor Oversight
12 Process. We could not employ sample theory, if you
13 would, but it's based on decades of experience to
14 identify what the sample size and frequency is.

15 MR. LESSER: And I'll give you a good
16 example of where we had this -- where we decided we
17 had to do much more inspection than we initially
18 thought we would.

19 Next slide, Electrical Programs. These
20 are grouped, Cable Ampacity, Installation, Cable
21 Installation, Splices, Issues, Fuses, Thermal
22 overloads, to give you an example of those.

23 In Material Programs, there is a special
24 program on Containment Coatings and Inter-granule
25 Stress Close and Crack in the Piping, and in

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1 Engineering Programs, Configuration Management/Design
2 Baseline, Design Calculations, Fire
3 Protection/Appendix R, Environmental Qualification,
4 Probabilistic With Safety Assessment.

5 MR. DENNING: Hold on, just a second. I'm
6 not getting a good feeling as to what you're actually
7 doing related to Unit I right now on these programs,
8 versus -- and perhaps you could contrast it with,
9 like, Unit II and III? I mean, how do you actually --
10 I mean, do you go to the plant and you look at how
11 these are being done right now at Unit II?

12 Is there any difference? At this point,
13 with Unit I, I guess, coming back under this type of
14 inspection, do you do a virtually identical type of
15 review for Unit I as Unit II? Or what are you doing?

16 MR. LESSER: No. They are very different.
17 Again, Unit II and III are under our baseline
18 inspection programs, under the Reactor Oversight
19 Process.

20 MR. PLISCO: Are you saying two or three
21 previously?

22 MR. DENNING: Yes. Right. No, I really
23 mean Unit II and III right now, versus what you're
24 doing with Unit I right now.

25 MR. PLISCO: Very different, very

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1 different. Unit II and III are being inspected under
2 the baseline under the ROP. So we've got the standard
3 baseline inspections. Unit I is being inspected
4 totally separate from that.

5 MR. DENNING: And how does that review
6 differ from what you do under the ROP? What do you
7 physically do differently?

8 MR. PLISCO: It's driven by what the scope
9 of the program is. I mean, you --

10 MR. DENNING: Yes.

11 MR. PLISCO: Mark is just going to go
12 out --

13 MR. LESSER: Well, yes, I'll give you --
14 actually, a little bit later I've kind of got an
15 example of what an inspector's plan is. And maybe if
16 you'll hold that question, I think I'll get to that.

17 MR. WALLIS: Doesn't it get back to my
18 other question about the difference between a
19 construction program and a maintenance program? The
20 whole thing is being rebuilt. And we -- they kept
21 telling us they've replaced everything. So that's --

22 MR. POWERS: No, we've replaced damn near
23 everything.

24 MR. WALLIS: It's a completely different
25 game. You want to see how well they've replaced it,

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1 and did they really inspect the welds? Did they treat
2 the welds properly when they took a pipe out and put
3 a new one in? It's quite different from routine
4 inspection.

5 MR. LESSER: Yes. And in fact, and we've
6 had several inspections of pipe welding over the last
7 few years totally above and beyond what would normally
8 be required on an operating unit. Okay. Just
9 to inspect --

10 MR. WALLIS: And you'd have electrical up
11 here. They put in, I forget how many, 18 miles of
12 cable or something.

13 MR. LESSER: But we've got inspections of
14 each one of these activities going on, okay, pretty
15 much for the last few years. And --

16 MR. WALLIS: What about the cable trays?
17 Are they allowed to put as many cables as they like in
18 a tray, so it's all stacked up? Or is this
19 something --

20 MR. LESSER: No.

21 MR. WALLIS: We saw these cable trays with
22 all kind of stuff in them, overflowing maybe --

23 MR. LESSER: They have to install in
24 accordance with the criteria that's been approved
25 within the safety evaluation. Okay.

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1 MR. WALLIS: So you have some assurance
2 that they've done that?

3 MR. LESSER: That's what our inspections
4 do. Yes.

5 MR. WALLIS: You actually go and look at
6 it and measure, or whatever?

7 MR. LESSER: Yes.

8 MR. WALLIS: Okay.

9 MR. LESSER: We actually go and sample
10 cable installation.

11 MR. RANSOM: Have the inspections turned
12 up any problems?

13 MR. LESSER: Yes. And I think I'll
14 address that one, too. I've got --

15 MR. SIEBER: By the way, I think it's
16 better to say that you do these inspections on
17 operating plants. And since they don't replace pipe
18 very often or pull new cable very often, these
19 inspections are very infrequent.

20 MR. LESSER: On operating units, yes,
21 that's true.

22 MR. SIEBER: And so that's really the
23 difference.

24 MR. BONACA: One thing of interest to us,
25 as you go through some description of this, you know,

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1 inspection which you went through, is clearly they
2 have replaced components, and in many cases, they have
3 addressed aging concerns in the replacement itself.

4 For example, they're going to, you know,
5 chromalloy pipes to -- in areas where they knew that
6 there was a concern with an 0600. So to what extent
7 is this information then conveyed to the people that
8 do the inspections for license renewal? I mean --

9 MR. LESSER: Carl Julian is going to speak
10 after Mark. And he's going to speak to --

11 MR. BONACA: Okay. Yes. At some point,
12 whenever he gets to that point, it would be
13 interesting to ask where they stand, because it's
14 really significant, it seems to me, to be a license
15 renewal issue.

16 MR. LESSER: He's actually got some
17 overlap in that license renewal. But I think I'll get
18 to a couple of those questions on Problems, have they
19 been identified? The answer is yes. And I'll talk a
20 little bit about that.

21 Let me talk about two examples. We can go
22 to the next slide. This is -- what I'm going to do is
23 I'm going to give you an example of what a special
24 program is, how it became a special program, what
25 their corrective action is. And I'll talk about two

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1 of those. And then I'll talk about how we inspect
2 that and then what we found.

3 One of these examples is Piping Supports.
4 The statement of the problem, just to summarize, back
5 in the '80s, concerns were identified with structural
6 response to loadings, including pressure, temperature,
7 dead and live loads, and seismic loads.

8 MR. WALLIS: What is a live load?

9 MR. LESSER: I think that -- yes. Yes,
10 it's to load the process through a pipe -- live loads
11 versus wet, versus weight.

12 MR. WALLIS: Something like a water
13 hammer, or a break-out pipe? Or --

14 MR. SIEBER: No, it would be a normal
15 transit.

16 MR. LESSER: No, normal loads versus -- as
17 opposed to just weight.

18 VOICE: Well, a water hammer would be a
19 live load.

20 MR. SIEBER: Closure of a valve would be
21 a live load.

22 MR. WALLIS: Well, these piping supports
23 don't have to do much with dead loads. It's the live
24 loads that get you.

25 MR. SIEBER: No, it depends on the piping.

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1 MR. WALLIS: Well, of course, I mean,
2 hanging a pipe for a dead load is trivial. But
3 looking out --

4 MR. SIEBER: No, it's not. Look at the
5 steam line. Do a hydro on a steam line. And that's
6 not trivial.

7 MR. WALLIS: Gravity doesn't change very
8 much.

9 MR. SIEBER: No, but when you change the
10 fluid, it changes the stress on the aggregate line.

11 MR. LESSER: You guys know, obviously,
12 more than I do.

13 MR. WALLIS: So live loads might be when
14 you suddenly turn on the flow to something else?

15 MR. SIEBER: Yes. That would be an
16 example.

17 MR. BONACA: So these are the concern with
18 the current problem. This is a concern with the
19 division of design.

20 MR. LESSER: This is a concern with how
21 they were in 1985.

22 MR. BONACA: Okay.

23 MR. LESSER: With all three units. They
24 fixed them on Units II and III. They're now fixing
25 them on Unit I. The sources for those back in the

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1 '80s were -- various sources of concerns were raised,
2 TVA quality assurance, NRC inspections, industry
3 programs, and contractor review. And I -- the root
4 cause -- actually this is what is stated in the Browns
5 Ferry Nuclear performance improvement program.

6 The root cause of these were lack of
7 seismic design criteria, records, weak quality
8 control, failure to identify and track variances, and
9 attention to detail in implementing modifications.

10 Okay. The nuclear performance plan
11 identified TVA's corrective action to address these
12 problems, which was to revise their seismic ground
13 motion input to the seismic system analysis.

14 This was extensively reviewed by the NRC
15 back in the mid-80s, with the restart of Unit II, and
16 their criteria, the new design criteria was approved
17 by the NRC and documented in new Reg 12-32. Their
18 corrective action also included implementation of
19 commitments to Bulletin 79-02 and 79-14.

20 They conducted detailed walkdowns of their
21 systems, and compared that to their new analysis, and
22 they identified what they term as breakage, or any
23 deviations from the new design. And from that, they
24 either evaluated or modified those. So that's their
25 corrective action. And I'll get to a little bit on

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1 inspection.

2 Let me just go ahead and give you another
3 example of a special program --

4 MR. WALLIS: So who checks the --

5 MR. SIEBER: I have a question about this
6 one.

7 MR. WALLIS: Who checks the -- evaluate
8 and modify as appropriate as being done? Who checks
9 that it's appropriate?

10 MR. LESSER: That's part of our
11 inspection. Okay. In other words, they may accept
12 something as is. They may find a deviation from the
13 design.

14 MR. WALLIS: Does this involve some
15 technical analysis? Or --

16 MR. LESSER: Yes.

17 MR. WALLIS: -- seismic stuff, and how big
18 the anchors have to be --

19 MR. LESSER: Yes.

20 MR. WALLIS: -- and all that stuff? Do
21 you guys do that, or do you have a consultant?

22 MR. LESSER: We inspect those.

23 MR. WALLIS: But do you make the
24 calculations?

25 MR. LESSER: No, no. No.

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1 MR. WALLIS: How do you know how big it
2 had to be?

3 MR. SIEBER: Maybe I can answer that.

4 MR. LESSER: Yes.

5 MR. SIEBER: A lot of licensees use
6 computer terms like new pipe, which tells you how big
7 the anchors have to be, and what all the loads are,
8 and the inspector will come in to see if new pipe was
9 used, or some equivalent program, if it was used
10 properly, if the analysis input was appropriate, and
11 they got an output that reflects itself in hardware.
12 And that's generally the way it --

13 MR. WALLIS: And knowing when a computer
14 program is properly, often it involves having
15 experience with using it yourself and knowing how you
16 can do it improperly.

17 MR. SIEBER: Well --

18 MR. WALLIS: I just wondered if these
19 folks have that experience.

20 MR. LESSER: In other words, their --

21 MR. SIEBER: Or read the instruction book.

22 MR. MCCREE: Steve Vias is one of Mark's
23 inspectors, and he's done some of those inspections.

24 MR. LESSER: Because that wouldn't be an
25 area that I could -- come on up here.

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1 MR. VIAS: My name is Steven Vias. I'm a
2 senior inspector here in DRS. I come from this
3 particular arena back in the '70s with seismic
4 analysis and design.

5 So this area here we're looking into very
6 heavily. And we're looking for deltas. For anything
7 that they've designed or redone like the piping, we're
8 going to look at their pipe stress analysis, what
9 they've redone, the new configuration of the piping.

10 Out of that, you are correct, we look at
11 the outputs for each individual node and where they're
12 going to put a support. And then from those, we look
13 at the individual hangars and look at the structural
14 analysis of that hangar. All the way down to the
15 seismic analysis of the anchor bolts.

16 That's all part of the structural analysis
17 that's done for those particular components. Overall,
18 they start to use the T-Pipe or the super pipe, or any
19 of the basic programs that the industry has accepted
20 or the NRC has approved over the years of doing the
21 analysis.

22 If they play within those boundaries, we
23 accept -- we output as that's what the output is.

24 For the field verification, we take some
25 of these drawings on a sampling basis, not a

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1 statistical standpoint basis, but looking at it from
2 a risk -- what are the bigger systems that we have to
3 do, what are the bigger systems that they totally
4 revamped or torn out and put back in? Not something
5 that's been there before, and see what we have to look
6 at for critical components of the installation.

7 We'll look at the structural members, do
8 we think they are significant for what the loading is
9 for the particular hangar? We'll look at the welding
10 to make sure the welds are put in as designed, and
11 that seems to be an area that we have been finding a
12 lot of problems in at work -- a certain amount of
13 problems, that they say welding is in there, and we go
14 out there and there's missing welds, or it's on the
15 wrong side of the phalange, or undercut, the wrong
16 size, all kind of configuration problems that we have
17 found.

18 So we go through that and we identify it.
19 If they -- we find more problems in that area, we
20 extend our sample until we get a warm fuzzy that they
21 have recouped their program, brought it back to
22 normal, and that they are implementing it as they say
23 they should.

24 MR. WALLIS: Well, if you have to find
25 these errors in the size and placement of the welds,

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1 that indicates that their own inspection procedure
2 wasn't very good.

3 MR. VIAS: That is correct. And Mark can
4 get into that if he's going to cover that. When we
5 did framing -- large frames --

6 MR. PLISCO: He's going to cover that
7 example.

8 MR. VIAS: Yes. That was one area that we
9 identified, I guess, about a year and a half ago, that
10 we had extensive issues with, and they revamped their
11 program and we've gone back and looked at their new
12 program.

13 MR. MCCREE: By the way, in the region's
14 vernacular, a warm and fuzzy means we have reasonable
15 assurance.

16 MR. DENNING: Let me interrupt just a
17 second and ask something of some of our more
18 experienced members who have been through this before.
19 But you know, we -- as -- whenever we get into this
20 inspection area, we get into this question of
21 sampling, and the very experienced-based sampling
22 that's done for inspection, which isn't very
23 comforting to us --

24 Now, I think that it's comforting to the
25 people that have been in the inspection field. You

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1 know, they go out, they get a feeling. They're pretty
2 comfortable. But you don't really know whether
3 that -- whether it could be done a lot better. And
4 I'm just kind of curious whether people like Dana
5 might make a comment.

6 Do you see a problem here that something
7 that's a generic problem that ought to be looked into
8 a little bit more seriously, since you raise this
9 question just about every time we get --

10 MR. POWERS: Yes, I know exactly what
11 you're driving at. And you keep saying, Gee, I can do
12 this -- I can do something here. And the fact is,
13 that yes, I think it's a great academic undertaking to
14 go see if you could have a more optimal inspection
15 sampling.

16 I myself had far more confidence in the
17 interim while these gentlemen picking at themselves,
18 that it's like safety culture. It's one of those
19 things the pointy-headed professors ought to look at
20 and see if there is something.

21 But I don't expect any outcome from them
22 coming through, and I think they would struggle to
23 avoid, Lee, to outdo an experienced individual. Yes,
24 I just -- I mean, that's my own personal feeling on
25 this, that yes, there is something called a warm

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1 fuzzy. I don't know whether I could ever put it down
2 as -- at a 95 percent confidence now, because I don't
3 know what the distribution underlying it is.

4 And so, yes, we asked the question, but
5 that's because they feel obligated to get a question
6 from us. And right now, No, I have a great deal of --
7 I myself have a great deal of confidence in the very
8 experienced individual. The problem, of course, is
9 the one you just alluded to.

10 By the time you get enough experience so
11 you can do this really efficiently, you're also
12 starting to attend the lectures on retirement
13 planning.

14 MR. DENNING: Bill, is your feeling
15 similar? Is it just -- I mean, we ought to just kind
16 of -- I mean, maybe it's a good master's thesis for
17 somebody that's just kind of look at it and see if --

18 MR. POWERS: Oh, no. It's very, very much
19 more complicated than a master's thesis. I think it
20 is --

21 MR. SHACK: Well, I mean, we try to do
22 something -- rather than statistical sampling, we do
23 risk-based sampling, which seems to me probably better
24 that we could do with most of the statistical sampling
25 things.

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1 I mean, even for steam generator tubes,
2 which you know, strike you as the sort of thing where
3 sampling really ought to work. You know, really, the
4 judgment of where the problem is and things like that
5 probably -- I would feel more confident and
6 experienced than I would somebody trying to apply an
7 algorithm, you know, beyond the kind of, you know,
8 when you find the problem then you start to expand.
9 I -- there's an awful lot of variables. You know,
10 we're not making lightbulbs.

11 MR. PLISCO: And I can speak from many
12 times going through relooking at the inspection
13 program, this question always comes up. And there's
14 a lot of things you have to balance, you know, when
15 we're building the inspection program.

