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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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574th MEETING

+ + + + +

WEDNESDAY,

JULY 14, 2010

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ROCKVILLE, MARYLAND

+ + + + +

The Advisory Committee met at the Nuclear
Regulatory Commission, Two White Flint North,
Room T2B1, 11545 Rockville Pike, Rockville, Maryland,
at 8:30 a.m., Said Abdel-Khalik, Chairman, presiding.

COMMITTEE MEMBERS PRESENT:

SAID ABDEL-KHALIK, Chairman

J. SAM ARMIJO, Vice Chairman

JOHN W. STETKAR, Member-at-Large

SANJOY BANERJEE, Member

DENNIS C. BLEY, Member

MARIO V. BONACA, Member

CHARLES H. BROWN, Member

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1 COMMITTEE MEMBERS PRESENT: (cont'd)

2 MICHAEL L. CORRADINI, Member

3 DANA A. POWERS, Member

4 HAROLD B. RAY, Member

5 MICHAEL T. RYAN, Member

6 WILLIAM J. SHACK, Member

7 JOHN D. SIEBER, Member

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

(8:29 a.m.)

CHAIRMAN ABDEL-KHALIK: The meeting will now come to order.

This is the first day of the 574th meeting of the Advisory Committee on Reactor Safeguards. During today's meeting, the Committee will consider the following: 1) Safety Evaluation Report with open items associated with the South Texas Project combined license application; 2) Draft Final Regulatory Guide 3.74, "Guidance for Fuel Cycle Facility Change Processes"; 3) meeting with representatives of the Nuclear Energy Institute; and 4) preparation of ACRS reports.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act.

Ms. Maitri Banerjee is the Designated Federal Official for the initial portion of the meeting.

We have received no written comments from members of the public regarding today's session. A member of the public, Mr. Marty Malsch, will address the Committee regarding the closure of DAC/ITAAC items for new reactors. Mr. Malsch's presentation is

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1 scheduled for 3:15 p.m. this afternoon.

2 There will be a phone bridge line
3 throughout today's meeting. To preclude interruption
4 of the meeting, the phone will be placed in a listen-
5 in mode during the presentations and Committee
6 discussions.

7 A transcript of portions of the meeting is
8 being kept, and it is requested that the speakers use
9 one of the microphones, identify themselves, and speak
10 with sufficient clarity and volume, so that they can
11 be readily heard.

12 I will begin with some items of current
13 interest. We have three new student summer interns.
14 Jonah Fitz is pursuing a bachelor's degree in criminal
15 justice at Penn State. He will be working under Jenny
16 Gallo and Alesha Bellinger to create an index
17 compilation of ACRS reports using the taxonomy
18 established for ACRS knowledge management activities.
19 He will also be compiling the ACRS letter reports for
20 the latest volume of NUREG-1125.

21 Bradford Olson is pursuing a bachelor's
22 degree in mechanical engineering at the University of
23 Massachusetts, Lowell. He will be working with
24 several ACRS senior engineers, including senior
25 technical advisor Dr. Hossein Nourbakhsh. Currently,

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1 Brad is helping Dr. Nourbakhsh in his effort to
2 provide a historical perspective on past ACRS review
3 of design certifications.

4 And last but not least, Jordan Smith has
5 an associate's degree in liberal arts. He will
6 continue his education at UMass Dartmouth, pursuing a
7 bachelor's degree in English. This summer Jordan will
8 be working with Jonah Fitz under Jenny Gallo and
9 Alesha Bellinger to create an index compilation of
10 ACRS reports.

11 Welcome aboard.

12 (Applause.)

13 At this time we will proceed with the
14 first item on the agenda, Safety Evaluation Report
15 with open items associated with the South Texas
16 Project combined license application.

17 On September 20, 2007, the South Texas
18 Project Nuclear Operating Company submitted a combined
19 license application to build and operate two units of
20 the certified ABWR design at the existing site of STP
21 Units 1 and 2. On November 5, 2009, the ACRS was
22 briefed by STP and the staff on significant technical
23 and licensing issues related to the COLA,
24 qualification of Toshiba, the alternate EPC vendor
25 selected by STP, and scope and schedule of the staff's

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COLA review.

During the last four months, our ABWR Subcommittee has held five meetings to review the STP application and the staff's SER with open items. So far, we have reviewed 16 chapters of the SER with open items. The remaining three chapters, Number 2, 3, and 9, are still being reviewed by the staff.

During today's meeting, the applicant is expected to present the significant departures from the certified ABWR design and site-specific COL information in their application. The staff is expected to present the significant review items, including the remaining open items and their proposed resolution.

I expect today's discussion to be issue-centered, related to the technical issues in the application and the SER.

The ABWR Subcommittee review generated numerous action items, some of which have been resolved. Since we only have limited time today to cover a very large scope, we may not be able to address any proposed resolution to the remaining ACRS action items.

Consistent with the Federal Register notice of June 28, 2010, parts of this meeting may

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1 need to be closed to the public to protect information
2 proprietary to Toshiba or other parties. I am asking
3 the NRC staff and the applicant to identify the need
4 for closing the meeting before we enter into such
5 discussion, and to verify that only people with the
6 required clearance and need to know are present.

7 The telephone bridge line will not
8 transmit any signal from this end during the closed
9 portions of the meeting.

10 We will now proceed with the meeting, and
11 I call upon Mr. Mark Tonacci of NRO to begin the
12 presentation.

13 MR. TONACCI: Good morning, Mr. Chairman,
14 full Committee. Thank you for the opportunity to
15 present to you this morning the staff's summary of the
16 application, as well as for providing us an interim
17 letter later on.

18 The staff has pulled together a summary of
19 the application -- the SER that was presented over the
20 past four months, five months, and it is focused on
21 the key topics and the open items. This morning the
22 staff's presentation will be led by George Wunder, the
23 lead project manager sitting to my right, and also
24 project managers Tekia Govan, Adrian Muniz, Stacy
25 Joseph, Raj Anand, and Rocky Foster.

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1 We look forward to an engaging discussion
2 this morning. Thank you for your time. And I will
3 turn it back over to you, Mr. Chairman.

4 CHAIRMAN ABDEL-KHALIK: Thank you.

5 At this time, we will begin with the
6 applicant's presentation, and Mr. Head will lead the
7 presentation.

8 MR. HEAD: Thank you, and thank you again
9 for this opportunity to brief the Advisory Committee
10 on Reactor Safeguards.

11 Today our agenda -- we will do a quick
12 overview, and we are going to go and do chapter
13 summaries in order, and present what we believe is the
14 interesting information that we have already covered
15 in those chapters, and then obviously have time for
16 conclusion discussion.

17 Attendees today is myself, Evan Heacock,
18 Design Engineering Manager, Coley Chappell, and
19 Caroline Schlaseman has joined us today -- for today's
20 briefing.

21 You will notice that we really have
22 created very little that is new in this presentation.

23 You have seen this picture three or four times
24 already, and it brings out the major facets or aspects
25 of the South Texas Project, and that is basically our

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1 main cooling reservoir that is in fact sized for four
2 units.

3 Other interesting aspects is, you know, we
4 have low population density in existing state, county,
5 and site emergency plans. And while it's on the
6 bottom of the list, certainly something that is most
7 important to us is the strong community support that
8 we have, that is supporting not only 1 and 2 but the
9 endeavor we are on with respect to 3 and 4.

10 You went over the history. Just to --
11 I'll, you know, reiterate that. September '07 was --
12 we submitted our application. The COLA Rev 2,
13 September '08, that is an important date, because that
14 is when we made the transition to Toshiba within the
15 COLA, and basically started the review at that time.

16 And then, as you noted, between March and
17 June, we have gone over 16 of the 19 chapters that
18 have been -- draft SERs that have been created for.

19 With respect to Chapter 1, we are the
20 reference COLA. It incorporates Part 2. You know,
21 without repeating the DCD information, it is basically
22 identical to the ABWR certified design, with a limited
23 number of Tier 1 departures. Some of what we will
24 talk about today are Tier 2 departures, and we will
25 cover that when we get there.

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1 There's two types of information. There
2 is -- in the COLA. There is departures from the DCD,
3 and we have -- a lot of them -- most of them are
4 applicable to future COLAs, but some obviously, given
5 our location and site-specific characteristics, they
6 are only applicable to 3 and 4. And then, there is a
7 large number of supplements that we have covered as we
8 have done the briefing on these last 16 chapters.

9 The Tier 1 departures, here is a list of
10 them. And, in essence, all except the last departure
11 we have covered or addressed or it is discussed to
12 some extent as part of the briefings that we've had
13 previously, and we will cover a limited number of
14 these in today's discussion.

15 A major part of our discussion on
16 Chapter 1 was the process we went through qualifying
17 the alternate vendor, qualifying Toshiba to provide
18 the design for STP. And as you see there, the ABWR
19 was developed in Japan under the cooperation of
20 Toshiba, Hitachi, and GE, and supported by Japanese
21 utilities.

22 They have designed the ABWR, and as a
23 result they have -- they have the documents necessary
24 to -- for the design process and the actual
25 construction that took place in Japan.

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1 Before we made that decision, obviously,
2 it was incumbent upon us to do a due diligence, and we
3 performed that due diligence and were impressed with
4 Toshiba's capabilities and the information that they
5 had. And we have confidence in their ability to
6 provide a certified design for STP, and, like I say,
7 in intervening years, since we have made the decision,
8 it has proven to have been a good decision, and we are
9 very happy where we are with respect to that change
10 that we made.

11 I will -- if there are any questions,
12 please feel free to interrupt, or we will just --

13 CHAIRMAN ABDEL-KHALIK: Don't you worry
14 about that.

15 (Laughter.)

16 MR. HEAD: I guess I also know we are
17 under a little bit of a time restraint, so --

18 CHAIRMAN ABDEL-KHALIK: Okay.

19 MR. HEAD: Chapter 4, interesting aspect
20 there is we are not going to depart from the certified
21 fuel design, but we did brief the ACRS on our plans to
22 submit an amendment post-COL to adopt a different fuel
23 design, and then we indicated that to support that we
24 are -- a number of topical are being generated now,
25 and have been submitted to the NRC for review.

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1 And those topical will then be used to
2 support the amendment that would come after COL for
3 the fuel that we expect to use at the South Texas
4 Project. And I believe the ACRS has expressed an
5 interest in reviewing those topical. And we
6 understand that, and we will obviously support that
7 review.

8 Chapter 5, interesting topic there was our
9 decision to change from the -- you know, the Terry
10 turbine to the, you know, Weir pump or the pump and
11 turbine, where they are in the same casing. You know,
12 we -- it is something that South Texas Project has
13 been looking at for a number of years, and this
14 provided us an opportunity to go forward with that
15 decision.

16 So we provided a briefing on that, and we
17 expected to, you know, say it has been reviewed by the
18 staff. It is -- like I said, we believe it will be an
19 enhancement ultimately to the design. As we noted,
20 though, in some of our discussions, we are not taking
21 any credit for it yet from a PRA perspective in terms
22 of enhanced, you know, risk or anything like that, but
23 we expect to see that as experience is gained over the
24 upcoming years.

25 With respect to Chapter 6, that was one of

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1 our longer discussions that we had with ACRS, because
2 of some of the challenges that were there. We could
3 not incorporate by reference the containment analysis
4 that had been done, because early on in the project
5 some errors were identified in the analysis. Those
6 errors were, you know, associated with the feedwater
7 flow assumptions, event loss coefficients, and decay
8 heat.

9 As a result, Westinghouse embarked upon an
10 analysis using, you know, their codes. We performed
11 the analysis and basically benchmarked it against the
12 original and got very good results. We then
13 incorporated or then addressed the errors and
14 reperformed the analysis, and the results are all
15 still acceptable, and that is now forming the design
16 and licensing basis for South Texas Project.

17 A technical report was submitted to the
18 staff and has been reviewed, and that is now the
19 licensing basis.

20 Because of some changes that came with
21 that, however, we also had to redo the pool swell
22 analysis, and we briefed the ACRS on the details that
23 went behind that. And that pool swell analysis has
24 resulted in changes to basically elevations, and that
25 -- but those changes now, in terms of pool swell

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1 height, will be incorporated into the design as we
2 move forward.

3 And that is -- we feel like that has been
4 a significant effort, and we are very, very pleased
5 with the outcome of that, because, like I say, we now
6 have in hand the design and licensing basis that is
7 really more state of the art with respect to the
8 analytical techniques.

9 Another big part of the discussion on
10 Chapter 6 was the strainer discussion. STP committed
11 to adopt Reg Guide 1.82, Rev 3, and it had, you know,
12 obviously some expectations along with -- including
13 chemical and downstream effects.

14 I will just do a quick discussion here
15 that with respect to the second bullet that, you know,
16 early on, given the plant design, where we are with,
17 you know, the paper plant and all of us being
18 associated with a plant that went through the sump
19 issue, it was our desire to -- you know, to make this
20 issue as insignificant as possible. And we were at
21 that point in time where we could make those
22 decisions.

23 And so we made the decision to remove all
24 fibrous insulation and aluminum from the design. So
25 it is -- you know, we feel like given the experience

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1 we have been through that that was an appropriate
2 thing to -- you know, basically, Steve Thomas was one
3 of our engineering managers that briefed you, you
4 know, get the containment in a condition where we --
5 in fact, we felt like we don't need the strainers.

6 Obviously, that would be quite a stretch
7 from a licensing perspective, but that in essence his
8 -- his design concept is that we ought to be able to
9 manage our work at this point, manage our post-outage
10 activities and such where the strainers are really,
11 you know -- really represent, you know, defense-in-
12 depth. And that is where we believe we are with that.

13 There obviously -- with downstream effects
14 there are some fuel issues that we have to address,
15 and we are going to have some more discussions with
16 ACRS on those, and we look forward to those
17 discussions.

18 And so those are the major two topics that
19 we discuss in Chapter 6.

20 MEMBER BANERJEE: When is the last point
21 to be discussed?

22 MR. HEAD: We have to work out that date,
23 I believe, with -- between you and the staff. We are
24 discussing it with the staff in terms of we are having
25 some -- a fiber discussion in fact today in one of

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1 our --

2 MEMBER BANERJEE: There I think the issue
3 really is the condition. As far as we discussed it,
4 it is pretty clear. It is only how much fiber you
5 have to consider --

6 MR. HEAD: Right.

7 MEMBER BANERJEE: -- that you are
8 concerned about.

9 MR. HEAD: Yes. And we -- looking back on
10 the discussions that we had at the last meeting, there
11 was probably a lack of clarity in some of what was
12 presented. And we are -- you know, that is one of the
13 things that we are going to be working on is making
14 sure that parameters are clear to everyone, and then
15 our basis for what we are selecting to do is -- will
16 be clear in those discussions. So we look forward to
17 that. And we understand it is an important topic, and
18 we look forward to that future discussion.

19 MR. TONACCI: This is Mark Tonacci. To
20 answer your question, we expect to bring that chapter
21 back, likely in the early part of the first quarter of
22 next year.

23 MEMBER SHACK: As I recall, you are also
24 committed to an epoxy topcoat on the containment?
25 Does the coating change, or is that correct?

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1 MR. HEAD: Did you hear that, Caroline?
2 I'm going to ask Caroline to --

3 MS. SCHLASEMAN: Yes. At our last
4 meeting, we had discussed that we have inorganic sink
5 primer with epoxy topcoat. But I believe that we had
6 concluded that we did not need to take a departure for
7 that, because the way that our DCD is written it is
8 not that specific about whether or not you could also
9 have an inorganic sink primer.

10 And in the SER right now, the SER still
11 does need to be revised to clearly state that it is
12 not just epoxy, that it has an inorganic sink primer,
13 so the SER does need a change to clarify that, that it
14 is both inorganic sink primer with epoxy topcoat, but
15 we did not need a DCD departure because of the -- it's
16 not that precise in the DCD.

17 Does that answer your question?

18 MEMBER SHACK: Yes. That was Caroline
19 Schlaseman.

20 MS. SCHLASEMAN: I'm sorry. This is --

21 MEMBER SHACK: That's okay.

22 MS. SCHLASEMAN: -- Caroline Schlaseman.

23 MEMBER BANERJEE: So we don't have to
24 worry about any of this getting into the strainers.

25 (Laughter.)