16 And Steve alluded to it when he talked
17 about -- you know, based on having looked at these
18 kind of things for many years, we know where a lot of
19 the problems typically occur. And we're -- and we
20 apply that when we picked our samples.

21 And now with the risk tools we have now,
22 that gives us another tool that we use to -- you know,
23 if there is going to be an issue, you know, where are
24 the most-important place -- the most-critical places?
25 And that's where we focus our --

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1 MR. SIEBER: Maybe I could add a little
2 something here, having been involved with a number of
3 plants. Defects like bad welds, undercut welds,
4 missed welds, other problems with hangers, in my
5 opinion, are not random.

6 A constructor -- an engineering and a
7 constructor, when they get into the protocol of not
8 doing things quite right, frequently extend that to a
9 lot of things. And so -- and it depends on the
10 quality of the construction job, you know, the
11 engineer who is responsible for the analysis, and the
12 constructor who is responsible for the fabrication.

13 The sampling has to, in my opinion, be
14 considered because -- in a way that would recognize
15 that the defects are not random, but are -- if you
16 have people that don't do a good job, you're going to
17 get a lot. And if you have people that really do a
18 good job, you'll work awful hard to find a few.

19 So when an inspector goes in and inspects
20 and starts to find them, you know, all of a sudden,
21 that alerts that inspector to the fact that, you know,
22 here is a big problem. And it's probably
23 programmatic.

24 And once they gather enough evidence to be
25 able to state that kind of a case, then I think that

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1 there is the need for a revision to the program.
2 That's been my experience.

3 MR. POWERS: Yes, this is what the problem
4 is, Jack, is that the constructors -- the average
5 constructor is pretty much average. And if they pick
6 and choose and they happen to dodge the bad project,
7 you never see it. It's an outlier.

8 So it's -- you're right. At any given
9 craft or activity, the errors there are never random.

10 MR. SIEBER: Right.

11 MR. POWERS: Okay. but all the activities
12 on board -- we can take that as a random set. Okay.
13 And how do you pick among that? Well, the problem is,
14 it's also small stat. On most statistical things you
15 would call that a small set.

16 And I personally would trust their
17 judgment in picking -- they're no longer trying to
18 pick a random representative sample. They're trying
19 to find the bad one. They're trying to find the
20 outlier. And the one where the -- you're going to
21 have these systematic errors. And I trust their
22 judgment better than I would trust a mathematical
23 algorithm.

24 MR. SIEBER: Well, my experience was that
25 on a given site, you have one constructor. In a given

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1 crew, you may have ten or 20 welders or 50 welders,
2 some of whom are good and some of whom are not so
3 good. And -- but everybody knows who the good ones
4 and the bad ones are after a few months.

5 MR. POWERS: And that's the beauty of the
6 resident system, is that you're trying to get somebody
7 on your -- from NRC that's in the cognoscenti on --

8 MR. SIEBER: And you have enough records
9 so you can track the welder to the problem.

10 MR. WALLIS: Before we leave this,
11 could --

12 MR. LESSER: And maybe you could skip a
13 couple of slides. If you'll just go to the one titled
14 Inspection Results.

15 MR. WALLIS: Before we leave this, could
16 we talk about something here. I think you may have
17 left the impression with whoever reads the transcript
18 that things that are done in academia or for master's
19 theses are irrelevant to the real world.

20 And I would point out that most progress
21 eventually comes out of academia and is actually
22 taught to the next generation. But it's not always
23 irrelevant. It might be useful to at least know what
24 some of these statistical methods are, so you'd know
25 if you were overdoing it, for instance.

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1 I mean, maybe you're taking 20 times as
2 many samples as you need from you know, what point.
3 And it's -- might reassure you that you could back off
4 if you had some greater authority, you know, which is
5 based on logic.

6 And if you're taking far too few
7 samples, and you're far too confident with your answer
8 in view of the small number of the samples, and you
9 knew what some sort of a theoretical framework was, it
10 might give you reassurance that you were doing the
11 right thing.

12 And I think if you ever found yourself in
13 court, and you find the opposition really knew their
14 sampling and you didn't, you might have some
15 difficulty persuading the judge that you were wiser
16 than the opposition. So I just hate to leave this
17 with sort of the feeling that the theories are all
18 irrelevant.

19 MR. POWERS: It would be a wrong thing to
20 leave, of course. But --

21 MR. SIEBER: I feel chastised.

22 MR. POWERS: -- the sampling is
23 extremely -- I mean, it's extremely sophisticated
24 analysis you have to do on that.

25 with respect to courts and the persuasive

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1 power of science, maybe the recent Vioxx case is one
2 to consider.

3 MR. WALLIS: It makes a difference if you
4 have a jury or a judge I'm told.

5 MR. SIEBER: I have another question.
6 Before we run away from seismic, 1972 era was a
7 different seismic set of base data than today, because
8 of Charleston's New Madrid and so the analysis that
9 they used in 1972 to base the -- like being in hanger
10 design and component support design, and you know,
11 healthy bolting and all that kind of stuff, maybe
12 different than today.

13 And I have seen, for example, a two-unit
14 site where one was before and one was after, and the
15 supports were altogether different. In this case here
16 you questioned, I think, the original seismic
17 analysis. That's what I got from one of your sites.
18 Okay.

19 Does that mean the use of 1972 data is the
20 design basis and the methods that were current at that
21 point were the design basis? Or would there be some
22 kind of attempt to upgrade that to the latest basis?

23 MR. LESSER: No, there is no attempt to
24 upgrade to the latest basis. There is -- the original
25 license --

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1 MR. SIEBER: So that's the design basis?

2 MR. LESSER: Yes. They're originally
3 licensed, and in order to deal with their --
4 configuration problems that they had, they revised it
5 back in the '80s.

6 MR. SIEBER: Okay. Now, they weren't
7 involved in this business of using the arithmetic
8 addition of, you know, different frequencies, as
9 opposed to the absolute values. They didn't have
10 that, right?

11 MR. LESSER: I'm not sure if I can answer
12 that. I can go back to the safety evaluations and
13 go --

14 MR. SIEBER: Well, so can I and I will.

15 MR. LESSER: Yes. Okay. What I was --
16 getting back to, you know, how do you find problems by
17 sampling? It maybe useful just to you know, do a
18 quick case study of an actual -- what we actually did
19 find. And I skipped a few slides up to the inspection
20 results.

21 And I'll talk about the Torus Integrity
22 Quality Assurance Program deficiencies we found back
23 in May 2004, where we documented a severe level-four
24 violation.

25 But you know, it's basically the concept

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1 if there was a multiple deficiencies, as you said,
2 weld problems are not random. If there are multiple
3 deficiencies, and you target as an inspector a sample
4 of risk-informed systems, there is a good chance
5 you'll find one of the problems.

6 And that's what happened here. Our
7 inspectors found -- were in the torus, and because in
8 correcting and implementing modifications to
9 structural members, weld sizes, they found welds that
10 were thought to have been repaired were not repaired.

11 Or welds that were -- and they found a
12 number of them. We found several of them in one
13 inspection. Okay. And what it resulted in was --

14 MR. WALLIS: Excuse me. You're talking
15 about Unit I here?

16 MR. LESSER: Yes.

17 MR. CAHILL: This was found by the
18 inspector actually going out in the field and
19 measuring individual welds and looking for them per
20 TVA's completed paperwork.

21 MR. WALLIS: Well, I said they've got the
22 pressure to stay on schedule, so this may be part of
23 the trouble.

24 MR. LESSER: Well, yes. Well, there were
25 several causative factors because of this, which I'll

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1 talk about. But -- and that was one, perceived
2 schedule pressure was one of them.

3 But several problems occurred in that
4 through their whole, from soup to nuts, in fixing and
5 identifying the welds and identifying structural
6 members that needed repairs inside the torus, from the
7 initials walkdowns were not complete, to
8 misorientation problems by people within the torus as
9 to the azimuth they were on in the torus, to drawings
10 were not -- were difficult to read, to lack of
11 oversight, lack of independence, culminated in
12 multiple examples where repairs were not put into
13 place.

14 After we found several of them, the
15 licensee went back and fully inspected thousands of
16 welds, and they found more. Okay. And that resulted
17 in our violation. But the causes were -- the next
18 slide, workers became misoriented in the torus,
19 sketches were confusing. Work documents were
20 difficult to use, perceived time pressure, inadequate
21 checking and lack of independence.

22 So that kind of -- and that's how this was
23 discovered. So it's a good case study to kind of talk
24 about. But the TVA implemented extensive corrective
25 action. We had an enforcement conference. We've

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1 inspected corrective actions.

2 We're still find -- inspective actions
3 within the torus -- you go to the next slide. The
4 other significant inspection finding that resulted in
5 a violation also has to do with piping supports.
6 Although this is at a less-significant, at a sever
7 level-four violation. But it --

8 MR. THADANI: Mark, could I take you back
9 to the previous chart.

10 MR. LESSER: Yes.

11 MR. THADANI: Now, there's some history
12 behind this -- the issues of QA/QC.

13 MR. LESSER: Yes. Exactly.

14 MR. THADANI: And then you said you
15 developed substantial confidence on the basis of what
16 they did to Units II and III, which presumably had
17 pressed this matter. And when you went through this
18 inspection, you found lack of independence as a cause.
19 Does that then take you back to the programs to say,
20 Well, what went wrong here?

21 MR. LESSER: A lot of it takes -- really
22 is managing resources with -- and understanding
23 expectations, getting expectations to people. When I
24 talk about the lack of independence, we're talking
25 about lack of quality control.

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1 MR. THADANI: That's what I'm talking
2 about.

3 MR. LESSER: Okay. There was one example
4 where you know, the quality control inspector was not
5 independently locating the weld. He was following the
6 welder. He probably pointed them out, Okay. This is
7 the one you've got to inspect. Okay.

8 So -- and that was one of the causes
9 where -- or an opportunity to catch this, which didn't
10 get caught. And that was really -- the program is
11 fine. There were some improvements they needed to
12 make in clarifying the drawings, how drawings are, and
13 then training people how to orient themselves. But it
14 was communicating expectations, making sure people
15 understand to get the job done right. Go ahead.

16 MR. CAHILL: With this finding, multiple
17 barriers failed, the last ones being the KC
18 verifications.

19 MR. THADANI: Right.

20 MR. CAHILL: And that's why this turned
21 out to be a severe level-three escalated enforcements.
22 That was very clearly communicated to TVA. TVA knew
23 that we went back and now all their quality assurance
24 work, there was a cloud over it. It cast doubt, and
25 the confidence that we had had up to that point was

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1 now shattered.

2 And that really drove the extent of the
3 corrective actions that TVA did in response to that,
4 both in reverifying all those torus welds and
5 addressing the QA/QC program. They did a lot of
6 extensive corrective actions both in expectations,
7 changing of personnel, that -- Mark mentioned that we
8 looked at the corrective actions.

9 We looked closely at that because that --
10 the message we sent to TVA, which they heard very
11 clearly, was that this finding has a lot of
12 significance in our confidence level. And they
13 recognized that and basically did what you would
14 expect them to do to get that level of confidence
15 back.

16 But it's -- I mean, they know that it's on
17 our radar. When they came in for the July 20 meeting,
18 they knew that that's something that we wanted on
19 their presentation that we wanted to talk about. We
20 wanted to hear what they were doing so that we could
21 get that level of confidence.

22 MR. LESSER: And this is an area where we
23 were continuing to inspect, because we're not there
24 yet, on getting that reasonable assurance. So that's
25 ongoing.

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1 Why don't I -- and if you could just back
2 up to the one titled Inspection Status Summary, and
3 I'll just quickly summarize that one.

4 This is a quick summary of where we are in
5 inspection status of these programs. Inspection is
6 complete. We've essentially completed the IGSCC
7 inspections.

8 Inspections near complete, which means
9 we've done one or two inspections. We project -- we
10 haven't found significant problems in these areas, so
11 we're projecting perhaps one more inspection.

12 MR. WALLIS: What is a thermal overload?

13 MR. LESSER: Thermal overloads on motors.

14 MR. SIEBER: And electrical.

15 MR. WALLIS: Overheating of --

16 MR. LESSER: And it was configuration of
17 those at the light set points.

18 MR. SIEBER: Too much current.

19 MR. LESSER: Yes. We're projecting
20 closure maybe in -- probably in one more inspection.
21 And then the next slide shows that --

22 MR. WALLIS: Do you ever get thermal
23 overloads in these trays that carry all these cables
24 and that all?

25 MR. SIEBER: You never --

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1 MR. LESSER: That's -- well, that's what
2 ampacity is talking about.

3 MR. SIEBER: Yes.

4 MR. WALLIS: Yes. Only if you put too
5 many amps in them, you cook the cables. And so since
6 they're all together, then they heat each other up,
7 and --

8 MR. LESSER: TVA's run a lot of cables.
9 They haven't put many cables --

10 MR. SIEBER: Thermal overload is a device,
11 however.

12 MR. WALLIS: Yes.

13 MR. SIEBER: And it's located in the
14 circuit breaker, that the -- measures how much current
15 is going to the motor. If you're putting too much
16 current to motor, insulation will fail, and that trips
17 the breaker.

18 MR. LESSER: Inspections continuing -- as
19 we said, torus integrity, large bore piping, cable
20 installation and containment coatings.

21 And the status of inspections that are in
22 the early stage or not started -- small bore piping.
23 In fact, there's one this week ongoing there. Design
24 calculations, configuration management. We mentioned
25 Appendix R, soon to be started.

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1 I think we probably are a little bit over
2 time. But that concludes what I wanted to talk about.
3 I apologize.

4 MR. SIEBER: It's so interesting. Just
5 keep right on going.

6 MR. LESSER: That's essentially what I
7 wanted to touch on. If you've got any questions.

8 MR. POWERS: We asked the licensee about
9 the issue. We haven't asked you guys about
10 Fitzpatrick and the torus. I know there is a cottage
11 industry explaining why the torus at Browns Ferry or
12 any of 19 other Mark I VWRs is not like Fitzpatrick.
13 How was the torus at Browns Ferry like Fitzpatrick?

14 MR. LESSER: Yes, from our -- our info is
15 that they do have spargers on the discharge of the
16 lines at Browns Ferry. And it's not like Fitzpatrick.

17 MR. POWERS: The trouble I have with that
18 explanation is that's such a subtle effect on the
19 liner, if it's that sensitive, what are all the other
20 things that could be causing localized attack on the
21 liner that just hadn't been seen yet? So that's what
22 I'm asking. Is how is the torus like Fitzpatrick,
23 even though it's not identical, but it's -- what is
24 the --

25 MR. WALLIS: Well, they told us it was

1 much thicker. They told us it was a substantially
2 thicker material than Fitzpatrick.

3 MR. SIEBER: Yes. They told us that.

4 MR. WALLIS: So you're satisfied this
5 isn't another Fitzpatrick waiting to happen?

6 MR. CAHILL: We did specifically do some
7 verifications and response to TVA's initial look at it
8 to make sure that we didn't have a dispatcher
9 phenomenon at Browns Ferry. And that was the extent
10 that we did --

11 MR. POWERS: But I mean, I'd be fascinated
12 to know how you did that. I mean, the exhaust from
13 the HPCI is enough to cause this localized effect.
14 How many other things of that kind of subtle nature --
15 I mean, it's half a million gallons of water in there.

16 MR. SIEBER: Any other questions? If not,
17 we're about 20 minutes late, which is okay. We are
18 typically late. And I believe that we ought to take
19 our full 15 minutes. And even though that clock
20 doesn't agree with mine, if we can be back here at ten
21 to 4:00, that would be good.

22 (Whereupon, a short recess was taken.)

23 MR. SIEBER: So maybe we can have --

24 MR. JULIAN: Okay. I will try to be
25 briefer than the last presentation, because you've

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1 probably seen some of our -- my efforts before, I
2 think.

3 MR. SIEBER: We usually determine what
4 time you actually finish.

5 MR. JULIAN: The next slide over, please.
6 This is a slide that I've used before in talking with
7 ACRS. I go up for a briefing of each of the plants as
8 we've been approved. Very briefly, for license
9 renewal we've developed a Manual Chapter and
10 inspection procedure. And the inspection cites
11 specific plan. The resources are -- we've done our
12 best in Region II to maintain a consistent five
13 inspectors. And when we've lost two of them in the
14 past, we've got a retraining program.