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1 CHAIRMAN ABDEL-KHALIK: Please continue.

2 MR. HEAD: Okay. And it sounds like we
3 have --

4 MEMBER POWERS: I mean, is there a reason
5 to go to the epoxy topcoat?

6 MR. HEAD: Caroline, can you -- did you
7 hear the question? Is there a reason to go to the
8 epoxy topcoat?

9 MS. SCHLASEMAN: The reason that we have
10 inorganic sink primer with epoxy topcoat, was that --
11 that was the question? The qualified coatings that
12 are available to the project, the engineering staff
13 concluded that the only way to get a qualified coating
14 that can be qualified for the design basis accident
15 and the jet loads and containment is to have -- there
16 apparently are two manufacturers who have a coating
17 system with inorganic sink primer and epoxy topcoat.
18 Both systems have that. And epoxy alone was not going
19 to satisfy the qualified coatings requirements.

20 MEMBER POWERS: There's a good chance it
21 won't, but I understand why you're doing it.

22 MEMBER BANERJEE: You want to kill this
23 problem.

24 MEMBER POWERS: Well, "rotsa ruck."

25 (Laughter.)

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1 CHAIRMAN ABDEL-KHALIK: Please continue.

2 MR. HEAD: That is certainly our goal.

3 MEMBER POWERS: I understand. I mean, it
4 -- and the zinc primary epoxy topcoat is a fine
5 system. It's just not --

6 MR. HEAD: Safe.

7 MEMBER POWERS: You cannot say that it's
8 going to last 1,000 years.

9 MR. HEAD: If we've burdened the plant
10 staff with -- 10 years later with dealing with
11 strainer issues --

12 MEMBER POWERS: Yes.

13 MR. HEAD: -- then we feel like we
14 certainly have not done our job at this point. So we
15 are attempting to do that.

16 MEMBER POWERS: I mean, that -- it's a
17 fine coating system.

18 MR. HEAD: Any other questions on
19 Chapter 6? Like I say, that was a significant
20 discussion that we had.

21 And with respect to Chapter 7, the STP 3
22 COLA incorporates by reference the functionality and
23 logic of the ABWR DCD I&C system and components. That
24 was an important decision that we made, and, like I
25 say, it is -- it is important to all of the work that

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1 follows.

2 Some departures were made to address
3 advancements in technology, which we believe was given
4 the age or the timeframe of the original licensing of
5 the certified design -- was the original intent of the
6 way Chapter 7 was built, and, in fact, we have done
7 that.

8 Just a couple examples here. We updated
9 the I&C architecture. We replaced the obsolete
10 multiplexer communication technology with current
11 technology, and so we availed ourselves of that
12 opportunity within the processes that are in
13 Chapter 7.

14 And then, we took the opportunity to
15 change some of the descriptions that are in Chapter 7
16 to more accurately portray the way we believe the
17 processes work.

18 We also incorporated, by design, the
19 defense-in-depth that the ABWR DCD contained with
20 respect to the diverse features that have been
21 retained, including the manual reactor scram, the high
22 pressure core flutter. Train C is a diverse manual,
23 is hardwired, and diverse display of specific
24 parameters, process parameters, are available in the
25 control room.

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1 It says it is diverse, hardwired, and
2 controls go directly to control components. So we
3 believe this aspect is an important feature, and, like
4 I say, it is one that, as noted, we have incorporated
5 by reference and expect to contain -- or continue
6 with.

7 Any questions on Chapter 7?

8 (No response.)

9 Okay. Chapter 8, the major departure
10 there was with respect to the medium voltage
11 electrical system. The power generation bus we went
12 from a -- to the -- basically, it was to incorporate
13 changes to the plant and what we -- more or less the
14 normal expectation for typical U.S., you know, plants.

15 The plant investment protection bus and
16 Class 1E safety buses go from -- go to 4160. And
17 there is also the power generation bus, which
18 increased from 6.9 to 13.8.

19 Along with all of that was we have --
20 based on the components that we have selected, we
21 concluded that we needed to increase the capacity of
22 the emergency diesel generators, and they went from
23 5,000 kilowatts to 7,200 kilowatts. And along the
24 same lines, we have increased the capacity of the
25 combustion turbine generator from nine megawatts to 20

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1 megawatts.

2 MEMBER SIEBER: Why did you reduce the
3 voltage?

4 MR. HEACOCK: It is more along the lines
5 of what is standard in the U.S. practice. That's the
6 main reason for going to the 4160 on the safety buses.

7 MEMBER SIEBER: Right. That's common in
8 most plants.

9 MR. HEACOCK: Yes.

10 MEMBER SIEBER: Okay.

11 MR. HEAD: And that was Evans Heacock --
12 I'm sorry -- one of our engineering managers.

13 MEMBER STETKAR: Scott?

14 MEMBER SIEBER: That was just a
15 superficial choice on your part.

16 MR. HEAD: Right.

17 MEMBER SIEBER: As far as availability of
18 equipment. There's qualified components that need a
19 voltage ring.

20 MR. HEAD: Correct.

21 MEMBER SIEBER: Okay.

22 MEMBER STETKAR: Scott?

23 MR. HEAD: Yes, sir.

24 MEMBER STETKAR: For the benefit of the
25 other members who aren't here, the combustion turbine

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1 generator is your alternate A/C station blackout
2 source, right? And it normally picks up plant
3 investment protection buses automatically, right?

4 MR. HEACOCK: Correct.

5 MEMBER STETKAR: And the -- to align it to
6 a safety bus, the operators have to shed loads, the
7 non-safety plant investment loads, and manually
8 reconfigure the power supply to get power down to the
9 -- at least one of the safety buses, is that right?

10 MR. HEACOCK: Yes. What they'll end up
11 doing is tripping the plant investment protection bus,
12 and then, like you said, realigning and closing a
13 couple breakers to reenergize the pre-chosen safety
14 bus.

15 MEMBER STETKAR: Do you take credit for
16 the operators doing all of that within 10 minutes, so
17 that you can avoid doing a formal station blackout
18 coping analysis?

19 MR. HEACOCK: Coping analysis. This is
20 correct, and that's -- what we're still working
21 through is making sure of the timelines and make sure
22 the operations --

23 MEMBER STETKAR: That's still a work in
24 progress?

25 MR. HEACOCK: Yes, sir.

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1 MEMBER STETKAR: Is it -- that's sort of
2 the way we left it --

3 MR. HEACOCK: Yes.

4 MEMBER STETKAR: -- at the end of the
5 Subcommittee meeting. Okay.

6 MEMBER SIEBER: This is not a safety
7 question, but by any chance do you have a DC backup
8 for the turbine oil bearing lubricating pumps?

9 MR. HEACOCK: I have not chosen a
10 manufacturer yet. My intent would be -- belief would
11 be that they would. So just --

12 MEMBER SIEBER: You haven't decided yet,
13 then.

14 MR. HEACOCK: Yes, we haven't gone out for
15 our total package deal.

16 MEMBER SIEBER: Your insurance company
17 would probably like you to.

18 MR. HEACOCK: Yes, I don't doubt that they
19 will require it. Yes.

20 MR. HEAD: Any other questions on
21 Chapter 8?

22 (No response.)

23 Chapter 10, turbine generator main steam
24 and steam and power conversion. There were a total of
25 15 Tier 2 departures involving going to a Toshiba

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1 turbine and addressing reliability, availability, and
2 efficiency, and we have discussed a number of those.
3 And then, there was an added site-specific ITAAC for
4 the turbine trip diversity and response to an RAI.

5 We are going to -- there is an open item
6 that we have with the staff regarding material
7 selection, I mean, with the ACRS, and then we will be
8 bringing that back at a future date. I would suspect
9 September/October timeframe. One of the future
10 chapters that we discuss will --

11 CHAIRMAN ABDEL-KHALIK: How about that
12 turbine missile analysis?

13 MR. CHAPPELL: We will discuss that in
14 Chapter 3 is the current idea. That was a --

15 CHAIRMAN ABDEL-KHALIK: And the timing for
16 submittal of that analysis is?

17 MR. CHAPPELL: We had gone over that
18 commitment. That's the commitment in Chapter 3.

19 MR. HEAD: In the last meeting we had a
20 discussion on the turbine missile analysis, and I
21 thought we indicated that we needed to reflect the
22 appropriate probabilities for the configuration. And
23 is there also an open item that -- on the turbine
24 missiles?