15 Next slide over. The scope -- the license
16 renewal inspection includes a scoping and screening
17 inspection. The objective of that is to confirm that
18 the applicant has included all appropriate systems,
19 structures and components in the scope of license
20 renewal as required by the rule.

21 And recently the manual chapters and
22 inspection procedures, as you probably recall, have
23 been revised to reduce our effort in the scoping and
24 screening arena, and to combine that inspection with
25 the aging management program management inspection.

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1 And the focus of what we do in scoping and
2 screening now has been on 54.4(a)(2), which is the s
3 where non-safety-related components could affect
4 safety-related.

5 Next slide over. So our main effort now
6 is just a single inspection, Aging Management Program
7 Inspection. The objective is to confirm that the
8 existing AMPs are working well, and to examine the
9 applicant's plans for establishing new AMPs and
10 enhancing existing ones.

11 Our inspections at Browns Ferry were two
12 weeks in length, and the things we do are we examine
13 the records of past tests and surveillances for
14 existing aging management programs.

15 We examine implementation plans for new or
16 expanded AMPs. And verify inclusion of future tasks
17 into established site task tracking systems to see
18 that they get done what they say that they will do.

19 MR. SHACK: How do you decide the length
20 of that inspection? Is the two weeks fixed, or --

21 MR. JULIAN: Yes, it is. We have
22 specified we'll do it for two weeks. We're able to
23 cover all of the aging management programs that
24 they've committed to within two weeks. Sometimes
25 we're going really fast and resolving issues at the

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1 last second. Sometimes we're done by Wednesday of the
2 second week, depending on how well the applicant has
3 done in that arena.

4 MR. WALLIS: But existing AMPs are working
5 well, is this for Units II and III?

6 MR. JULIAN: NO, this is for aging
7 management programs they have a combination of thing
8 that they've been doing all along, like in-service
9 inspection and like the fire protection program, and
10 things that they're going to do down the line which
11 they've not even approached, like one-time inspection
12 for selective leaching --

13 MR. WALLIS: But nothing has been aging in
14 Unit I. And those -- we're told most of it's new
15 anyway. So how can you evaluate an AMP for a system
16 which is being rebuilt?

17 MR. JULIAN: For Unit I, it will be
18 particularly challenging. What we've been looking at
19 for in-service inspection would be the records of --
20 past sampling of records of what they've been doing on
21 the operating units. We're looking at for the most-
22 recent stuff.

23 Separate from that, they are doing a lot
24 of baseline in-service inspections on Unit I.

25 MR. WALLIS: So we should award the

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1 license renewal to Unit I on the basis of what they've
2 been doing for Units II and III?

3 MR. JULIAN: That is correct. They are --

4 MR. WALLIS: Is that your position?

5 MR. JULIAN: That is their position. They
6 are --

7 MR. WALLIS: I know. I wondered what your
8 position is.

9 MR. JULIAN: They are saying that for
10 example, in-service inspection has been conducted
11 routinely. Each outage on Units II and III will
12 continue on Unit I, with the same success it's had on
13 II and III.

14 And they are doing a significant effort at
15 baseline Unit I, which you'd expect, looking at the
16 inside of the reactor vessel and all the new piping,
17 of course, that's being radiographed and examined as
18 it's constructed.

19 MR. BONACA: Well, that doesn't concern
20 me, because, I mean, you will verify that when they
21 start to do it that it's being done, so that will be
22 inspected anyway.

23 The issue that we have discussed and
24 raised -- I don't think we have reviewed yet, is the
25 you know, extrapolation of aging mechanisms to Unit I

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1 being identified as the aging mechanism on Unit II and
2 III.

3 In general, that would be true. And in
4 general, the goal processes are generic enough to
5 cover those issues. But there are special cases of
6 components, of systems, and here we have new
7 materials. So that's the question that I think we
8 would have to resolve by discussions with the licensee
9 and it's tough.

10 MR. JULIAN: Well, I think so. One would
11 think that in general, Unit I probably has suffered
12 less wear and tear than Units II and III. And with
13 the rework that they're doing on it -- for example,
14 the recirculation piping, we probably have more faith
15 in the recirculation -- the new recirculation piping
16 on Unit I than we do any of the rest of it on the
17 other units.

18 MR. SIEBER: I think -- you know, I have
19 the same concerns that others of our members have
20 expressed. And I share all those concerns to myself
21 by thinking if you were to build a new plant today,
22 the very first day that you put in on line, you'd be
23 responsible for managing aging in a brand-new plant.

24 You would not have all the infrastructure
25 that goes with license extension or renewal. On the

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1 other hand, you have your chemistry program, your ISI
2 program, your IST program, and all these other
3 programs that are basically designed to control and
4 manage aging.

5 And so Unit I, that's substantially being
6 rebuilt, is not much different than that. And then
7 when you look at the way you license a new plant, you
8 license it for four years, and with the 25-year time-
9 out on Browns Ferry I, even with the license
10 extension, it's probably going to be in that 40-year
11 range.

12 MR. BONACA: I think they would have to
13 review this and get a better understanding of -- there
14 is no question that there is a recognition that they
15 are rebuilding much of the plant. We can't understand
16 how much of it. We haven't looked at it yet.

17 MR. JULIAN: Yes, it's an interesting
18 problem to deal with.

19 MR. SIEBER: Well, as long as they
20 establish the programs and implement them as they
21 commit to do and satisfy the requirements of the rule,
22 and obviously they know how to chemically treat,
23 protect, and inspect these plants like this, because
24 they have units II and III that one could reach a
25 conclusion that they meet the qualifications for

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1 license renewal. You know, that's up to the eye of
2 the region, the eye of the inspector and the eye of
3 the Commissioners.

4 MR. BONACA: Well, one positive thing is
5 that they've dealt with aging of many components by
6 just replacing them, and replacing them with better
7 materials. So they also have provided solutions, I
8 think, they've implemented in the field. I would
9 expect that they would have less commitments for Unit
10 I than they'll have for the other Units.

11 MR. SIEBER: I think where attention needs
12 to be --

13 MR. BONACA: Anyway, we'll let -- yes.

14 MR. SIEBER: Where attention needs to be
15 placed is things that age whether they're used or not,
16 like concrete, Hilti-bolts, nuts and fasteners and
17 things like that -- if they aren't replaced, which --
18 and they aren't replacing concrete. I didn't see any
19 place where they were actually replacing the concrete,
20 then those programs -- those structures are going to
21 age whether the plant's running or not, and that's
22 where I would put a little extra attention.

23 MR. RANSOM: I think about buried piping.

24 MR. SIEBER: Yes.

25 MR. SUBBARATNAM: Yes, I totally agree.

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1 We cannot put out for SCR to the committee only like
2 about ten days back in time.

3 I think the committee members haven't had
4 the time to look at it.

5 MR. SIEBER: That's right.

6 MR. SUBBARATNAM: But when you go down to
7 Chapter 3.7, there we deal with the Unit I systems at
8 length. This chapter functionally diverted them into
9 common -- the aging mechanism type of a rationale in
10 making a finding how these systems have been
11 refurbished, how much have been left in place, how
12 much of the AMPs are going to apply to those piping
13 which are left in place. We kind of developed the
14 rationale as we went further down.

15 Of course, you guys can make a finding of
16 it and come back and tell us whether the staff
17 rationale is fine or not. Then you're also doing
18 system-specific items. How will that do with each one
19 of those things with respect to the aging management
20 programs we have?

21 But the basis what the licensee had
22 started doing for Browns Ferry is for Unit I, II, and
23 III they don't make any distinctions in AMPs. They're
24 all the same for all of them. Except the only problem
25 what happened was when Unit I got shut down in 1985,

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1 most of the AMPs, which is applicable to II and III,
2 the announcement which was done for II and III, have
3 now been implemented for Unit I.

4 They got to stop the clock of implementing
5 all of them. There are enhancements to shore them up.
6 Like, enhancements in license renewal space; Cardell
7 [phonetic] is going to verify all the enhancements,
8 whether they've been properly implemented before we
9 could close out. And we have like about 25-page long
10 commitment list how this is going to be done, and we
11 want to attract them.

12 And finally, there's one program which
13 Cardell hasn't looked at, which came after we finished
14 our AMP inspection -- we told them that even though
15 you guys had -- your view of the place, not
16 refurbished, not replaced, but you made a
17 determination that they are okay from metal thinning
18 and wall thickness and stuff, staff was not completely
19 satisfied, and then said there could be some latent
20 affect, which is not seeable right today at restart.
21 We just can't let you go like that. You've got to
22 give us some commitment how they're going to do it.

23 So we got the one extra inspection -- we
24 created one -- which is called the Unit I periodic
25 inspection, which will continue into the licensing

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1 renewal extended space. They will continue to monitor
2 it for any degradation for around the two refueling
3 cycles, three or four till the staff is satisfied that
4 there is no dormant effect. And that's how we'll
5 write it up. So that's one thing is that.

6 So much of that is up there in Section 3.7
7 of the SCR. When we go down farther, License Renewal
8 Presentation Group, staff will explain it in more
9 details.

10 MR. SIEBER: Okay. For the record, would
11 you state your name?

12 MR. SUBBARATNAM: My name is Ram
13 Subbaratnam. I'm the license renewal PM for the
14 Browns Ferry project.

15 MR. SIEBER: Okay. Thank you.

16 MR. JULIAN: So that's one new aging
17 management program that TVA has just recently
18 committed to.

19 MR. BONACA: Right. And that's an
20 important one, because clearly --

21 MR. JULIAN: And that's something brand
22 new that they have just committed to. So there is
23 nothing there yet. They've got to get on down the
24 road and do that as time goes on.

25 Bill may have a comment if --

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1 MR. RANSOM: I'm curious how buried piping
2 was being treated. I think in the past they've always
3 argued for opportunistic inspections, I guess. I
4 don't know what is the situation at Browns Ferry.

5 MR. JULIAN: The buried piping inspection
6 program has evolved a bit from GALL, from the Generic
7 Aging Lessons Learned. Originally we were accepting,
8 as you say, opportunistic. Whenever I happened to dig
9 something up for another reason, I'll look at it.

10 And I think now we've come around to the
11 point that we say, Well, if you get to the end of 40
12 years, then you'll dig something up on purpose, and
13 you'll go for the place that you might expect
14 problems, if you haven't encountered any.

15 So that's where we're at in the industry.
16 And we're not particularly pursuing Browns Ferry as
17 being any worse. We don't know of any bad particular
18 bad history of buried piping at Browns Ferry. In
19 fact, I was reading a document the other day that was
20 advocating that they've had zero problems with buried
21 piping. Bill, did you have something to add?

22 MR. CROUCH: Mind if I make a statement in
23 regard to GALL. I'm Bill Crouch. I'm from Browns
24 Ferry. I'm the site-licensing manager over there.
25 And as we discussed the issue of license renewal

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1 yesterday, and we talked about the fact that we've got
2 operating experience from Units II and III and how it
3 applies to Unit I, and there was a little bit of a
4 concern over that.

5 One thing that we didn't talk about was
6 the fact that in -- when we talk about operating
7 experience from Units II and III, one thing that we've
8 got in Unit III is operating experience in a shut-down
9 laid-up condition.

10 Unit III was shut down in 1985, and laid
11 up just, like Unit I, for ten years. before it was
12 restarted. So any type of latent effects that you
13 would see from extended period of shut-down, we saw in
14 Unit III. We took the lessons learned from that and
15 went over -- and we went and started the application
16 on Unit I, we took those things.

17 And we saw some specific examples of it.
18 And one thing that somebody may have mentioned
19 yesterday was the RHR service waterpiping, for
20 example. We had significant problems with the RHR
21 service waterpiping inside the reactor building, not
22 outside the building.

23 Once the piping got outside the building
24 into the tunnels, it was fine. But inside the
25 building, due to the warmer environment, it had a

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1 severe problem. When you go over into Unit I, in Unit
2 I systems for the RHR service water, one loop was in
3 service, one loop was laid up just like Unit III.

4 You saw the same phenomena over in the
5 laid-up loop as what you saw in Unit III.

6 So we had to replace all that piping, the
7 alpha Charlie loop. The loop that was in service is
8 just like the Unit II piping. It was full of water
9 and operational the whole time, and it has not had any
10 problems at all. It's still got plenty of min wall
11 with it.

12 So the lay-up process for that piping in
13 Unit III showed us that we had a problem in that
14 particular type of a system, and we took that lesson
15 learned and applied it over here. So we've got
16 operating experience that is not only true operation,
17 but also a shut-down laid-up condition.

18 MR. WALLIS: Was it laid up dry or partly
19 dry or --

20 MR. CROUCH: It was laid up dry, with dry
21 air being blown into it.

22 MR. WALLIS: Did it have condensation in
23 it?

24 MR. CROUCH: But that system -- it comes
25 from the RHR service waterpumps. The piping is

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1 underground. It comes up out of the ground through
2 the tunnels and into the building. So there was water
3 vapor coming up through the underground piping,
4 through the service water tunnel into the building.

5 Once you cross the wall from the tunnel,
6 which is basically in a cave and cool, over into the
7 building, where it's normal building-type
8 temperatures, then you saw the aging mechanism occur.
9 So we took those kind of lessons learned that we saw
10 from Unit III and applied them to Unit I.

11 MR. RANSOM: Was there any problems with
12 buried piping?

13 MR. CROUCH: No, there's not any problems
14 at all.

15 MR. RANSOM: Well, was any of that laid
16 up?

17 MR. CROUCH: Well, it really wasn't laid
18 up. Like the RHR service water pipe, it's all in
19 service for Unit II. IT's a common pipe that takes
20 off and it splits at each unit.

21 All the other buried type systems like raw
22 coolant water, EECW, all that's been in service ever
23 since we shut down. And you can't take those out of
24 service, because they're supplying your normal cooling
25 loads for such things as spent fuel pool cooling.

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1 MR. SIEBER: I guess we'll review all the
2 details of license renewal as a subcommittee meeting
3 coming up here in a month or so.

4 MR. JULIAN: Yes. I think it's scheduled
5 for October 5 and 6.

6 MR. BONACA: Yes. And you know, I think
7 that point, I mean, we recognize that a lot of the
8 operating experience, it's similar from unit to unit.
9 I mean, these -- however, we have seen in the license
10 renewal applications for twin units or three units on
11 a site, some uniqueness about the -- for example, one
12 particular component attached to a vessel, or
13 something that made that experience unique to one of
14 the three or two units on the site that required some
15 specific inspection.

16 And you know, we need to understand from
17 reviewing the material, which we haven't done yet, if
18 there is anything of that type that we should be
19 concerned about. That would be the exception on the
20 fact of relying on the other unit's experience, rather
21 than this specific one.

22 MR. CROUCH: Can I give you one more
23 example on that?

24 MR. BONACA: Sure.

25 MR. CROUCH: This is Bill Crouch again.

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1 An example exactly along those lines was what's called
2 the cross-under piping. Do you remember when you saw
3 yesterday the piping that comes out of the high-
4 pressure turbine that goes down and goes to the
5 moisture separators. It's large pipe.

6 In Unit I, we found out many years ago,
7 even while Unit I was still operating, that that
8 piping material did not meet the specs that it was
9 supposed to meet. It was low on chromium content.
10 And it was found to have problems. And they continued
11 to operate it one more cycle, I think it was, before
12 they shut it down.

13 When we got ready to do Unit I, they -- we
14 went and looked at it, and you could look at the pipe,
15 and it was in horrible condition. It looked like
16 someone had taken an ice cream scoop and just scooped
17 gouges out randomly throughout the pipe. And the
18 surface of those gouges was black, shiny. It looked
19 almost like a piece of polished coal or something, it
20 was that black.

21 And it was due purely to the inadequate
22 chromium content. You go over into Unit II and III,
23 that piping was supplied with the proper material
24 properties. That piping is just as smooth as this
25 table today. I've been -- crawled through that

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1 piping, and with the exception of a very light rust
2 cover, it's not rust like you normally see it, it's
3 just a powder, that piping is just as smooth as this
4 table.

5 But over in Unit I, where it had wrong
6 properties, it was severally degraded, and we had to
7 replace the entire piping. So in our inspections for
8 Unit I, we've gone and looked for instances like that,
9 where we might have had a wrong application of
10 materials.

11 MR. BONACA: Okay. So you do have some
12 experience that, based on the operating in 1985?

13 MR. CROUCH: That's right.

14 MR. SIEBER: Well, I know that the SCR is
15 sitting on my kitchen table. But I haven't read it
16 yet. When I do, I'll be prepared to ask questions.

17 MR. CROUCH: You have a much stronger
18 kitchen table than I do.

19 MR. SIEBER: I've already added gussets to
20 it.

21 MR. JULIAN: The SCR is a challenge, I
22 believe, for this one.

23 MR. SIEBER: Yes. And --

24 VOICE: It's only one CD, like any other
25 SCR.

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1 MR. SIEBER: Yes, you should do that more
2 often. But in any event, detailed questions I think
3 we should reserve until that time, after we've had a
4 chance to review the material.

5 MR. SHACK: I want to ask one detail. Did
6 they do a baseline UT on all the welds in the recirc
7 system?

8 MR. JULIAN: I believe they did. I'm sure
9 they were -- I'm sure those were radiographed in the
10 baseline UT.

11 MR. SHACK: Well, the radiograph would be
12 required by code, because the baseline UT --

13 MR. CROUCH: Yes, both were done.

14 MR. JULIAN: And I believe they're working
15 on reactor vessel now. Is that still ongoing, with
16 the internals and --

17 MR. CROUCH: That they're talking about
18 doing the MS -- oh, yes. They're doing the internal
19 reactor vessel inspections right now.

20 MR. SIEBER: The vessel itself is
21 scheduled for a vessel inspection itself.

22 MR. CROUCH: Yes, the vessel inspection is
23 a full inspection scheduled --

24 MR. SIEBER: It's scheduled for the
25 future?

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1 MR. CROUCH: Yes.

2 MR. SIEBER: Okay.

3 MR. SUBBARATNAM: John, can I ask -- this
4 is Ram Subbaratnam. If the committee members would be
5 interested in discussing the detail of our personal
6 experience, Bill Crouch is the guy who could
7 definitely come in for our subcommittee meeting in
8 September.

9 And he could probably devote some time
10 explaining those things for you, including we can
11 bring Darlene, the in-service inspector for TVA, to
12 explain how these UT inspections -- what she did and
13 her experience.

14 MR. BONACA: Well, I think we have, in
15 fact planned the meeting in a way that we would talk
16 about license renewal, say, in the morning, and then
17 we'll like to dedicate a couple of hours to
18 understanding this issue of applicability of
19 experience from Unit II or III, plus other sites which
20 are just measuring right now to Unit I.

21 That is the key issue that makes this
22 different from other applications, not necessarily the
23 number of years. I mean, we are not sticking to the
24 20 years as if it were essential. But the
25 applicability of -- and how do you -- and how do we

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1 feel comfortable that that meets the requirements of
2 the rule?

3 So you know, to the degree that anyone can
4 provide insights on that subcommittee, that would be
5 welcome and useful.

6 MR. SIEBER: Okay. See what I mean about
7 us controlling your schedule?

8 MR. JULIAN: Of course. I expected that.

9 MR. SIEBER: Continue on.

10 MR. JULIAN: I figured -- I thought we
11 would stray from the slide. Next one, please. Very
12 briefly I'll finish this up. The third -- it's an
13 optional inspection that's needed. And in the past
14 we've done these in two to three days in length. We
15 close any open items from previous inspections, and
16 close any inspection items that NRR requests us to do.
17 Sometimes they have some specifics. Would you go make
18 sure that what they said is right in this area, and
19 verify that the applicant has loaded future casts into
20 the established site tracking system?

21 And we also verify that they have a
22 transition plan, an organized way for completion of
23 the license renewal project. So those people are
24 finished, and they transition all these tasks to be
25 done in the future over to the established plant

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1 system, so we have good assurance that they will
2 actually get done.

3 And as we've discussed before, we have
4 plans -- the NRC does, to go back and do a
5 verification at Year 39, coming to 40, to see that all
6 these commitments that they made were actually
7 accomplished for each of the units in the U.S.

8 Next slide just shows you where we are in
9 Region II. We started off with Oconee and we've been
10 more active, of course, than the other regions. And
11 those are all the things we have got accomplished so
12 far.

13 Next slide over. And the two we are
14 having progress right now are Browns Ferry and
15 Brunswick. We've completed the inspections at
16 Brunswick and we're quite pleased with the results
17 from those inspections.

18 The next slide is just the text that came
19 out of our one inspection that we did at Browns Ferry.
20 That was November 29 to December 17. I used exactly
21 the same words, because I think they reflect exactly
22 the status. We observed that they were not nearly as
23 far along as we would have expected in the
24 implementation process. It really hasn't done
25 anything towards implementation of aging management

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1 programs.

2 They haven't -- for existing programs, the
3 identification and selection of which particular
4 existing procedures constitute aging management
5 program have yet to be done. That is, for fire
6 protection they had a piece of paper that had lists of
7 every procedure that had to do with fire protection on
8 site. But when we asked them, now, like most folks
9 do, what constitutes the aging management program
10 there, no answer. They hadn't thought that far yet.

11 And so we concluded that we need to go
12 back again to Browns Ferry. And we're going to do
13 that -- we have that scheduled right now for September
14 19. We have a one-week inspection plan. We'll take
15 as much time as we need. And we've discussed the
16 progress that they've made with them.

17 There's nothing necessarily wrong with the
18 results that came out of this. We were there early.
19 They weren't ready. And we didn't know they weren't
20 ready. And they've been dedicating most of their
21 efforts towards NRR's dealing with NRR's REIs that
22 they've that they've been given and hadn't put the
23 necessary resources or forethought into beginning
24 implementation of aging management programs.

25 Next slide over. In walking plant

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1 systems, we went quite a few places on the operating
2 Units II and III, and I walked a bit through Unit I
3 myself. Of course, Unit I gets detailed inspections
4 day by day by various inspectors, more than we can
5 possibly do with our team.

6 But we didn't identify anything that was
7 of significant concern to us. There was one today
8 issue, a degraded condition was identified where Unit
9 I construction activities had instructed the emergency
10 equipment cooling water discharge catch basin -- it
11 was kind of literally a catch basin out there for
12 Units II and III that was -- had been covered over
13 with construction trailers and hadn't been
14 sufficiently regarded as part of the Unit I
15 construction effort.

16 So our plans are to go back to Browns
17 Ferry, and we're looking forward to significantly
18 improved results for their plans for implementation.
19 That concludes what I have to say about license
20 renewal. That's where we are at Browns Ferry and in
21 Region II. Any questions?

22 MR. SIEBER: If not, I'd like to tell you
23 that the work you do is important to this whole
24 program, and your reports are important to us, and
25 particularly your visits to headquarters at White

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1 Flint, to tell us firsthand what you find, because
2 implementation, the existence of the programs and the
3 implementation is truly the most important part of
4 this.

5 So we appreciate that and thank you very
6 much.

7 MR. JULIAN: Well, I appreciate the
8 thought. We think our work is important. And coming
9 up and talking to the ACRS is always interesting.

10 MR. SIEBER: Okay.

11 MR. JULIAN: They always manage to go off
12 somewhere where I had even expected.

13 MR. SIEBER: Okay. Thank you very much.

14 MR. JULIAN: Thank you.

15 MR. SIEBER: Next will be the Engineering
16 Pilot Inspection.

17 MR. OGLE: Hi, I'm Chuck Ogle. I'm a DRS
18 Branch II, and I have responsibility for doing the
19 engineering inspections we do in the region, the SSDPC
20 inspection, and this inspection was done -- the pilot
21 inspection we did was done under my watch.

22 I'm joined here by Jim Moorman. Jim
23 Moorman was the team leader for this inspection. He's
24 also a branch chief in the operation branch here in
25 Region.

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1 Next slide please, over. As I said, we're
2 going to talk about the region's experience with the
3 Engineering Pilot inspection. As you probably know,
4 each of the regions performs one pilot inspection. We
5 did ours at V.C. Summer per that TI 158, and we did it
6 in October and November of last year.

7 Next slide, please. If you go into the TI
8 and take a look at what it tells you to do, it
9 discusses identifying and verifying low margin risk
10 significant components and operator actions. And in
11 that sense, what that was translated for us, and what
12 we did was we identified risk significant operator
13 actions and components using the standard risk tools
14 that we have available.

15 And then additional on-site work was done
16 to try to understand which components had low margin.
17 What did we really need to spend our time looking at?
18 And that included things like understanding the
19 engineering design of the components, taking a look
20 out at the plant of the material condition. And also
21 any operating experience or corrective action program
22 issues that were out there.

23 The TI specifically called out to take a
24 look at operating experience. You can do it per the
25 SSDPC module. We do it that way in this region

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1 already. Also the TI advertiser was not limited to
2 mitigating system, which is the standard focus of the
3 SSDPC inspection.

4 So if you go back and take a look at what
5 the team actually spent time looking at, the
6 components that were identified, the items that were
7 reviewed were in those systems: EFW, Service Water,
8 CCW, diesel, and the CCW systems.

9 MR. DENNING: And did you base that on
10 SPAR? Or did you base it on going to the utility and
11 using their --

12 MR. MOORMAN: We used the licensee's PRE
13 model.

14 MR. OGLE: Okay. Next slide, please. I'd
15 like to talk just for a second about the team
16 composition, because I think that was a critical part
17 of this inspection and why it was successful. As I
18 said, Jim was
19 the team leader for the inspections, a very
20 experienced inspector. He had a lot of experience
21 leading SSDPC inspections. He's also a very competent
22 inspector.

23 We also had a region-based electrical and
24 mechanical inspector. So we had both an electrical
25 and mechanical. And they were chosen for their

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1 experience and for their abilities to accomplish the
2 inspection.

3 We also had the resident inspector for the
4 site on the inspection. That's a very powerful
5 multiplier force when we do an inspection. They know
6 how to use the information gathering systems at the
7 site, so there's zero learning curve there. They know
8 where some of the problems are, where some of the
9 issues are. And they know the people too at the site,
10 who to talk to, who is the system engineer. It's
11 pretty quick to come up to speed.

12 We also had three contractors on the
13 inspection. And they were very experienced, very
14 knowledgeable contractors that added quite a bit to
15 the inspection. We also -- and this is, I think,
16 another critical part of this inspection, why it was
17 successful, is we had a lot of our SRA support on the
18 inspection.

19 We had the SRA go on the bagman trip with
20 us. He also was involved in the component selection
21 at the site. And he also came out for the last week
22 of the inspection, just so any issues that we would
23 have to process through the SDP, he'd be there to
24 gather the information first-hand.

25 That's a lot more than we normally would

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1 do. In this region, we usually -- it's not unheard of
2 us having the SRA out there on the inspection, at
3 least for the bagman trip. That's -- we've had a fair
4 amount of that going on.

5 And the SRAs will also get involved in
6 preparations. They'll give training, they'll talk
7 about the systems, they'll help the inspectors,
8 they'll guide the inspectors on selecting components.
9 But this was above and beyond what we typically will
10 see. And this was a lot of support.

11 And the bottom --

12 MR. SIEBER: Let me ask a question about
13 that. For the last couple of years we've gone to
14 different regions.

15 And one of the things that I and a couple
16 of my colleagues have done is to try to picture the
17 workload through the senior reactor analysis, and
18 all -- particularly when the SPAR models were being
19 developed, and there was a lot of interchange with the
20 licensees, and some cases where there were
21 significance determinations that were in question.

22 It seemed to me that the SRAs were perhaps
23 even overutilized in some regions. Do you find that
24 situation in Region II, since their role in life seems
25 to be expanding?

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1 MR. MCCREE: Well, the short answer is
2 yes. We've tried to manage that and balance it over
3 the years. What we've done, and it's really helped us
4 considerably, is have both of our SRAs working for a
5 single branch chief. We've gone through several
6 iterations of how many -- who they were working for.

7 There was initially a regional
8 administrator ten years ago. They replaced him under
9 the Division Director of Reactor Safety. And now
10 we've placed them -- then we went to two separate
11 branch chiefs, and now we have them both working for
12 a single branch chief, which helps us to better manage
13 their workload and make sure that it's balanced
14 between the two of them.

15 One of the things that we do a bit
16 differently than our counterparts in the other regions
17 is we try to minimize the number of inspections. In
18 fact, the SRAs need very few inspections. And we
19 place them on inspections very selectively, because
20 they're such a significant resource to us in our day
21 to day operations.

22 So the combination of the managing, what
23 they do, and selectively deciding when to place them
24 on inspections -- that helps us to levelize their work
25 and get the best out of them.

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1 MR. SIEBER: Okay. You're aware that
2 the -- there is a potential out there for saying this
3 is my expert in this area, so I'm going to, you know,
4 keep putting rocks in their knapsack until finally
5 they become useless, or the results that they produce
6 are so late that they --

7 MR. MCCREE: Right. And again, that's one
8 of the benefits that we derive from having them work
9 for one branch chief. The other thing I'll mention is
10 that we are the only region that has the first two
11 SRAs that went through the development program. We
12 still retain those.

13 The other regions have unfortunately, but
14 fortunately those individuals are very knowledgeable,
15 very capable, and they've developed themselves into
16 branch chiefs. Some are in the SES program now. But
17 we managed to retain or keep very employed our two
18 original very capable SRAs. And we're very happy with
19 that.

20 MR. SIEBER: Well, the ones I've met
21 throughout the agency I think are pretty good and very
22 conscientious. And I think they're important to the
23 agency. And I think their talents need to be focused
24 on things that are most useful to the agency.

25 MR. MCCREE: That's what we try to do.

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1 MR. SIEBER: Okay. Thanks.

2 MR. OGLE: I guess the last point, and I
3 think it's critical, is that we stacked the deck for
4 this inspection. It was very experienced folks, a lot
5 of SRA support. The team was very competent. And
6 there were not a whole lot of distractions.

7 Sometimes our inspectors -- they're still
8 finishing up the work that has to be done from the
9 last inspection. They don't get the time to correct.
10 Something might come up that distracts them. So that
11 did not happen in this situation. So we had a very
12 focused team and a very experienced team.

13 Next slide, please. Some additional
14 things that I think we did that helped us achieve some
15 successes -- Jim went up and took a look at the VY
16 inspection, the Vermont Yankee inspection. That was
17 the first one. He went up and watched how they -- he
18 observed how they were selecting the systems and
19 components, the items they were going to look at.

20 Our division director was involved in the
21 development of the TIs. So he helped us from getting
22 too far astray. And historically, the inspections
23 that we've done in this region, the design inspections
24 have been focused on events. We take a look at -- and
25 not exclusively, but we've done a lot of tube

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1 ruptures, load codes, a loss of offset power, those
2 are things we'll go out and look at. And so you end
3 up looking at a lot of different things.

4 You already are going to get looking at
5 operator actions. You're already going to look at OE.
6 So a lot of what was in this TI was stuff we were
7 probably already doing. We weren't out just looking
8 at the SI system. We weren't out just looking at RHR.
9 We were looking at broad programs and things.

10 So I think that the way the inspection of
11 the TI came down was very similar to what we were
12 already doing. And just some of the details of what
13 we did -- we had a bagman trip. They had to leave the
14 SRA -- and my slide is incorrect. Also the --

15 MR. SHACK: No, Chicago when -- you know,
16 the bagman trip. whether it was something you needed
17 to do.

18 MR. OGLE: Well, we call it the
19 preinspection visit. So I'm sorry. Our preinspection
20 visit was to leave the SRA and three contractors.
21 Then we had three on-site weeks --

22 MR. WALLIS: So this bagman trip is just
23 a pre-inspection? Was that it?

24 MR. OGLE: Right. It's to get them laid
25 out --

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1 get the references.

2 MR. WALLIS: Same in Chicago.

3 MR. OGLE: Get the material, get the
4 paperwork. Check baggage, badge and stuff like that.
5 As I said, three on-site weeks for the team, which is
6 more than we typically do. And as I said earlier, we
7 have the SRA on site for the last week.

8 Next slide, please. The inspection
9 results. The overall result was that the things that
10 we looked at, we were pretty comfortable that they
11 were capable of performing their functions. We had,
12 as far as the accounting goes, we had two green non-
13 cited violations. One was a diesel generator
14 surveillance inadequacy that the licensee had
15 previously identified. And also some inadequate
16 corrective actions for operator timeline.