25 MR. CHAPPELL: We have an action item I

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1 think that we're tracking to further discuss this --
2 the missile analysis for the turbine in Chapter 3.

3 CHAIRMAN ABDEL-KHALIK: But that would be
4 a part of -- like you say, a part of Chapter 3.

5 MR. CHAPPELL: Part of the Chapter 3
6 discussion.

7 CHAIRMAN ABDEL-KHALIK: Okay.

8 VICE CHAIRMAN ARMIJO: I think there were
9 some questions on the materials in the -- and the
10 materials properties related to the bottom block --

11 MR. HEAD: Yes.

12 VICE CHAIRMAN ARMIJO: -- roller.

13 MR. HEAD: Yes, I had referred to that.
14 That is a followup item we have to discuss that in
15 more detail, and how we will do that --

16 MEMBER SHACK: That reflects to the
17 missile analysis also.

18 MR. HEAD: Yes, right.

19 VICE CHAIRMAN ARMIJO: All right. Okay.

20 MEMBER STETKAR: You didn't mention the
21 fact that you added a whole set of condensate booster
22 pumps. I mean, you are -- this talks about turbine
23 generator main steam, and you did quite a bit on the
24 condensate and feedwater systems design. Can you tell
25 the rest of the Committee the changes you made there?

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1 MR. HEACOCK: For the main part of the
2 design, we initially had a three-pump system. We
3 actually added a -- when they were basically 50
4 percent, we ended up changing the design to go to a 33
5 percent pump capability for our feedwater, our
6 condensates, and condensate booster pumps, basically,
7 having the ability to handle a transient better to go
8 to a four-pump design with 33 percent, so if you trip
9 one and then the recovery of the plant, stability is a
10 little better, and hence performance for that
11 standpoint.

12 So I guess mainly that's the biggest part
13 of -- for why we change to go to the -- from a three
14 to a four.

15 MEMBER STETKAR: Well, and added booster
16 pumps that the original certified design didn't --

17 MR. HEACOCK: Well, and that's probably --
18 I'm trying to remember what the original was.

19 MEMBER STETKAR: It's a big set of
20 equipment --

21 MR. HEACOCK: Well, we had --

22 MEMBER STETKAR: -- if you run a
23 powerplant --

24 MR. HEACOCK: Yes, I'm just trying to --
25 off the top of my head --

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1 MEMBER STETKAR: -- you notice them.

2 MR. HEACOCK: Yes. And I was trying to
3 think if they called them something different. That's
4 why I'm being a little skeptical. I just can't
5 remember what the DCD said.

6 MR. CHAPPELL: The certified design had
7 condensate pumps.

8 MEMBER STETKAR: Had condensate pumps and
9 feedwater pumps.

10 MR. CHAPPELL: They raised it up to the
11 suction pressure of the feedwater system. The change
12 broke that condensate pump down into two-stage so that
13 it would be able to provide a lower pressure at the
14 polisher, and it would be more efficient and provide
15 more redundancy for each of those stages. So there
16 are four condensate pumps, four condensate booster
17 pumps, and they --

18 MEMBER STETKAR: I'm just surprised not to
19 see it as a bullet on here, because from --

20 MR. CHAPPELL: It's --

21 MEMBER STETKAR: -- I recognize you
22 changed the turbine out, but there's quite a bit over
23 there on the feedwater supply that got moved around
24 and things.

25 MEMBER SIEBER: During normal operation at

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1 full power, I presume you would only run three of the
2 four pumps.

3 MR. CHAPPELL: Correct.

4 MEMBER SIEBER: And the other would be --

5 MR. CHAPPELL: Standby.

6 MEMBER SIEBER: -- standby, ready to
7 perform if necessary. Okay.

8 MR. HEAD: Our intent was to meet the
9 schedule, and we felt like questions would be raised
10 as necessary to --

11 MEMBER STETKAR: You are still doing well.

12 MR. HEAD: So it was not on there for a
13 reason. It was -- Chapter 11, this was -- there is no
14 fundamental new equipment or processes. We are going
15 to use the current technology with modular components
16 with reduced complexity. And this reflects in essence
17 our opportunity, after 20 years of running STP 1 and
18 2, of having a really good idea of what we wanted in a
19 rad waste system.

20 And so we have -- in essence, we have gone
21 to -- for the liquid and solid, we've gone to more the
22 modular concept, and we've gotten rid of some of the
23 high dose equipment that in fact we never even used on
24 Unit 1. So this was, you know, we believe an overall
25 opportunity to enhance the -- you know, the rad waste

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1 system based on our experience.

2 And on the gaseous rad waste, it is going
3 to use a design that has more operational experience.

4 So we are -- we were intimately involved in the
5 decisions and the selections of the rad waste system
6 that we expect to use on 3 and 4, because of our
7 experiences.

8 MEMBER SIEBER: Now, are your changes
9 based on your Unit 1 and 2 experience?

10 MR. HEAD: Yes, sir.

11 MEMBER SIEBER: And the waste streams, in
12 my opinion, from a BWR are different in quantity
13 from --

14 MR. HEAD: Yes, sir.

15 MEMBER SIEBER: -- a PWR.

16 MR. HEAD: Yes. We recognize --

17 MEMBER SIEBER: Have you taken that into
18 consideration and sized equipment to accommodate that?

19 MR. HEAD: Yes, sir, we believe we have.
20 And I agree, all our experience is on -- with 1 and 2.

21 But we also had other, you know, BWR benchmarking
22 available to us, so it was not just a 1 and 2 alone
23 decision. We had a lot of industry experience in the
24 intervening years with modular and other aspects that
25 we feel like are important.

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1 MEMBER BANERJEE: So is STP associated
2 with NRG, right?

3 MR. HEAD: Yes, sir.

4 MEMBER BANERJEE: Which owns some -- and
5 NRG does own some PWRs.

6 MR. HEAD: Yes, sir. They own Units 1 and
7 2 from which, you know, we are -- we are in essence
8 all --

9 MEMBER BANERJEE: No, no. Yes.

10 MR. HEACOCK: BWRs.

11 MR. HEAD: Yes, PWRs, right. This
12 obviously is a BWR.

13 MEMBER BANERJEE: Right. But NRG owns
14 some PWRs, don't they?

15 MR. HEACOCK: South Texas. Part of --
16 part ownership of Units 1 and 2. PWR, but no BWRs.

17 MEMBER BANERJEE: No BWRs.

18 MR. HEACOCK: No BWRs.

19 MR. CHAPPELL: To directly answer that,
20 the first and the third bullets, the STP experience is
21 more applicable there, and processing a liquid and
22 solid. The gaseous waste -- the off-gas train
23 changeout -- if you look at what was certified in the
24 DCD, and what the departure is, the departure is a
25 much more typical BWR system, lots of operational

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1 experience. It doesn't have some of the -- what I
2 would say more conceptual components that are not --
3 that don't have the operating experience.

4 MEMBER SIEBER: Well, off-gas is the
5 principal departure between the two reactor types.

6 MR. CHAPPELL: Yes, sir.

7 MEMBER SIEBER: You know, a PWR -- 99
8 percent of the time carry ejector vents which are --
9 have no activity at all. Okay. Thank you.

10 MR. HEAD: Did we answer your question on
11 NRG?

12 MEMBER BANERJEE: I'm thinking it out.

13 MR. HEAD: Okay. Any other questions on
14 Chapter 11?

15 (No response.)

16 All right. Chapter 12, radiation
17 protection. We incorporated the industry template,
18 NEI-07-03, for the radiation program. And we believe
19 we're in compliance with 10 CFR 21.1406. The design
20 and program operational improvements to ensure worker
21 dose is ALARA, and, you know, obviously, even though
22 the radiation environments are different for a BWR, we
23 also still have 20 years of a health physics
24 organization that is going to transfer over and bring
25 that experience with them.