17 We also had one potentially greater than
18 green finding, which involved -- which was
19 subsequently determined to be a green NCV, and that
20 involved tubercles, some biologicals that were growing
21 on the inside of the piping between EFW suction and
22 the service water. It was ventilated through piping.
23 There was biologics that were growing in there.

24 And then if you take a look on the
25 downstream side of the EFW pumps, there are float

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1 control valves with -- that have very small passages
2 in them, about an eighth of an inch -- it was an
3 eighth of an inch. Right?

4 A very small -- hundreds of them, but the
5 concern was that this dead leg of piping, if the EFW
6 pump had to start and the CST was depleted, you'd
7 eventually have to go through your service water
8 piping, and some of this stuff would slough off and
9 potentially render your EFW pumps inoperable.

10 MR. SIEBER: So now this is the summer
11 plant?

12 MR. OGLE: Yes.

13 MR. SIEBER: Okay. At Browns Ferry?

14 MR. OGLE: And we --

15 MR. SIEBER: Just so that's clear.

16 MR. OGLE: We ran that through -- we ran
17 that through our SDP. It came out as initially white,
18 yellow. We had a regulatory conference with the
19 licensee, and we were persuaded that it was a green
20 finding.

21 We still have one unresolved item pending
22 with the licensee. It involves the potential for
23 certain components to be damaged by tornadoes. And
24 right now headquarters is working on an RAI to
25 interface with the licensee. We have a TIA on that.

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1 So that still hasn't been resolved.

2 I guess for me personally, the most
3 startling aspect of this whole inspection, the thing
4 I took away from it was every one of these problems,
5 the licensee knew about, every single one.

6 In other words, we didn't come in and find
7 anything new. It was more a case of the licensees'
8 response to the problems was not adequate. And they
9 had loitered; they had lingered. So that was, for me,
10 a real take-away on this inspection.

11 MR. SIEBER: What was the rationale from
12 going from a white finding to a green finding?

13 MR. OGLE: I think the -- and you can
14 correct me on this if I'm wrong. But I think we
15 couldn't get the initiating-event frequency high
16 enough to require the licensee to draw on the service
17 water system.

18 We have a large CST; it's very robust.
19 It's sheltered by a bunch of other tanks. It's
20 unlikely that they're going to have to go to the
21 service water.

22 The other thing is --

23 MR. SIEBER: In a deterministic world,
24 however, that would have been a sock it to you.

25 MR. OGLE: That's why it got our

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1 attention.

2 MR. MCCREE: That's exactly right. And
3 they also made an argument that we accepted, too, that
4 they wouldn't necessarily shut down the plant right
5 away even if they did lose the CST, so we spent a lot
6 of time on that.

7 MR. WALLIS: What's the last bullet mean?
8 I mean, that last bullet. What's -- it seems a bit
9 like governmentese, that last bullet there? What's it
10 really mean?

11 MR. OGLE: I guess I was surprised that
12 every one of the issues the licensee knew about. I
13 mean, that is not typically what we see in an
14 inspection. I mean, when my guys go out and do an
15 inspection, I typically don't have them saying the
16 licensee knew about this and the licensee knew about
17 this. That was surprising to me as an inspector.

18 MR. MCCREE: This is another example of
19 what we had identified several years ago with Summer's
20 inadequate corrective action, their public
21 notification and resolution, specifically the
22 implementation of effective corrective actions.

23 We had engaged them two years ago at the
24 senior management level to explore -- to determine
25 whether we had gotten their attention. We have done

1 our biennial PI&R -- problem identification and
2 resolution inspection for our inspection, and had
3 identified similar issues.

4 So at that point, we did get their
5 attention. They did implement an improvement program.
6 And by the time the team went out in the fall of last
7 year, they had made substantial progress. However, as
8 Chuck mentioned, these issues had been identified.
9 They had not taken effective corrective action. And
10 we used this as additional ammunition to say, Okay,
11 guys, we still need to make progress here.

12 And they need -- they scheduled the
13 regulatory conference for this potential white
14 finding. They had already scheduled a meeting with us
15 I think about a few weeks later to come in and talk
16 about the actions that they had undertaken to address
17 the challenges in their PI&R program.

18 So what this points to is an issue that we
19 had already engaged the licensee on, and that is that
20 they needed to improve their ownership of their
21 corrective action program.

22 MR. SIEBER: It's why you might call a
23 safety management issue? This is --

24 MR. MCCREE: Safety -- again, their
25 effective implementation of the existing program.

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1 MR. WALLIS: What? They had a corrective
2 action program, but they were lethargic about
3 implementing it or something?

4 MR. MCCREE: In this particular area, yes.

5 MR. OGLE: I'm not sure we ever decided
6 why. I don't think we ever went back and tried to
7 figure out where the corrective action program didn't
8 fix the problem, whether it was resources, or --

9 MR. WALLIS: Well, was it because senior
10 management was letting them get away with a sloppy
11 program, or --

12 MR. OGLE: I don't think we ever did that
13 analysis.

14 MR. SIEBER: It doesn't sound like the
15 program is sloppy. It sounds like they identified
16 things, but just don't -- they said, Well, I know
17 that's there, but that's okay.

18 MR. OGLE: No, I don't think -- that was
19 not what we took away. They had attempted to fix some
20 of these -- well, they had attempted to fix, like for
21 example, in the tubercle issue, they thought they had
22 done enough. But at the end of the day, when we went
23 up to look, they still had the problem.

24 MR. SIEBER: Yes.

25 MR. OGLE: And if you've been doing that

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1 for 12, 15 years, that's not adequate corrective
2 action. Now, I can't tell you that's a resource
3 problem. I think maybe that that's management. Okay.

4 But I can tell you there was a nice
5 paperwork trail that can justify everything, but
6 it's -- the bottom line was it wouldn't work. But we
7 didn't go into an analysis of why the corrective
8 actions were not. It just jumped out that they were
9 all known.

10 MR. SIEBER: And I take it right now it's
11 too early to see if there is a change in performance.

12 MR. MCCREE: As far as their corrective
13 action program?

14 MR. SIEBER: Yes.

15 MR. MCCREE: We have seen improvements in
16 the implementation of the adequacy of the corrective
17 actions that they've implemented. We have seen
18 evidence of that. Some of that comes out of the lack
19 of identifying findings, where they -- the
20 effectiveness of their corrective actions has been
21 inadequate, so the lack of problems is an indicator of
22 improvement as well.

23 MR. SIEBER: Okay. Thank you.

24 MR. OGLE: Okay. Next slide. Okay.

25 Overall, I guess as the guy that was in charge of

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1 this, I'd rate this as a thorough inspection. And my
2 sense of it, when I went out to the site and listened
3 to the issues, watched the interaction with the
4 licensee, I think it was very thorough, a lot of good
5 rocks were turned over.

6 The issues were all solid. We didn't get
7 any pushback from the licensee that, Hey, you don't
8 get it. You don't understand. I'm not saying that
9 they were 100 percent everything we said we were
10 right. But a lot of times you get pushback from the
11 licensee, and we didn't get that.

12 Very clear communications on this: no "we
13 didn't understand what you meant by this." A lot of
14 good dialogue on this. And also as far as the cross-
15 cutting problem identification resolution, we -- those
16 were identified in this report. The cross-cutting
17 aspects and no pushback, no argument from the licensee
18 on that.

19 MR. WALLIS: This is the place where they
20 had a stalactite the size of a person. It was a long
21 time ago.

22 MR. OGLE: It certainly would be a --

23 MR. SIEBER: Well, this is where the crack
24 in the piping was.

25 MR. OGLE: Correct.

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1 MR. SIEBER: Moving on.

2 MR. OGLE: And finally, we met our
3 timeliness goal for the one issue we did put through
4 the SDP. Areas that -- next slide, please. Areas
5 that I thought we could improve in -- management of
6 assumptions in the SDP. There was some critical
7 assumptions in the SDP that I think if we had given
8 them -- I had given them a more thorough scrub-through
9 we would have perhaps saved a little time.

10 And also they -- during the course of the
11 inspection, the inspectors I thought raised some
12 pretty good questions about how come the EFW system is
13 operable with this tubercle issue? And I know I was
14 slow to pick up on that during the conduct of the
15 inspection. So those were both fair questions I think
16 we could have done -- I could have done a better job
17 on.

18 All right. Questions going forward -- and
19 this served as the model of the new engineering
20 inspection that we're going to start in January.
21 Sustaining the team composition. As I said a couple
22 of times, this was a pretty accomplished team. It is
23 not typical of the team that we typically send out on
24 an inspection. Not that -- you know, we have good
25 inspectors, but this is a very knowledgeable team.

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1 Also, the knowledge transfer from the
2 contractors -- as you'll see in my next slide,
3 contractors -- embedded contractors are part of the
4 schedule or the routine for the new inspection. And
5 transferring the knowledge that the contractors have,
6 they come as very experienced individuals.
7 Transferring that knowledge to our inspectors so that
8 we're eventually able to do the inspections is going
9 to be a challenge for us. We're not at that point
10 yet.

11 And finally, the impacts on the inspection
12 schedule. New inspections, I'm going to show on the
13 next slide, it's a little bit longer. And just the
14 sheer number of weeks we have to spend on-site is
15 going to make it more challenging to schedule and for
16 us to get out and do them.

17 The final slide was something I put
18 together that shows the difference between the three
19 inspections, and gives you an idea of the resources.

20 You can see that if you go from what we're
21 doing currently for the existing inspection to the
22 pilot if we drop by one for the NRC personnel, and
23 under the new pilot inspection, we'll -- or I'm sorry,
24 the new engineering inspection, we'll only have three
25 NRC personnel.

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1 We'll have a team leader, a mechanical
2 inspector, or an electrical inspector, either or, and
3 an operations inspector. Our contractor support --
4 right now in the region we usually get probably five
5 to seven contractors a year, it just depends. And we
6 split those between -- usually between the fire
7 protection, the SSDPC inspections, so if you do the
8 math, I figure we have one contractor on a half to a
9 third of the SSDPC inspections.

10 The new procedure calls for two contractors.

11 MR. DENNING: What is the source of those
12 contractors? Who are these people?

13 MR. MCCREE: Source -- it's NRR is -- our
14 program-sponsored budgets allocates each region
15 contractors, contractor by number of contractors, and
16 the number of different companies to, of course, bid
17 for the contract is the primary.

18 MR. DENNING: I was just wondering what
19 kind of companies don't have conflicts of interest
20 that have the kind of experience you're looking for
21 that there are obviously companies that --

22 MR. SIEBER: Yes.

23 MR. MCCREE: Every once in a while we'll
24 see ex-NRC boys on there.

25 MR. SHACK: Now, are they particularly --

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1 are you looking for particular areas of expertise, by
2 and large, or -- when -- so if you have a mechanical
3 inspector, will you get the contract to provide an
4 electrical inspector? Is that the --

5 MR. OGLE: I want to say usually we are
6 trying to fill a need. Usually that's the case. I
7 think on the new inspections we'll see one mechanical
8 and one electrical. Usually we're trying to fill a
9 hole.

10 Inspectors in training, our new
11 inspectors, we usually have one -- we usually have
12 several on the inspections we're doing now. Right now
13 the new module calls for one. I suspect we'll go a
14 little heavy on that just so we can try to transfer
15 knowledge.

16 The length of the inspections is probably
17 one of the big changes. We're going to go from
18 fundamentally five weeks of inspection with two on-
19 site weeks to seven weeks with three on-site weeks
20 that's a big step-up force.

21 MR. SIEBER: That balances the fact that
22 you're cutting back on the number of people. But
23 overall, it's the same kind of an effort it just takes
24 longer.

25 MR. OGLE: Right. We've still got to put

1 three weeks into the schedule on site, though. That's
2 challenging.

3 MR. MCCREE: Yes, and not to minimize it,
4 the impact on contractors, at least the contractor
5 budget, is significant. It's over a 300 percent
6 increase for each region in the number of contractors
7 that will be allocated.

8 MR. SIEBER: As a former contractor,
9 that's okay.

10 MR. OGLE: That's --

11 MR. LARKINS: Did the other regions come
12 up with similar findings in terms of areas for
13 improvements or questions stemming from --

14 MR. OGLE: I don't know that I can tell
15 you in terms of findings they had during the
16 inspections. They had at least as many as we did,
17 maybe more. But I don't know about other
18 observations.

19 MR. LARKIN: But I mean, the other regions
20 conducted pilots. And there was some agreement, I
21 guess, across all the regions on a similar approach to
22 these engineering inspections.

23 MR. MCCREE: Right. And I think that's
24 how the new engineering inspection was developed. It
25 had -- the folks that did the inspection actually got

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1 back together. So yes, there was consensus.

2 MR. OGLE: I talked a little bit about
3 SRA's support. I don't think that we'll see a whole
4 lot of difference there. And then just something I
5 threw in there just at the end to reflect, I think,
6 the amount of findings we had on this pilot
7 inspection. We had a fair number of findings compared
8 to what we historically -- it's not uncommon for us to
9 go out on an SSDPC inspection and have no findings.
10 That's not unheard of. It happens a lot, in fact.

11 But we had a lot -- we had four issues,
12 three of which were findings and one still to be
13 determined. So that's more than we typically get.

14 And that's what I wanted to talk about
15 today. If you have any questions, I'll be more than
16 happy to answer it.

17 MR. SIEBER: I think that's very good.
18 I'm encouraged with the work you're doing right now.
19 And -- but I think you're headed in the right
20 direction.

21 VOICE: These engineering inspection
22 initiatives are really important.

23 MR. SIEBER: Uh-huh. Okay. Thank you.

24 VOICE: I think we're through for the day.

25 MR. SIEBER: Yes, we are. That's totally

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1 amazing. How did we finish early?

2 What I would like to do is recess for the
3 day and -- but I -- before we do that, I'd like to ask
4 any of the members if they have any comments about
5 what they preferred today or concerns that they may
6 have so that we can talk about them for a little bit
7 before they escape our memory. And what the Region II
8 folks know.

9 Mario, do you have anything that you'd
10 like? Rich?

11 MR. POWERS: I'm going to have to confess
12 to having lost track of the inspection processes that
13 we have in the ROP. And we used to have baselines and
14 complementaries and things like that. I've lost track
15 of all that, and I wouldn't mind a little tutorial
16 once he recesses this meeting, if you could just spend
17 a few minutes with me to outline the general classes,
18 strictly for my education, not for the benefit of the
19 committee, just for me.

20 MR. SIEBER: I think that's a good idea.
21 And you may have company.

22 VOICE: You'd be entirely welcome.

23 MR. SIEBER: Okay. Vic? Nothing?
24 Graham?

25 MR. WALLIS: I found it very useful and

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1 informative meeting, and I look forward to more of the
2 same tomorrow.

3 MR. SIEBER: Okay.

4 MR. DENNING: Actually, I did have one
5 thing, Jack. And that was, you know, I had expected
6 to see a little bit more of the time schedule for
7 activities that are going to be done by the NRC for
8 the Browns Ferry relative to you know, yesterday we
9 heard kind of the time frame of what the plant's
10 doing. But I didn't quite get that -- and I thought
11 we were going to hear today kind of what the overlying
12 NRC activities would be.

13 MR. LARKINS: There is this recovery
14 issues list which is, quote, fully developed. It may
15 be useful if we could get a copy of that and you could
16 use that as the review, as a focal point for some
17 topics you may want to pick up in a meeting back at
18 headquarters.

19 MR. DENNING: Okay.

20 MR. MCCREE: And if you're asking for a
21 schedule, one of the -- I can't remember in response
22 to this question, that Steve Cahill mentioned that
23 they shortly will be issuing our mid-cycle assessment
24 letter, which will have as an attachment the schedule
25 of inspections for the next 18 months, that we'll be

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1 sending such letters out to all the sites, all the
2 regions, in fact, will be sending this letter out.

3 And that report -- it's called Report 22
4 in our reactor program system, has a detailed schedule
5 of all the inspections that we'll be doing. Now once
6 the restart panel is in place, that schedule may
7 change some. But the major inspections that we will
8 do will be on that schedule. So we can provide you a
9 copy of that.

10 MR. SIEBER: So if there are no further
11 questions, what I would like to do is recess until
12 tomorrow morning at 8:30.

13 (Whereupon, at 4:55 p.m., the meeting was
14 recessed, to reconvene at 8:30 a.m., Thursday, August
15 25, 2005.)

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CERTIFICATE

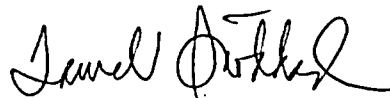
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in the matter of:

Name of Proceeding: Advisory Committee on
Reactor Safeguards
Plant Operations and Fire
Protection Subcommittees
Region II Visit

Docket Number: n/a

Location: Rockville, MD

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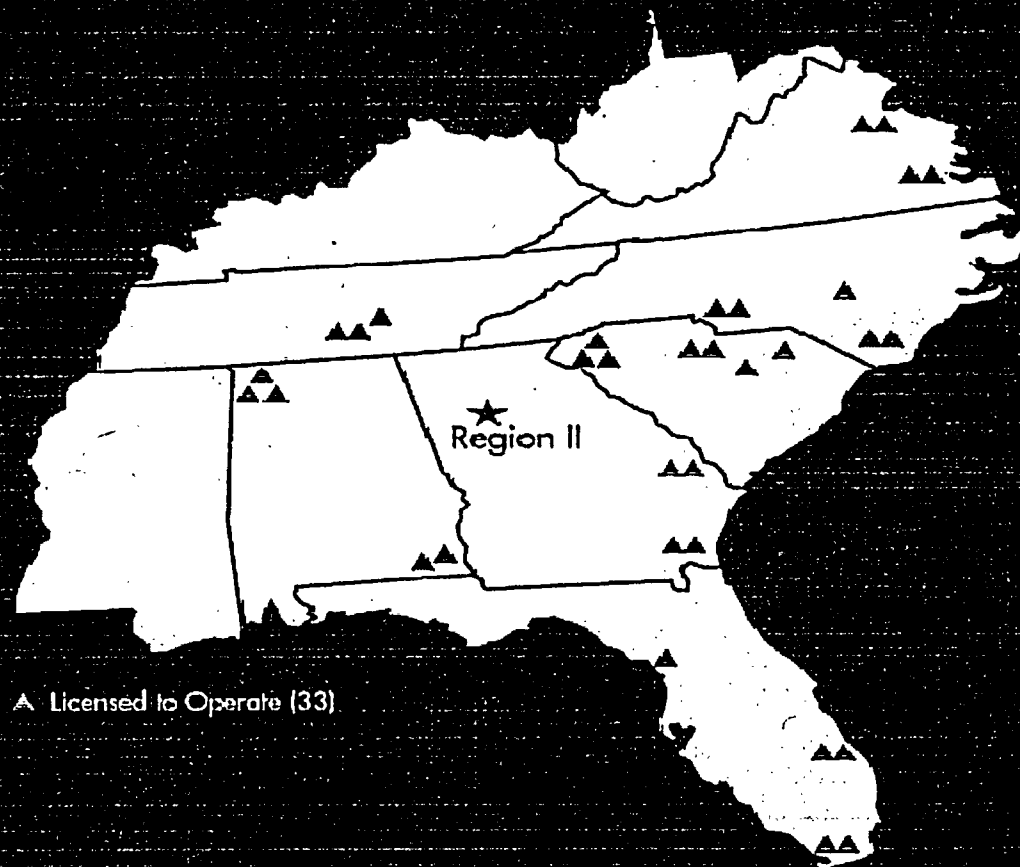
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REGION II**



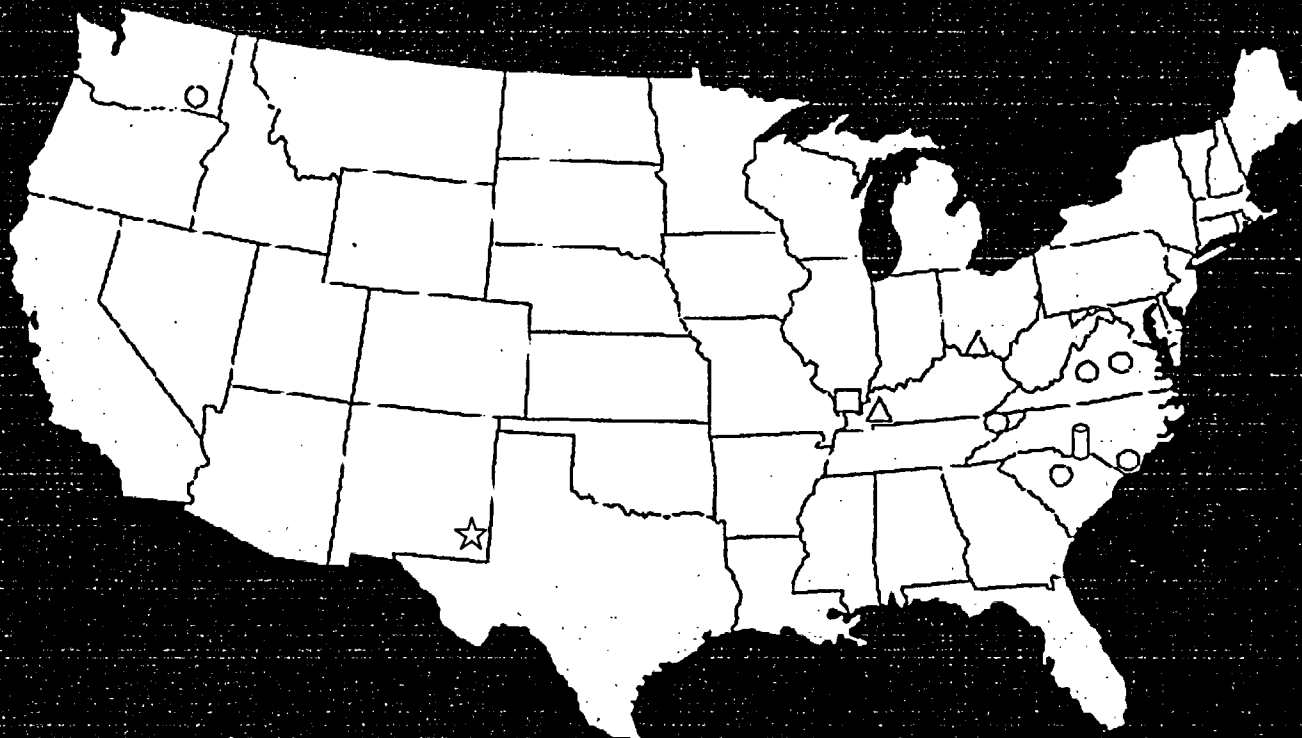
**Visit of
The Advisory Committee on Reactor Safeguards
Plant Operations and Fire Protection
Subcommittees
August 24 – 25, 2005**

Region II Power Reactors



A Licensed to Operate (33)

Region II Fuel Cycle Facilities



- Uranium Fuel Fabrication Facility (6)
- Uranium Hexafluoride Production Facility (1)
- ▲ Gaseous Diffusion Enrichment Facility (2)
- ★ Proposed Gas Centrifuges
- ▢ Proposed MOX Facility

Region II Data

Number and Type of Licensees

- **18 Power Reactor Sites**
 - 33 Operating Reactors**
 - 3 Reactors Under Construction (Deferred)**
- **20 Westinghouse (PWR)**
 - 7 General Electric (BWR)**
 - 4 BWX Technologies (PWR)**
 - 2 Combustion Engineering (PWR)**
- **10 Fuel Facilities**
- **1350 Licensed Operators**

OFFICE OF THE REGIONAL ADMINISTRATOR

Organization Chart

OFFICE OF THE REGIONAL ADMINISTRATOR

REGIONAL ADMINISTRATOR
DEP. REGIONAL ADMINISTRATOR

William D. Travers
Loren R. Plisco

Office of Investigations
Field Office
Director

Cheryl L. Montgomery

Public Affairs
Officers

Kenneth M. Clark
Roger D. Hannah

Regional Counsel/
Enforcement Officer

Carolyn F. Evans

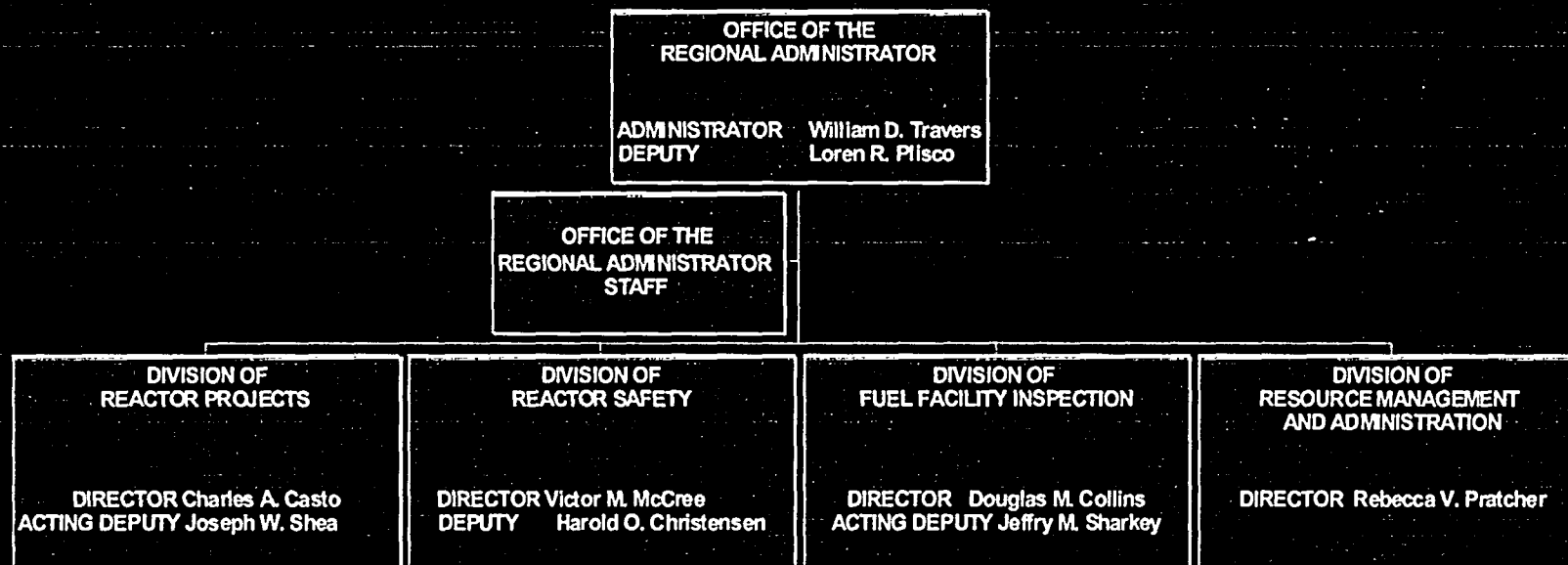
State Liaison
Officer

Robert E. Trojanowski

———— DIRECT SUPERVISION
..... COORDINATION

United States Nuclear Regulatory Commission

Region III Organization Chart



DIVISION OF REACTOR PROJECTS

Organization Chart

DIVISION OF REACTOR PROJECTS

Director
Acting Deputy Director

Charles A. Casto
Joseph W. Shea

Projects Branch 1

Chief

Michael E. Ernstes

Catawba Oconee
McGuire

Projects Branch 3

Chief

Joel T. Munday

Crystal River St. Lucie
Turkey Point

Projects Branch 5

Chief

Kerry D. Landis

North Anna Summer
Surry

Projects Branch 2

Chief

Malcolm T. Widmann

Farley Hatch
Vogtle

Projects Branch 4

Chief

Paul E. Fredrickson

Brunswick Harris
Robinson

Projects Branch 6

Chief

Stephen J. Cahill

Browns Ferry Sequoyah
Watts Bar

Major Functional Responsibilities of the Division of Reactor Projects Include...

- Coordination of the overall nuclear power plant inspection program at nuclear power sites
- Coordination of the assessment of licensee performance
 - Quarterly
 - Mid Cycle Assessment
 - End of Cycle Assessment
 - Agency Action Review
 - Commission Meeting
 - Licensee Public Meeting
- Support incident response activities

RESIDENT INSPECTION PROGRAM

- Management and implementation of the Resident Inspector Program
- Site coverage requirements
 - 2 Residents minimum every site
- Keeping the Resident Inspectors' outlook fresh
 - Rotation every 7 years
 - Participation in inspections at other sites
 - Refresher training
 - Periodic Resident Inspector meeting (2 per year)

DIVISION OF REACTOR SAFETY

Organization Chart

DIVISION OF REACTOR SAFETY

Director
Deputy Director

Victor M. McCree
Harold O. Christensen

Engineering Branch 1

Chief
Charles R. Ogle

Engineering Branch 2

Chief
D. Charles Payne

Engineering Branch 3

Chief
Mark S. Lesser

Operations Branch

Chief
James H. Moorman

Plant Support Branch 1

Chief
Robert C. Haag

Plant Support Branch 2

Chief
Brian R. Bonser

Major Functional Responsibilities of the Division of Reactor Safety Include...

- Conducting inspections in the areas of Engineering, Fire Protection, Maintenance, Operations, Radiation Protection, Emergency Preparedness and Security.
- Leading special team inspections
 - Response to operational events
 - Fire Protection
 - Emergency preparedness exercises
 - Safety System Design and Performance Capability
- Administration of reactor operator license program
 - Examinations
 - License issuance
 - Requalification inspection
- Supporting incident response activities
- Overseeing Senior Reactor Analyst functions

DIVISION OF FUEL FACILITY INSPECTION

Organization Chart

DIVISION OF FUEL FACILITY INSPECTION

Director
Acting Director

Douglas M. Collins
Jeffrey M. Starkey

Fuel Facility Inspection Branch 1

Chief
David A. Ayres

Fuel Facility Inspection Branch 2

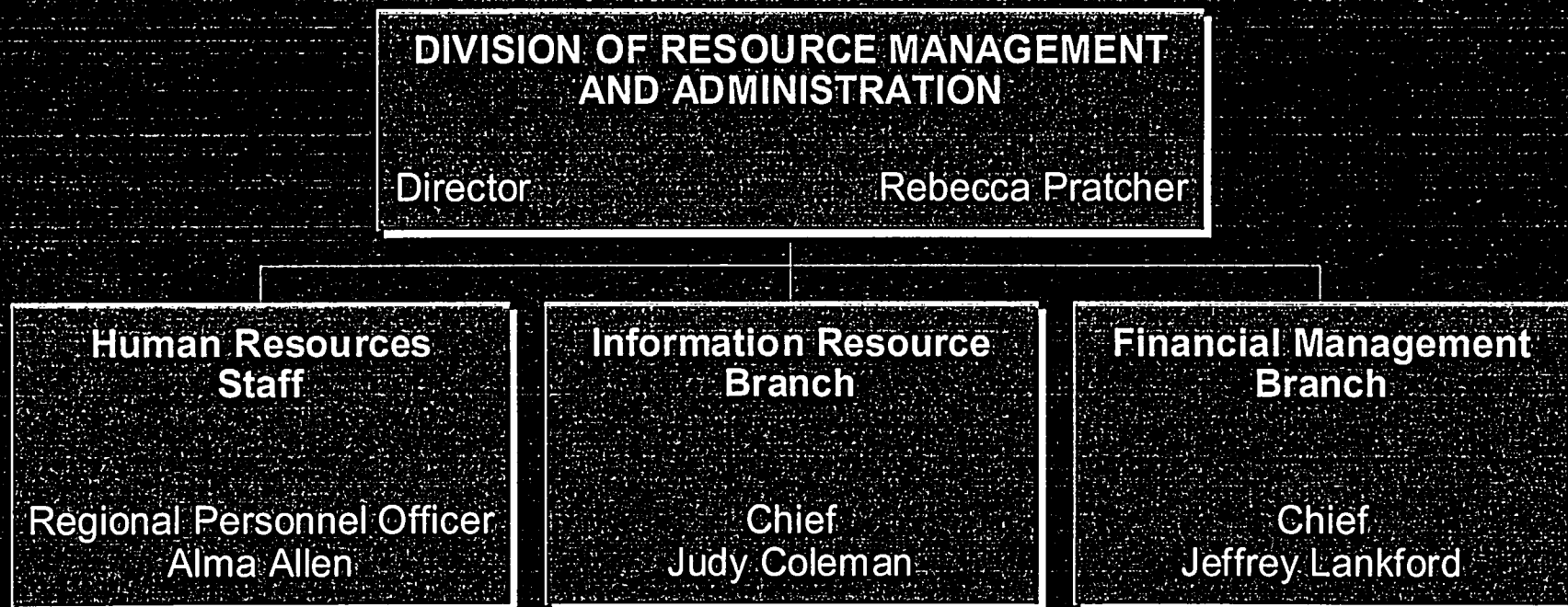
Chief
Jay L. Henson

Major Functional Responsibilities of the Division of Fuel Facility Inspection Include...