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1 So even though in the environment the
2 technology is different, it still -- it is, in my
3 mind, comforting to already have all of that
4 background, experience, and the infrastructure in
5 place.

6 All piping containing contaminated fluids
7 are in tunnels. And, like I say, we are incorporating
8 the industry template for life-cycle minimization of
9 contamination.

10 Any questions on Chapter 12?

11 (No response.)

12 Chapter 14 -- excuse me, 13, this was a
13 recent briefing we had, and I guess the high points
14 are -- is the emergency plan. It's a modified version
15 or we are modifying the existing 1 and 2 plan to
16 incorporate all four units. You know, there is still
17 work to be done to make it explicitly applicable to
18 the ABWR design.

19 But we are in a very good position there
20 with respect to, you know, the existing arrangements
21 with the state and the county, and, like I say, we are
22 just -- this has been I think a success for us in
23 terms of getting to where we are with that.

24 We briefed the Subcommittee on our
25 training plans, and all of the -- what we have

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1 available to us. You know, one of the I guess, you
2 know, aspects of our -- of the ABWR is that they are
3 in operation, and they do have a training program in
4 place. Although it is somewhat different, it is still
5 quite functional, and it is a place for us to send
6 people.

7 I know Coley has been to training over
8 there, and, Evans, I don't know if you've been or not,
9 but certainly will be. But it is really -- it is a
10 great opportunity for us to -- hands-on experience and
11 going over there and visiting those training
12 facilities and working with the people over there,
13 them coming over here and training us and being
14 involved as we go through getting ready the simulator,
15 and ultimately getting ready for training the staff to
16 support the operations of the plant.

17 On there are some of the milestones.
18 2011, INPO initial accreditation is expected; 2012,
19 operator training classes are going to start. And the
20 simulator will be -- we expect to be ready for
21 training in 2013.

22 MR. CHAPPELL: One of the interesting
23 things on this slide, perhaps back to Dr. Banerjee's
24 question is, not just NRG but other -- there are
25 others involved in this project, and with Toshiba and

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1 Toku Electric Power, there is a tremendous amount of
2 BWR experience. And we are bringing that to bear in
3 operations training and other areas of our plant.

4 MR. HEAD: Chapter 14, we discussed the
5 initial test program, which is, you know, a pretty
6 standard program. It looks, you know, very similar
7 to, you know, what plants have gone through, and we
8 have described our experience in that area that we
9 have available.

10 But I think the most -- one of the more
11 important topics in that discussion was our decision
12 to designate Unit 3 as the prototype for flow induced
13 vibration, and that will involve us developing the
14 STP-specific predictive analysis. And using K-6,
15 which is one of the operating ABWRs that results from
16 K-6, to inform the program and to, you know, validate
17 the accuracy or the reasonableness of what we're
18 getting out of the predictive analysis, and STP will
19 be a Category 1 non-prototype as a result of this
20 effort.

21 The approach is similar to the dryer
22 qualifications that we are seeing for extended power
23 uprates at BWR plants. And we have a number of
24 deliverables that we have either submitted to NRC or
25 are in the process of submitting, including observing

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1 a test some time in the July/August timeframe to help
2 us with finalizing the predictive analysis.

3 So that was a significant decision with
4 respect to the project, and, like I say, we are
5 working through that with the staff and --

6 MEMBER BANERJEE: Just a question. Are
7 you going to be almost immediately starting to uprate
8 these plants in MELLA plus conditions? MELLA plus.

9 MR. HEAD: I'm sorry. I'm --

10 MEMBER CORRADINI: He is not well versed
11 in your acronyms.

12 MEMBER BANERJEE: I'm trying to say --

13 MEMBER CORRADINI: We're allowed to say
14 what it is -- modified extended limit line analysis.

15 VICE CHAIRMAIN ARMIJO: Sanjoy, they
16 haven't shown the fuel, but --

17 MEMBER SIEBER: They don't --

18 VICE CHAIRMAIN ARMIJO: -- is a black box,
19 so the operational extended -- all that will be --

20 MEMBER CORRADINI: That will come with the
21 black box.

22 MEMBER BANERJEE: But when do we deal with
23 that?

24 MEMBER CORRADINI: They asked that
25 earlier. I thought we heard the start of next year.

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1 MEMBER BANERJEE: No, that was to do with
2 something else.

3 MEMBER CORRADINI: No, it was to do with
4 the fuel.

5 CHAIRMAN ABDEL-KHALIK: When will the fuel
6 amendment be submitted?

7 MR. HEAD: Well, the fuel amendment right
8 now is targeted for two years prior to -- two years
9 prior to fuel load. That date is still something that
10 is, you know, potentially, you know, being adjusted.
11 As we had briefed the ACRS also is that, you know, we
12 are contemplating extended power uprate. And so all
13 of that will have to be a part of, you know, the plan.

14 VICE CHAIRMAIN ARMIJO: But that
15 amendment, would those be two separate amendments?

16 MR. HEAD: Yes, sir. They will definitely
17 be two separate.

18 VICE CHAIRMAIN ARMIJO: But the fuel
19 amendment would come in first, and that is going to
20 touch many of the chapters.

21 MR. HEAD: Absolutely.

22 VICE CHAIRMAIN ARMIJO: So it is a
23 substantial piece of work, but that will be two years
24 before you plan to load fuel or --

25 MR. HEAD: Right. Now, we may back that

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1 up a little bit after a discussion with the staff on
2 resources, and then -- and our plans with respect to
3 the submittal of the extended power uprate. We want
4 to give, obviously, the staff enough time with that
5 big a submittal to have time to do the review, to
6 support our schedule, and that obviously is also why
7 we are submitting the topicalas now and having them
8 reviewed and available to us for reference.

9 So probably not yet answering your
10 question, but --

11 VICE CHAIRMAIN ARMIJO: We need to get
12 together on how to -- which are the most important
13 ones for us to review of the topicalas. But, you know,
14 holding -- deferring the core design, the fuel design,
15 really leaves a lot of work to be done, including
16 GSI-191, where you have a very unique fuel that I
17 expect that you are probably going to use. And the
18 sooner you can do that work, the better.

19 MEMBER BANERJEE: That is part of the
20 license condition, though.

21 VICE CHAIRMAIN ARMIJO: I know, I know.
22 But still.

23 CHAIRMAN ABDEL-KHALIK: But in terms of
24 experiments to support the downstream effects will
25 obviously depend on your selected fuel. So the

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1 Committee has expressed interest in reviewing these
2 topical reports that will be submitted -- that have or
3 will be submitted in support of this fuel amendment,
4 and we will work out the schedule as to when we will
5 do so.

6 MR. HEAD: Okay. We look forward to that.

7 MEMBER BANERJEE: Now, in the steam dryer
8 situation, you are sort of designing these for EPU,
9 right, conditions? So that their sort of robustness,
10 or whatever, that we don't have to worry about this?

11 MR. HEACOCK: Yes, sir. That's --

12 MR. HEAD: We realize there is a lot of
13 experience that has occurred since the original
14 certified design, and we need to factor that into our
15 thinking, given that we are going to be the prototype
16 and given the potential -- I say "potential" for an
17 extended power uprate. So we felt like this decision
18 supported both of those concepts.

19 MEMBER BANERJEE: But this initial test
20 program does not have to do with initial power uprate,
21 so --

22 MR. HEAD: Right.

23 MEMBER BANERJEE: -- I mean, EPUs.

24 MR. HEAD: We would have to do this
25 independent of the extended power uprate. It

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1 represents something of a licensing strategy, because
2 it was somewhat difficult to get the K-6 information,
3 which was the original intent in the DCD is that the
4 K-6 information would -- you know, the K-6 -- you
5 know, the K-6 was the prototype, and that just became
6 -- that was a -- it was going to be a time-consuming
7 effort to make that happen.

8 And so we elected to be the prototype and
9 basically bring all of the calculations and everything
10 that goes with it into a domestic environment, and
11 then, if it's there, readily available for any future
12 ABWRs. So it was just a --

13 VICE CHAIRMAIN ARMIJO: Okay. Scott, I
14 kind of -- I guess I missed that. You are going to --
15 you don't have access to the dryer test data or
16 whatever --

17 MR. HEAD: No, sir. We --

18 VICE CHAIRMAIN ARMIJO: -- for K-6 and K-
19 7.

20 MR. HEAD: Yes, sir, we do. Have a
21 significant amount of data. We have -- yo know, I
22 have been told it's, you know, roomfuls of data
23 available from those tests. They were very extensive
24 tests, very well done, and the test instruments lasted
25 through the cycle, except for, you know, maybe like

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1 one failure or something. So it is a very good,
2 robust test.