- Providing inspection project management for fuel facilities nationwide (high and low enriched, gaseous diffusion, gas centrifuge, uranium conversion)
- Supporting incident response activities
- Providing Resident Inspectors for two high enriched uranium facilities and one gaseous diffusion plant
- Overseeing the expansion of current fuel facilities and construction of new fuel facilities (MOX)
- Periodic Licensee Performance Reviews
- Inspection program and procedure development
- Inspector Qualification program development

DIVISION OF RESOURCE MANAGEMENT AND ADMINISTRATION

Organization Chart



Major Functional Responsibilities of the Division of Resource Management and Administration Include...

- Managing Human Resource Activities
- Managing Information Technology Requirements for the Region and Resident Sites
- Managing Budget Formulation and Financial Management and Execution
- Managing Travel and Procurement Activities
- Coordinating Training and Development
- Providing Administrative Support to the Region
- Coordinating FOIA Request
- Coordinating Licensee Fees

**Advisory Committee on
Reactor
Safeguards Plant Operations
and Fire Protection
Subcommittees**

August 24 - 25, 2005

**BROWNS FERRY 1
RECOVERY**

**Background and Oversight
Plans**

Stephen Cahill
Chief, Branch 6 (TVA Sites)
Division of Reactor Projects

TVA BACKGROUND

- Unit 1 In Lay-up since mid-1980's
- Routine Region II Oversight of Lay-up Program
- September 17, 1985, NRC issued a 50.54(f) letter
- Unit 2 restarted in 1991, Unit 3 in 1995, following
Commission briefings & staff approval
- TVA Preparations in 2002 for Board Decisions
- Key Assumptions / Plans

NRC PREPARATION BACKGROUND

- Initial NRC perspective & considerations
- Determined need for NRC Manual Chapter
 - ROP implemented since Unit 2 & 3 recoveries
- Other considerations creating need for a MC
- MC 2509 issued in August 2003 specifically to govern oversight of the Unit 1 Recovery
 - was developed by RII & IIPB
 - done openly with TVA involvement
 - final draft shared as public document

NRC PREPARATION BACKGROUND

(Continued)

- Key attributes of MC 2509
- Resources: personnel moves in Region, at site, and in NRR
- Regulatory Framework established
 - TVA sent letters in 2002 & 2003 to establish U1 restart scope
 - NRC issued a final Regulatory Framework agreement on August 14, 2003

Current Status

TVA SCHEDULE AND PLANT CONDITION

- Schedule success & scope growth
- Emphasis on productivity by TVA
- TVA BF1 staffing
- Phases of Recovery
- System turnover to Operations process - SPOC

NRC INSPECTION STATUS

- Quarterly Reports
- TVA Performance
- "Recovery Issues List" is fully developed
 - Issued as public document
 - TVA Quarterly Updates
 - planning tool
 - Item closure progress
- Focus of Inspections

NRC INSPECTION STATUS

(Continued)

- ROP Cornerstone Transition
 - Cornerstone (CS) Transition Matrix
 - Criteria
 - Inspections done for readiness
 - Transition letter issued December 29, 2004
 - Four CS's into ROP approach as of January 1, 2005

Current Plans

- Establish Restart Oversight Panel by October 1, 2005
- Commission communication paper

OTHER TOPICS

- SCWE / ECP & Allegation Trends
 - Receipt activity
 - TVA Improvements to ECPs
 - Routine NRC interaction with TVA and SWEC ECP Leads
- Public Interest / Involvement
 - Information available publically
 - Many opportunities for public involvement
 - Public Meeting Schedules

BROWNS FERRY 1 RECOVERY

Regional Inspection Activities

Mark S. Lesser
Chief, Engineering Branch 3
Division of Reactor Safety

Overview

- Discuss TVA Special Programs being inspected by DRS
- Discuss Two Examples of a Special Program
 - Summary of the problem
 - TVA Corrective Actions...
- Discuss Regional Inspections
 - Plans
 - Status
 - Results

Civil / Structural Programs

- Long Term Torus Integrity
- Large Bore Piping Supports
- Small Bore Piping and Instrument Line Supports
- Control Rod Drive Piping Supports
- Cable Tray and Conduit Supports
- HVAC Duct Supports
- Steel Platforms and Frames
- Seismic II/I

Electrical Programs

- Cable Ampacity
- Cable Installation and Separation
- Cable Splices
- Flexible Conduits
- Fuses
- Thermal Overloads

Material Programs

- Containment Coatings
- IGSCC

Engineering Programs

- Configuration Management / Design Baseline
- Design Calculations
- Fire Protection / Appendix R
- Environmental Qualification
- Probabilistic Safety Assessment

Example: Piping Supports

- Problem – Concerns identified with structural response to loadings including pressure, temperature, dead and live loads, seismic loads
- Sources – TVA QA, NRC inspections, industry programs, contractor reviews
- Root cause – lack of seismic design criteria records, weak quality control, failure to identify and track variances, attention to detail in implementing modifications

TVA Corrective Action

- Revise seismic ground motion input to seismic system analysis; approved by NRC
- Implement commitments to Bulletin 79-02 (Anchor Bolts)
- Implement commitments to Bulletin 79-14 (Seismic Analysis for Piping Systems)
- Conduct detailed walkdown and analysis of piping systems
- Identify "breakage"; evaluate and modify as appropriate

Example: Cable Ampacity

- Concern – Potential for undersized safety related cables
- Source – INPO finding at Bellefonte
- Root Cause - Lack of design calculations and incomplete design standards to account for effects of environment on cable ampacity

TVA Corrective Action

- New Design Standard written for power and control power cables
- Includes derating factors for coatings, fire wraps, cable tray covers, etc.; criteria approved by NRC
- Determine extent of non-conformance
- Evaluate, Derate, or replace cables

NRC General Inspection Plan

- Review References (BF Nuclear Performance Plan, NUREG 1232, SE)
 - Understand Scope, TVA Resolution and NRC acceptance for the Special Program
- Identify if U1 resolution is same as U2/U3
- If different, review method in detail
- Assess adequacy of licensee's walkdowns for "breakage"
- Sample Implementation of Evaluations and Modifications

Inspections

- Lead Inspector assigned to each Special Program
- Alternate Inspectors assigned
- Trainees included as practicable
- Inspection schedule integrated with other baseline inspection responsibilities
- Open items included (TMI Action Items, Generic Letters, etc.)
- Regional inspections coordinated with one DRS Branch Chief and DRP Project Engineer

Inspection Status Summary

- Inspections Complete
 - IGSCC
- Inspections Near Complete
 - Thermal Overloads
 - Cable Splices
 - Fuses
 - Cable Ampacity
 - Cable Tray, Conduit, and HVAC Supports
 - EQ
 - Steel Platforms and Frames

- Inspections Continuing
 - Torus Integrity
 - Large Bore Piping Supports
 - Cable Installation and Separation
 - Containment Coatings
- Inspections in Early Stage or Not Started
 - Small Bore Piping and Instrument Line Supports
 - Control Rod Drive Piping Supports
 - Design Calculations, Configuration Mgmt, Design Baseline
 - Fire Protection / Appendix R

Inspection Results

- Torus Integrity (Quality Assurance Program Deficiencies)
 - SL III Violation issued May 2004
 - Failure to ensure compliance with drawings and procedures, and to conduct adequate oversight of quality activities, resulting in multiple examples of omitted repairs

- **Causes**

- Workers became mis-oriented in torus
- Sketches confusing
- Work documents difficult to use
- Perceived time pressure
- Inadequate checking
- Lack of independence

- NRC completed inspection of corrective actions

Inspection Results (cont.)

- Large Bore Piping Supports (Activities not accomplished in accordance with drawings)
 - SL IV Non-cited violation documented May 2005
 - Undersized pipe support components (plate, strap, welds)
 - Pipe support base plate mis-oriented 90°
 - Pipe support dimension out of tolerance
- NRC inspections of corrective action and additional work ongoing

LICENSE RENEWAL ACTIVITIES IN REGION II

Caudle Julian
Senior Project Manager
Engineering Branch 3
Division of Reactor Safety

License Renewal Inspection Program Implementation

- License renewal manual chapter - MC 2516
- License renewal inspection procedure - IP 71002
- Site-specific inspection plan for each applicant
- Scheduled to support NRR's review
- Resources - consistent team of the same five inspectors
- Training program for replacement team members

License Renewal Inspections

Scoping and Screening Inspection

Objective: To confirm that the applicant has included all appropriate SSCs in the scope of License Renewal as required by the Rule

MC 2516 and IP 71002 have been revised to reduce the scope of Scoping and Screening inspections and combine them with Aging Management Program inspections
Focus is on 10 CFR 54.4 (a) (2) situations - non safety related that could effect safety related equipment

Aging Management Programs Inspection

- Objective: To confirm that existing AMPs are working well and to examine the applicant's plans for establishing new AMPs and enhancing existing AMPs
- Two weeks in length
- Examine records of past tests and surveillances from existing AMPs
- Examine implementation plans for new or expanded AMPs
- Verify inclusion of future tasks into established site task tracking system
- Verify that material condition of plant was being adequately maintained to date

Third (Optional) Inspection: Open Items

- 2 - 3 days in length
- Close any open items from previous inspections
- Close any inspection items requested by NRR
- Verify that applicant has loaded future tasks into established site task tracking system
- Verify that a Transition Plan for completion of license renewal project was established

RENEWED LICENSES ISSUED IN RII

Oconee
Hatch
Turkey Point
Dominion – North Anna & Surry
Duke – McGuire & Catawba
St. Lucie
Robinson
Summer
Farley

LICENSE RENEWAL REVIEWS IN PROGRESS IN RII

Browns Ferry
Brunswick

Browns Ferry License Renewal Inspection
AMP Inspection Conducted November 29 - December 17, 2004

The inspection concluded that LR activities were conducted as described in the License Renewal Application (LRA). The inspection also concluded that existing programs to be credited as aging management programs (AMPs) for license renewal are generally functioning well.

The inspectors observed during this inspection that the applicant had not yet begun the implementation process for new and enhanced AMPs and that the AMP procedures have yet to be defined and composed. Also for existing programs, the identification and selection of which particular existing procedures constitute the AMP had yet to be done. Therefore conclusions could not be reached on the acceptability of most AMPs. The inspectors concluded that NRC will perform another inspection when the applicant has progressed further with AMP implementation.

Browns Ferry License Renewal Inspection
AMP Inspection Conducted November 29 - December 17, 2004
(cont'd)

In walking down plant systems and examining plant equipment the inspectors found no significant adverse conditions and it appears plant equipment was being maintained adequately. One degraded condition was identified by NRC where unit 1 construction activities led to obstruction of units 2 and 3 Emergency Equipment Cooling Water discharge catch basins as described in paragraph II.C.12. The applicant took prompt action to clear the obstructions.

Second AMP inspection scheduled for September 19 - 23, 2005

ENGINEERING PILOT
INSPECTION

Chuck Ogle
Chief, Engineering Branch 1
Division of Reactor Safety

Jim Moorman
Chief, Operations Branch
Division of Reactor Safety

PURPOSE

Discuss Region II's experience with
the Engineering Pilot Inspection

BACKGROUND

Inspection performed per TI
2515/158 at V.C. Summer
10/4/04-11/19/04

Inspection Focus

- Low margin risk significant components and operator actions
 - Identify risk significant operator actions and components using risk tools
 - Further on-site review to identify components with low margin
 - Engineering design review
 - Observed material condition
 - OE or cap-review
- Operating experience specifically considered
- Not limited to mitigating systems
- Components selected primarily in EFW, SW, CCW, EDG and CCW systems

Team Composition

- Team leader
- Region-based electrical and mechanical inspectors
- Summer Resident Inspector
- Three Contractors
- Enhanced SRA support throughout inspection (with inspection experience)
- Team chosen for success: experienced and available

Additional Contributors

- Benchmarked VY inspection preps
- Division Director involved in development of TI
- Inspection not far removed for Region II's historical event-based approach

Conduct of inspection

- Bagman trip (lead and SRA)
- 3 onsite weeks for team
- SRA onsite for last week

INSPECTION RESULTS

- Components & systems reviewed were capable of performing their functions
- 2 green NCVs (EDG surveillance inadequacy, CA for operator timelines)
- 1 potentially greater than green finding determined to be green NCV (tubercles in EFW suction source)
- 1 URI still pending -tornado vulnerability
- Licensee's historical response to some conditions adverse to quality was not adequate

Successful Inspection

- Thorough inspection
- Solid issues identified
- Inspection issues clearly communicated
- Sound basis for cross-cutting PI&R issues
- SDP timeliness goals met for one issue put through SDP

Areas for Improvement

- Assumptions in SDP
- Timeliness of NRC questions regarding EFW system operability

Questions Going Forward

- Sustaining team composition
- Knowledge transfer from contractors
- Impacts of inspection schedule

	EXISTING SSDPC	PILOT INSPECTION	NEW ENGINEERING INSPECTION
Staffing (NRC)	Nominally 5 Team Leader Mechanical Inspector Electrical Inspector 2nd Mechanical/ Electrical Inspector Operations Inspector	4 NRC Personnel Team Leader Mechanical Inspector Electrical Inspector Summer Resident Inspector	3 NRC Personnel Team Leader Mechanical Inspector -- OR Electrical Inspector Operations Inspector
Contractor Support	1 on ½ to ½ of the Inspection	3 contractors	2 contractors
Inspectors in training	Usually	None	1 (+)
Length	5 weeks, Two onsite weeks	6 weeks, Three onsite weeks	7 Weeks - Three on site weeks
SRA Support	Bagman trip (frequently)	Bagman trip Onsite system selection week Portion of last onsite week	Bagman Trip
Findings	19 findings / 46 SSDPC inspections	3 Green NCVs 1 URI	

U.S Nuclear Regulatory Commission, Region II

Division of Reactor Projects
and
Division of Reactor Safety
Succession Planning

August 25, 2005

Victor McCree's Presentation

Topics

- Strategic Workforce Plan
- Recruiting Philosophy and Strategy
- Staff Development and Training
- Resident Inspector Succession Planning
- Use of DRS Skills Matrix
- RII Demographics

Strategic Workforce Planning

- Promotes NRC Management Alignment on Human Resources Needs:
 - Enables Recruiting
 - Facilitates Training
 - Increases Efficiency and Effectiveness

Recruiting Philosophy and Strategy

- Geography
- Use of Tailored Vacancy Announcements
- Targeted Recruiting Sources
- Established University Contacts
- Use of Internships and Co-Ops