3 VICE CHAIRMAIN ARMIJO: So what is the
4 problem then? Why can't you use it?

5 MR. HEAD: The expectations that came with
6 Rev 3 of the Reg Guide were just -- it was going to be
7 very time-consuming for us to either replicate that
8 information. There was some aspects of -- the
9 predictive analysis, while it was available in some
10 form, it was not available in a form that we need at
11 this point, because the original vendor had most of
12 that, and so there were some disconnects there that --

13 VICE CHAIRMAIN ARMIJO: It was messy. It
14 was too messy to deal with, so you're going to just do
15 it again.

16 MR. HEAD: Yes, sir. That would be a good
17 summary.

18 VICE CHAIRMAIN ARMIJO: Right.

19 MR. HEAD: It is not always -- you know, I
20 will go with messy.

21 (Laughter.)

22 And, therefore, clarity was to be -- to do
23 this.

24 VICE CHAIRMAIN ARMIJO: Okay.

25 MR. HEAD: And so it's a --

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1 VICE CHAIRMAIN ARMIJO: But your design of
2 the dryer, you are anticipating that -- you are going
3 to design it for EPU operating conditions, to the best
4 of your ability, I would imagine.

5 MR. HEAD: Yes. At this point, I think we
6 are going to expect it to be the dryer that is in
7 existence. It will look exactly like K-6, but we will
8 certainly know that it will be able to -- you know,
9 but we will understand the consequences of the
10 extended power uprate before we go there.

11 VICE CHAIRMAIN ARMIJO: Okay.

12 MEMBER BANERJEE: That was the question.
13 And then, of course, the -- if you do go into EPU, you
14 would have to go through the appropriate programs,
15 test programs, and so on.

16 MR. HEAD: Yes, sir.

17 MEMBER BANERJEE: Which would be separate
18 from this. This is a non-EPU test program.

19 MR. HEAD: Well, if everything were to
20 work out right, we would be in both test programs at
21 the same time.

22 MEMBER BANERJEE: Ah, okay. But the --
23 what you are talking about there is the non-EPU test.

24 MR. HEAD: Yes, sir. This is for the
25 COLA. I mean, this decision is independent of the

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1 EPU --

2 MEMBER BANERJEE: Right.

3 MR. HEAD: -- and is --

4 MEMBER BANERJEE: Can you come back to us
5 with the appropriate test program?

6 MEMBER CORRADINI: They will come back to
7 somebody. It may not be us.

8 MEMBER BANERJEE: Do they think that we
9 are going to not look at an EPU? Are you kidding?

10 MEMBER SHACK: We will --

11 MEMBER CORRADINI: How many terms? How
12 many terms would you like to be here, Sanjoy?

13 (Laughter.)

14 MEMBER BANERJEE: Well, maybe --

15 MEMBER SIEBER: Do we have --

16 MEMBER SIEBER: -- successes.

17 MR. HEAD: I think you can see why the
18 decision to go to the prototype was -- become the
19 prototype was appropriate. I think it provides
20 clarity, and we will be testing the reactor at the
21 appropriate levels, our reactor at the appropriate
22 levels, and so that's --

23 CHAIRMAN ABDEL-KHALIK: When will the
24 analysis supporting the dryer flow-induced vibration
25 work be submitted? Or has it already been submitted?

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1 MR. HEAD: For the COLA, it is September I
2 believe.

3 MR. HEACOCK: September I believe, yes.

4 CHAIRMAN ABDEL-KHALIK: September?

5 MR. HEACOCK: September is what we are
6 looking for.

7 CHAIRMAN ABDEL-KHALIK: And, again, this
8 is one of the items that the Committee expressed
9 interest in reviewing the analysis in support of the
10 dry vibration.

11 MR. HEAD: I will look very similar to
12 other work that Westinghouse has done, so it will --

13 CHAIRMAN ABDEL-KHALIK: Great. Thank you.

14 MR. HEAD: Okay. Chapter 15 -- no
15 departures in Chapter 15 based on, you know, content
16 of Chapter 15. There were some changes made that
17 basically reflect the changes made from -- in other
18 chapters, but the accident analysis is in essence the
19 same. Clearly, with the fuel amendment, you know,
20 this is one of the chapters that will have a
21 significant change.

22 MEMBER SIEBER: Are your chi over Q values
23 up to date?

24 MR. HEACOCK: Yes, sir.

25 MEMBER SIEBER: And you have redone what a

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1 new applicant would initially have to do?

2 MR. HEACOCK: Yes, sir.

3 MEMBER SIEBER: And not just using the
4 values from Unit 1 and 2?

5 MR. HEACOCK: Right. We have site-
6 specific chi over Qs.

7 MEMBER SIEBER: Well, you know, okay. But
8 up to date.

9 MR. HEAD: Up to date, yes, sir.

10 MR. HEACOCK: Yes, sir.

11 MEMBER SIEBER: Okay.

12 MR. CHAPPELL: This chapter included those
13 specific analyses.

14 MEMBER SIEBER: Okay. Thank you.

15 MR. HEAD: Chapter 16, the tech specs.
16 Obviously, any changes require NRC approval. There
17 are Tier 1 departures and Tier 2 design-related
18 departures, and then the rest of it is, you know,
19 adjusting the tech specs to reflect, you know, current
20 information and inconsistencies.

21 The other big topic with respect to tech
22 specs is the bracketed items, you know, setpoints and
23 information like that. And we have used the guidance
24 in Interim Staff Guidance 08 to define that process,
25 and that has resulted in us building a setpoint

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1 methodology that the staff has reviewed. And that
2 looks -- that also looks a whole lot like the current
3 -- the Westinghouse setpoint methodology, because it,
4 in essence, is identical and has been very useful to
5 us.

6 And then, we also have the RCS pressure
7 and temperature limits methodology as part of that, so
8 that we can define what goes in tech specs, and so
9 that the tech specs can be approved at COL.

10 MEMBER SIEBER: From your setpoint
11 methodology, you will develop a scaling manual --

12 MR. HEAD: Yes, sir.

13 MEMBER SIEBER: -- that tells you how to
14 calibrate everything?

15 MR. HEAD: Yes, sir.

16 MEMBER SIEBER: Quality assurance, we had
17 a briefing on quality assurance. I guess the
18 interesting topic there is that -- recall is that it
19 is a DRAP process. And, you know, based on previous
20 feedback, we have established a schedule for when
21 information will be available to the Committee -- I
22 mean, to our expert panel.

23 At the last meeting, we also described
24 that later this year we would brief the ACRS on the
25 changes that have taken place from the original

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1 certified design and the work that has been done
2 interim -- the work that has been done by the
3 Committee to demonstrate how the process is
4 functioning.

5 MEMBER STETKAR: Scott, the -- a little
6 bit for my benefit, and certainly for the rest of the
7 Committee members, as far as the COL application, the
8 DRAP list is Table 19K-4 of the SSAR. Is that
9 correct?

10 MR. HEACOCK: Yes.

11 MEMBER STETKAR: That is indeed what is
12 being submitted for the --

13 MR. HEACOCK: Yes.

14 MEMBER STETKAR: -- COL. And anything
15 else is post-COL, is that correct?

16 MR. CHAPPELL: The expert panel is going
17 to review those inputs. That table provides the DCD
18 PRA inputs to DRAP.

19 MEMBER STETKAR: Yes.

20 MR. CHAPPELL: And they are going to
21 review that and have gone through all of the systems,
22 and so there will be -- but that will be substantially
23 the same table that is the starting point. But the
24 expert panel will be reviewing that table.

25 MEMBER STETKAR: I think what I'm asking

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1 is, when -- when the COL is issued, I'm staring right
2 now at -- on my screen, something that is called
3 Table 19K-4. It is a document. Is that document the
4 list that will be part of the COL license, with no
5 changes?