↓ Joe Shea

Staff Development and Training

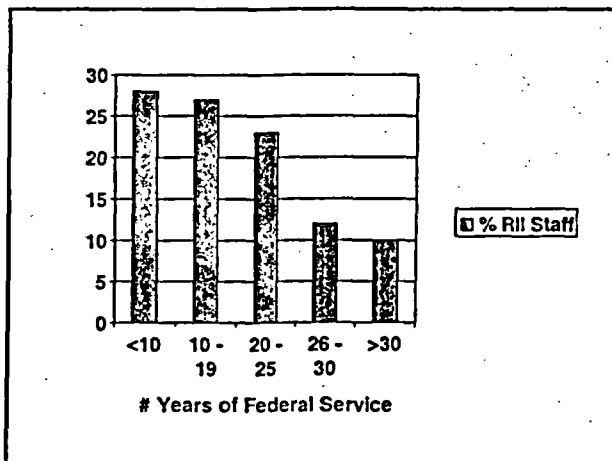
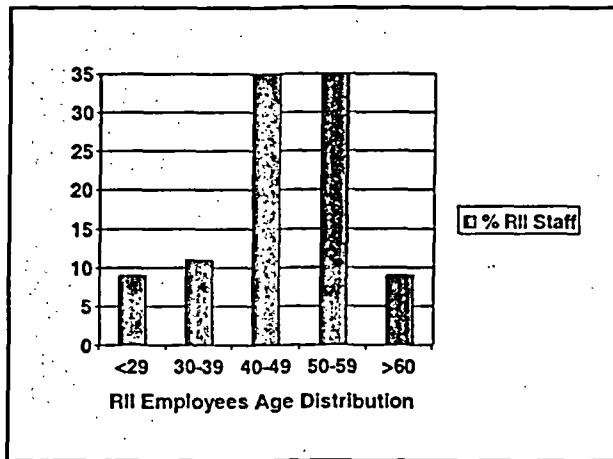
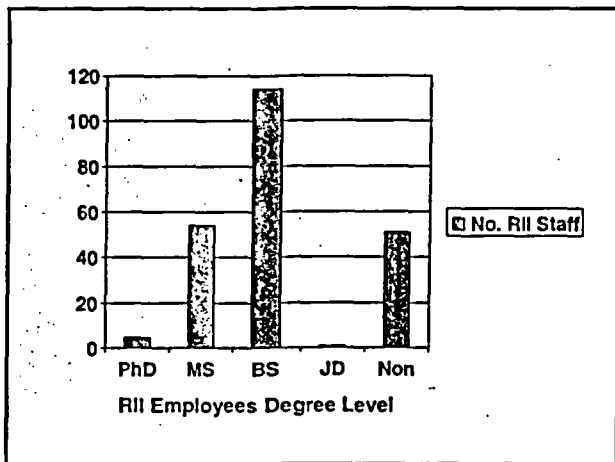
- MC 2515 Certification and Qualification
- Training Classes
- Inspection Observations
- Mentor for New Hires

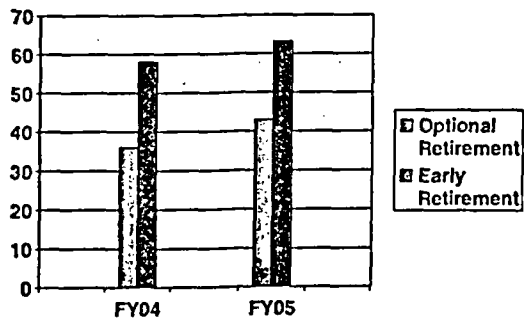
Resident Inspector Succession Planning

- Resident Inspector Staffing Requirements
- - Relocation Policy
- Resident Inspector Development Program
- Development Matrix for Qualified Inspectors

Use of DRS Skills Matrix

- See Human Capital Management Program
- Targets Multiple Skills in 17 Elements
- Identifies Staff Needs, Current Staffing, Projected Losses, Projected Gains, and the Succession Plan





Rll Employee Retirement Eligibility

OCONEE 95002 **INSPECTION**

Bob Schin

Senior Reactor Inspector
Engineering Branch 2
Division of Reactor Safety

PURPOSE

Discuss Recent Inspection for Degraded
Mitigating Systems Cornerstone

BACKGROUND

Inspection performed per IP 95002
at Oconee during 5/23/05 – 6/2/05

Inspection Focus

Provide assurance that for the two White findings the root causes were understood and corrective actions were adequate. Also, independently assess the extent of condition and extent of cause.

Two White Findings

- 1) A third quarter 2003 finding involving inadequate standby shutdown facility (SSF) pressurizer heater capacity.
(NOTE: This finding had been closed by a previous 95002 inspection.)
- 2) A third quarter 2004 finding involving inadequate procedural criteria for manning the SSF during a fire.

SSF Pressurizer Heater Finding

- Finding was licensee identified during testing development on March 7, 2002
- Insufficient capacity of pressurizer heaters powered by the SSF to assure natural circulation cooling
- Pressurizer ambient heat losses of 143 – 178 kW (for Units 1, 2, & 3) greatly exceeded the 70 kW in the original design basis documents
- Inadequate corrective action because licensee had numerous prior opportunities to identify

Manning the SSF During a Fire Finding

- Finding was NRC identified during a triennial fire protection inspection on February 8, 2002
- Procedures did not staff the SSF until after fire damage caused a loss of all steam generator feedwater or loss of all high pressure injection
- Consequently, RCS pressurizer relief valves could lift many times and potentially fail open, rendering the SSF inoperable
- Failure to meet fire protection licensing basis for promptly staffing the SSF during a fire, before fire damages cables

Team Composition

- Lead inspector
- Senior reactor analyst
- Basic qualified inspector

Conduct of inspection

- Bagman trip (lead inspector)
- One onsite week
- One additional week in office

INSPECTION RESULTS

- No findings of significance were identified.
- There were opportunities for improvement in licensee processes for determining root and contributing causes, extent of cause, and corrective actions.
- Corrective actions (completed and planned) were adequate.
- The one open White finding was closed.

**SEQUOYAH WHITE FINDING
ON BINDING OF THE 1A RHR
BREAKER**

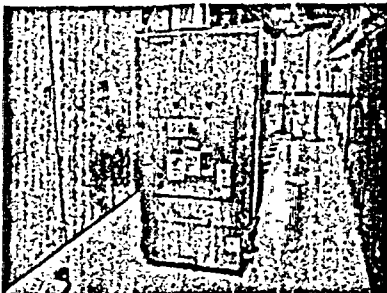
Scott Freeman
SRI (Sequoyah Site)
Reactor Projects Branch 6
Division of Reactor Projects

BACKGROUND AND TIMELINE

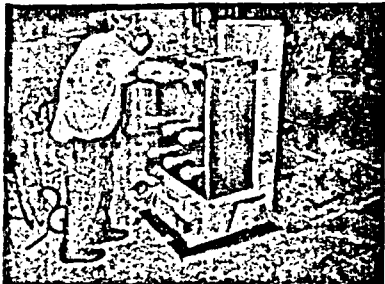
- December 1996 - ABB Services Begins Refurbishing Sequoyah Breakers
- 1997 to 2000 - Many Problems with ABB Workmanship
- September 2000 - Refurbishment Cost for Safety-Related ABB Breaker at \$31000.00
- January 2001 - TVA Decides to Replace Safety Related ABB Breakers with Siemens Breakers
- November 2001 - TVA Begins Installing Siemens Breakers

MOC SWITCH MECHANISM

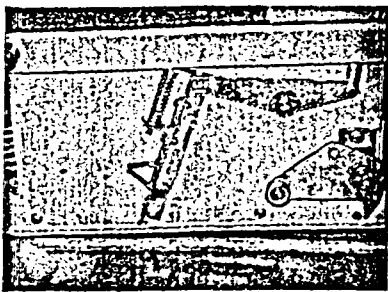
BREAKER OVERVIEW



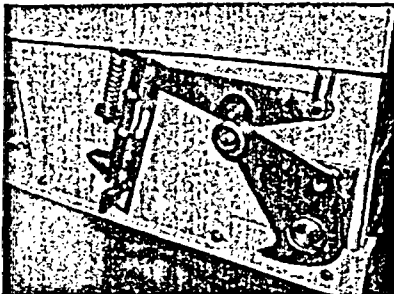
BREAKER OVERVIEW



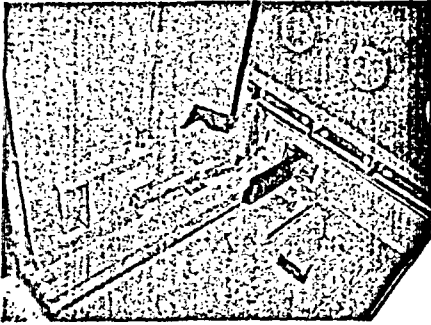
SLIDE BRACKET



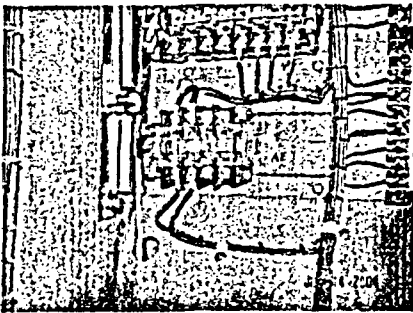
SLIDE BRACKET



BREAKER CUBICLE



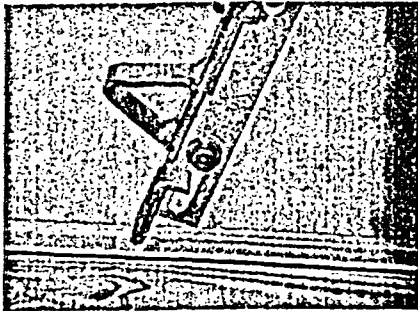
MECHANISM OPERATED CELL (MOC) SWITCH



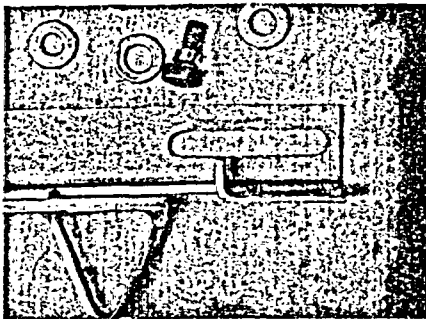
LIST OF BREAKER FAILURES

- January 31, 2002 - Siemens breaker failed to close while racked to the TEST position (Initial checks)
- June 6, 2002 - Siemens breaker for ERCW Pump M-B failed to close while racked to the TEST position (PMT)
- July 31, 2002 - Siemens breaker failed to close while racked to the CONNECT position (PMT)
- February 11, 2004 - Siemens breaker for ERCW Pump P-B failed to close while racked to the CONNECT position (PMT)
- February 18, 2004 - Siemens breaker for Containment Spray Pump 2A failed to close while racked to the CONNECT position (PMT)
- April 9, 2004 - Siemens breaker for ERCW Pump M-B failed to close while racked to the CONNECT position (PMT)
- April 26, 2004 - Siemens breaker for ERCW Pump P-B failed to close while racked to the CONNECT position (PMT)
- July 7, 2004 - RHR Pump 1A failed to start on demand during surveillance testing. (On-demand failure)

SLIDE BRACKET (FAILED BREAKER)



BRADDING (FAILED BREAKER)



TVA ACTIONS AFTER BRADDING DISCOVERED

- Visually Inspected 12 Breakers Designated as Spare and Not Installed in the Plant
- Visually inspected 6 breakers installed in the A train of ECCS, including RHR Pump 1A
- Visually inspected 12 breakers installed in the B train of ECCS
- Vendor had Indicated that a Functional Test would be more Accurate

NRC ACTIONS BEFORE RHR FAILURE

- Performed Maintenance Inspection In Spring 2003
- Performed Operability Evaluation Inspection on Two Breaker Failures (June 2003, July 2004)
- Performed a Second Maintenance Inspection in 2004 (began in Spring but extended when they went a1)
- Performed Three PMT Inspections on Different Siemens Breakers
- Began a PI&R Annual Sample In Spring 2004

NRC ACTIONS AFTER RHR FAILURE

- DRS Inspected the RHR Breaker Failure as Part of PI&R Sample (Raised Questions About Qualification)
- Residents Researched CAP for Previous Occurrences (The same failure occurred in June 2003 During Receipt Inspection)
- Branch Chief and DRS Director Visited SQN for Discussions on Breakers

ROOT CAUSES

- Equipment Problems Were due to Vendor Deficiencies
- Root Cause Was Program Deficiencies In the Design Process
 - TVA Used the Engineering Document Change Process to Perform the Design Change. This is the like-for-like process.
 - TVA Did not Hold the Vendor Accountable for Documentation Showing the Required Qualification and Testing

ISSUE DISPOSITION

- White Finding for Failure to Identify and Correct the Problem With RHR Breaker
- Unit 1 RHR A Train was Inoperable for 14 Days
- Reduced Sump Recirculation for Small or Medium LOCAs
- No Sump Recirculation for Loss of 125 VDC Battery Board 2

CONCLUSIONS

- The Process Worked
- The Process Didn't Work
- New Breaker-in-the-Existing-Cubicle Upgrades Must be Watched Closely for Unforeseen Problems

Fire Protection Issues/ SDP Timeliness

Charlie Payne
Chief, Engineering Branch 2
Division of Reactor Safety

TYPES OF FP FINDINGS

- Hemyc/MT Fire Wraps
- Circuit Analysis/Associated Circuits
- Manual Actions In Lieu of Fire Barriers (subset of circuit analysis)
- RCP Seals/Safe Shutdown
- Other

HEMYC/MT FIRE WRAPS

- Long standing issue
- Affects four Region II plants
- Recent testing has found these wraps do not meet 1-hr or 3-hr fire resistance times
- Draft Generic Letter issued for comment
- Plan – NRR to track issues to closure

CIRCUIT ANALYSIS

- Another set of long standing issues
- Primarily related to associated circuits/spurious equipment operation
- RIS 2004-03, Rev. 1 issued to resolve
- Enforcement discretion 1/1/05-12/31/05
- No risk evaluation required
- Only one finding closed to date
- Plan – assess licensee progress to resolution and close those meeting criteria

MANUAL OPERATOR ACTIONS

- Subset of circuit analysis issues
- Often used to mitigate spurious equipment operation in lieu of cable protection
- Licensees long believed was an acceptable alternative to App. R, III.G.2 requirements
- Extensive use of manual actions is pervasive among all Region II facilities
- Most not evaluated for feasibility or timeliness
- Often have high Human Error Probability (HEP)

RCP SEAL ISSUES

- To date, 5 Region II licensees have been identified with this issue
- Failed to apply Westinghouse guidance on actions to take on extended loss of seal cooling (related to SBO)
- Most allowed restoring seal cooling 60-90 minutes following complete loss
- Risk significant due to lack of ECCS equipment to mitigate in fire scenarios

NFPA 805

- Duke Energy (Oconee, McGuire, Catawba)
- Progress Energy (Harris, Crystal River, Robinson, Brunswick)
- Possibly Dominion (Surry, North Anna)
- Oconee and Harris are pilot plants
- Enforcement discretion during transition (applies to old issues if commit during '05)
- Risk evaluation only to determine less than Red or Severity Level I
- Findings remain open until transition complete

FP SDP TIMELINESS

- Fire protection and SSDPC shared inspection resources up to 10/1/04
- Scheduling of 15 team inspections per year usually precluded assignment of an inspector to resolve open findings
- Inefficient and loss of continuity over time
- Licensee corrected problem or implemented compensatory actions

FP SDP TIMELINESS

- Complicated FP issues can not be quickly resolved with FP SDP (MC 0609, App. F)
- SDP is 24 pages long with another 116 pages of explanation and guidance
- Most RII issues involve RCP seal cooling or safe shutdown capability concerns
- Requires additional site visit to collect information necessary to complete SDP

FP SDP TIMELINESS

- Step 2.8 of App. F is particularly difficult
- Requires excellent knowledge of integrated plant operations (most FP inspectors are electrical engineers)
- 90 day SDP timeliness goal unrealistic for complicated FP issues (RCP seals/SSD)
- Goal requires SDP completed within 2 weeks of report with no errors

FP SDP STATUS

- 31 current open items (7 new this year)
- 17 tied to plants going to NFPA 805
- 4 Hemyc issues (all NFPA 805 licensees)
- 7 circuit analysis issues
- 7 pending SDP - 3 potentially GTG (Turkey Pt)
- 4 pending additional inspection/information
- 8 resolved; pending closure in report
- 1 reg. conf. complete; pending final significance determination

CORRECTIVE ACTIONS

- Obtained assistance from DRP and NRR to help work off open items
- Obtained additional contractor support for FY06
- Using two separate FP inspection teams
- Hiring 2 FP and 2 operations inspectors
- Restricted support of other inspections

SDP TIMELINESS

BACK UP SLIDES

FP STAFFING OBLIGATIONS

- Six triennial team inspections/year
- 6-8 NFPA 805 observation visits/year for next two years (pilot program)
- Browns Ferry U1 restart inspections (electrical and fire protection)
- DFFI fire protection inspections each year (1 FTE)

NOMINAL TIME LINE

- Phase 1/2 SDP: 2 weeks (No Phase 3)
- SRA review: 1 week
- Pre-SERP: 1 week
- SERP: 1 week
- Choice letter: 1 week

NOMINAL TIME LINE

- Schedule Regulatory Conf.: 4 weeks
- Final significance determination: 1 week
- Re-SERP: 1 week
- Final significance letter: 1 week
- Total: 13 weeks