6 MR. HEAD: That will be, but we have -- we
7 have an obligation to update that list via the --

8 MEMBER STETKAR: No, I understand. This
9 is theoretically an evolving process as the PRA --
10 we'll get to the PRA later. But as the PRA develops,
11 and it's a constantly reevaluating process, and all of
12 that good stuff, but as far as the COL license
13 application, and the license, this Table 19K-4 that
14 I'm staring at right here from the SSAR is indeed the
15 table.

16 MR. HEACOCK: I'm trying to remember what
17 our obligations were to that. We --

18 MEMBER STETKAR: That's what I'm trying to
19 get at.

20 MR. HEACOCK: They are I think -- I
21 believe -- and this is going from --

22 MR. HEAD: And this is all associated with
23 the commitment as to when we are going to revise that
24 table with the latest information.

25 MEMBER STETKAR: And that is what I am

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1 trying to get at is the timing of that commitment
2 versus issuance of the COL.

3 MR. HEAD: And I am trying to understand
4 the relationship.

5 MR. CHAPPELL: From my conversations with
6 Bill Stillwell prior to this, in preparation of this
7 slide, that table is unlikely to change, minor changes
8 perhaps.

9 MEMBER STETKAR: Okay.

10 MR. CHAPPELL: So when the expert panel
11 completes their review, but what is there on that
12 table is very much what will be in the COLA.

13 MEMBER STETKAR: Okay. And as you
14 mentioned, we have -- you are going to come back to
15 us --

16 MR. HEAD: Yes, sir.

17 MEMBER STETKAR: -- to the Subcommittee
18 meeting to look at that -- whatever that evolutionary
19 process is, to amend that.

20 MR. HEAD: Right.

21 MEMBER STETKAR: I wanted to make sure
22 that I understood exactly, you know, in terms of our
23 perspective, what -- the table and the basis for
24 exactly what is being submitted as part of, you know,
25 the official COL, regardless of what happens post

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1 that.

2 MR. HEAD: I think this -- you know, this
3 briefing will -- you know, would try to attach to one
4 of the other future chapter briefings, and will I
5 think put the whole thing together for you, both from
6 a process standpoint and what the future will look
7 like.

8 MR. CHAPPELL: We still have an action
9 item that is not closed out on this.

10 MR. HEAD: Right, yes. That is -- I'm
11 referring to the followup item that we agreed to at
12 the last meeting to provide that information.

13 MEMBER STETKAR: Is it pertinent now or --
14 you have Chapter 18 in between 17 and 19. I wanted to
15 ask you to kind of educate the rest of the Committee
16 on the evolution of the PRA itself. And maybe --
17 should we do that, go through 18 and get to that, or
18 do 17 and 19 together and --

19 MR. HEAD: I will stop at 19 and we'll do
20 that.

21 CHAIRMAN ABDEL-KHALIK: Let's jump to 19,
22 if you'd like --

23 MR. HEAD: Okay. All right.

24 CHAIRMAN ABDEL-KHALIK: -- and then go
25 back to --

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1 MR. HEAD: Okay. So the PRA for the ABWR
2 was developed as part of the original certification
3 effort in the late 1980s and early 1990s. With the
4 change in vendor, that PRA information was not
5 available to us, so we had to reconstitute the PRA to
6 be able to do, you know, DRAP or all of the -- or
7 evaluate the departures that were -- the expectation
8 that we evaluate departures with a PRA.

9 And so we went on an effort to
10 reconstitute it. We validated it. We also corrected
11 a couple of the issues that had been observed with
12 respect to common mode failure, and we now have a
13 model that is functioning in the construction
14 timeframe for us to evaluate departures or any other,
15 you know, activities of that type that we need to do.

16 So that was the --

17 MEMBER STETKAR: But, Scott, that model,
18 except for the couple of changes you made to some of
19 the common cause failures, not all, is fundamentally a
20 mid-1980s vintage --

21 MR. HEAD: Absolutely.

22 MEMBER STETKAR: -- limited scope PRA.

23 MR. HEAD: Early '90s. It is --

24 MEMBER STETKAR: That does not even model
25 the current design configuration of your plant.

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1 MR. HEAD: Yes, sir.

2 MEMBER STETKAR: Okay.

3 MR. HEAD: We are in fact building that
4 model right now, the operational model I guess I call
5 it.

6 MEMBER STETKAR: Yes.

7 MR. HEAD: And we will have some results
8 of that later in the year, and that will, you know,
9 serve us as the -- that will be the model that we will
10 do all of the -- will take the plant forward and be
11 available for us for, you know, future license
12 amendments and, obviously, operating the plant.

13 MEMBER STETKAR: Now, in particular,
14 because I wanted to link 17 and 19 together,
15 obviously, for populating the DRAP going forward, on
16 the DRAP list, doing whatever you do with this
17 Table 19K-4, all of that will be done after the COL
18 using the work in progress, your operational PRA, as
19 part of the input for the risk-significance of
20 equipment. Is that correct?

21 I'm trying to understand where the
22 operational PRA fits into determining risk-
23 significance of things.

24 MR. HEAD: I'm not sure where the
25 transition from that one and the operational will take

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1 place with respect to DRAP. I think -- if I could,
2 maybe we could answer that one when we --

3 MEMBER STETKAR: Okay.

4 MR. HEAD: -- when we close this file, we
5 will --

6 MEMBER STETKAR: Okay.

7 MR. HEAD: -- we will --

8 MEMBER STETKAR: That's fair. That's kind
9 of a heads up.

10 MR. HEAD: And as you can imagine -- and
11 I'll -- you know, your discussion is accurate, it is -
12 - it is, in a PRA, of a vintage that, you know, we
13 clearly want, you know, to move -- you know, move
14 forward, use the current technology, and that is why
15 we have -- you know, that's why we are where we are
16 with respect to developing the new, you know, say
17 operational models, because we want to be able to use
18 that as soon as possible. And we will expand on that
19 in the closeout of the followup item.

20 MEMBER STETKAR: Okay.

21 MR. HEAD: Okay?

22 MEMBER STETKAR: Thanks.

23 MR. HEAD: Will that do for 19?

24 MEMBER STETKAR: That will --

25 MR. HEAD: Okay.

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1 MEMBER STETKAR: For me, yes.

2 MR. HEAD: All right. Well, we will do
3 Chapter 18, then. Human factors engineering -- there
4 is no departures from the human system interface
5 design implementation process. It provides the human
6 system interface design goals and bases, including
7 main control room standard design features and
8 technologies. And STP will comply with the Tier 2
9 requirements -- that is in 1880 -- for the ABWR human
10 factors program, and that is going to fully comply
11 with the human system interface design implementation
12 process.

13 And we are also, as part of this -- we are
14 going to consider the good practices that are
15 identified in NUREG-0711, Rev 2, as appropriate.

16 Any other questions on Chapter 18? I've
17 got an expert on that chapter here with us. Okay.

18 VICE CHAIRMAIN ARMIJO: Your wording kind
19 of says there must be some bad human factors,
20 engineering practices. You know, what do you mean by
21 "good"?

22 MR. CHAPPELL: The outline of --

23 VICE CHAIRMAIN ARMIJO: All or selected or
24 convenient or what?

25 MR. CHAPPELL: By and large, they are just

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1 the requirements that are in the DCD form the basis.
2 The staff has done a better job explaining this,
3 because of their involvement at the time, but it is by
4 and large the same elements, but slightly different
5 restructuring, different emphasis in some areas. But
6 it basically follows the outline in the ABWR.

7 We understand that the development since
8 the ABWR was certified, and what they are required to
9 do, we understand there are good practices in the
10 NUREG, Revision 2, that we will -- we will definitely
11 consider moving forward as part of the design.

12 VICE CHAIRMAIN ARMIJO: So, basically, you
13 would adopt the good -- the practices in NUREG-0711,
14 Rev 2.

15 MR. CHAPPELL: We would put that in with
16 our --

17 VICE CHAIRMAIN ARMIJO: Expected
18 practices.

19 MR. CHAPPELL: We would incorporate that
20 in with our requirements.

21 MR. HEAD: There is clearly good ideas in
22 there that we ought to adopt. And, as appropriate,
23 you know --

24 VICE CHAIRMAIN ARMIJO: So you will be
25 selecting some and not selecting others. Is that --

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1 that's what I'm trying to get clear, that you will
2 kind of cherrypick this.

3 MR. CHAPPELL: We will look at the
4 requirements that we have, and we will look at how the
5 latest development of HFE programs have been done. We
6 have a large number of people that are involved in our
7 program that have gone through that, and they are
8 comfortable with that process.

9 But rather than cause a messy licensing
10 condition where we are trying to change and update
11 this, to stay with the certified design but we
12 recognize that there may be improvements that we would
13 incorporate because they make sense, to do that based
14 on the guidance of Rev 2.

15 VICE CHAIRMAIN ARMIJO: Okay. Thank you.

16 CHAIRMAN ABDEL-KHALIK: I guess, just for
17 the record, during the Subcommittee deliberations, we
18 have noted that the -- you had not identified,
19 evaluated, or addressed pertinent Part 21
20 notifications issued during the more than 10-year
21 period between the ABWR design certification and
22 submittal of your COLA. Would you care to comment on
23 this issue just for the Committee in general?

24 MR. HEAD: Yes. That was a question I
25 guess maybe for one of the first discussions or first

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1 briefings. We -- Westinghouse then went back and
2 looked at all of the Part 21s that had been identified
3 since '97 and identified those that were applicable to
4 the ABWR, and we have confirmed that they have either
5 been addressed or we were aware of them or that, you
6 know, they have been appropriately, you know,
7 dispositioned.

8 There is still a question as to whether
9 that was far enough, you know, to go back, and we are
10 embarking upon looking at a -- finding an endpoint
11 that would be appropriate to us to go back to see
12 whether or not those would have been addressed as part
13 of the original certified design, and we are doing
14 that.

15 And then, I believe that the staff is
16 going to address the open item I think from an overall
17 process standpoint that -- as to at least the way, you
18 know, we would expect Part 21 to work with respect to
19 the vendor obligations and an issue that is defined
20 and how would that have fit in, say, for example, in
21 the certified design process. And, like I say, the
22 staff can do that, and, obviously, we have discussed
23 that with you also as to how it would fit into the
24 process. Is that --

25 CHAIRMAN ABDEL-KHALIK: Yes. But it is

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1 important to note that there is -- or there had been,
2 indeed, a process deficiency that perhaps has been
3 addressed with regard to STP by going back and looking
4 at this. But still, the bigger issue of addressing
5 the process deficiency needs to be addressed.

6 MR. HEAD: Right. I understand.

7 MR. TONACCI: This is Mark Tonacci. You
8 are right, Scott, that the staff will bring back the
9 global approach to how the NRC is handling Part 21.
10 We didn't think we had sufficient time today to cover
11 that, so that will be a future Subcommittee meeting.

12 CHAIRMAN ABDEL-KHALIK: Yes, I understand.

13 But it's important for the Committee to note that
14 that -- that such deficiency exists.

15 MR. HEAD: That completes our briefing.

16 CHAIRMAN ABDEL-KHALIK: Thank you very
17 much. At this time, we will move to the staff's
18 presentation.

19 MR. WUNDER: Good morning, Mr. Chairman,
20 gentlemen. Thank you for having us here to speak to
21 you this morning.

22 I'm George Wunder. I am the lead project
23 manager.

24 The status of the staff's SER will be
25 presented today by the chapter project managers. The

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1 chapters are not assigned to the project managers in
2 numerical order, so to avoid jumping from person to
3 person we have elected to present in the following
4 order.

5 Tekia Govan will lead off with a
6 presentation on Chapter 4, Reactor, and Chapter 5,
7 Reactor Coolant System. She will be followed by
8 Adrian Muniz with Chapter 7, Instrumentation Control;
9 Chapter 8, Electrical Power; and Chapter 15, Accident
10 Analysis.

11 Then, Stacy Joseph will present Chapter 6,
12 Engineered Safety Features; 14, Verification Programs;
13 16, Technical Specifications; and 10, Steam and Power
14 Conversion System. She will be followed by Raj Anand
15 with Chapter 1, which is General Plant Description; 11
16 on Radioactive Waste Management; 12 on Radiation
17 Protection; and 17 on Quality Assurance.

18 And, finally, Rocky Foster will clean up
19 with Chapter 13, Conduct of Operations; 18, Human
20 Factors; and 19, PRA.

21 Thank you. Tekia?

22 MS. GOVAN: Good morning. My name is
23 Tekia Govan, and, as George stated, I am the chapter
24 PM for Chapters 4 and 5.

25 Most of Chapter 4 entitled "Reactor" was

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1 incorporated by reference. During our last
2 Subcommittee meeting with the Subcommittee on
3 Chapter 4, downstream fuel effects was the only open
4 item that we discussed during the presentation.

5 The staff determined that the applicant
6 needed to submit a license condition requiring testing
7 of fuel loading in the initial core for downstream
8 fuel effects. The applicant has since responded to
9 the open item with a license condition that the staff
10 is currently reviewing.

11 As such, 04-04-3 remains an open item
12 pending the approval of the staff. This action item
13 is also an ACRS action item as well.

14 During the Subcommittee meeting for
15 Chapter 5, Reactor Coolant System and Connected
16 Systems, the highlights of the meeting were reactor
17 vessel material and which at that time the staff found
18 the section to be acceptable with no open items.

19 P/T limits, which I will discuss in a
20 following slide, pre-service, in-service inspection,
21 in which there are no open items, reactor coolant
22 pressure boundary leakage, which during the last
23 Subcommittee meeting it was an open item, but
24 administrative in nature, so at this time the action
25 item is closed, and we will not be discussing it

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1 during this meeting.

2 Compliance with 10 CFR Part 50, Section
3 50.55, and applicable code cases, there are no open
4 items, and the RCIC turbine design change, and which I
5 will be discussing in a future slide.

6 Pressure/temperature limits -- there was
7 an ABWR, a DCD, COLA item 5.6, which required the STP
8 applicant to submit plant-specific P/T limits. STP
9 has submitted generic pressure/temperature limits, but
10 in those -- or in that submittal they used a Japanese
11 STANSYS code to perform their finite element analysis
12 needed to develop the limits.

13 The NRC staff did not have access to the
14 STANSYS code. What do have access to is ANSYS, and
15 so, after having discussions with the South Texas
16 Project, they decided to redo their P/T limits using
17 the ANSYS code. We will be getting that response from
18 the applicant at the end of July.

19 Reactor core isolation cooling system had
20 two open items. The first open item was an audit or
21 followup action item from an audit to revise the
22 topical report to specify functional qualification
23 provisions for the RCIC turbine pump, and to specify
24 surveillance testing for the RCIC standby lubrication
25 pump.

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1 The applicant has submitted their RAI
2 responses to those two items, addressing the items in
3 full, and those two items have been resolved.

4 The second open item relates to an RAI in
5 which the staff requested that the applicant submit
6 pump calculations showing available net positive
7 suction head margin when head loss from a new ECCS
8 section strainer is determined.

9 We are still waiting for that RAI
10 response. We should have it in tomorrow.

11 At this time, I am going to turn the floor
12 over to Adrian Muniz, who is the chapter PM for
13 Chapters 7, 8, and 15, and he will provide the
14 Committee a status update on those chapters.

15 MR. MUNIZ: Thank you, Tekia.

16 My name is Adrian Muniz. And like Tekia
17 said, I am the chapter PM of Chapters 7, 8, and 15, of
18 the STP COLA review, and I will be presenting those
19 chapters.

20 For Chapter 7, the high points of that
21 chapter were the standard departure 3.4-1, which
22 changed the I&C architecture to address obsolete data
23 communication technology and digital I&C platform
24 selection. On our SER, we also included the
25 evaluation of the instrument setpoint methodology that

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1 was submitted by South Texas to resolve bracketed item
2 in the technical specifications.

3 In regards to Chapter 7, we carry only one
4 open item related to that instrument setpoint
5 methodology. Since it was identified by the staff,
6 they had -- such methodology lacks the OPRM setpoints.

7 The applicant will be submitting that information at
8 the end of July, and it will be reviewed by the staff
9 at that point.

10 And there is no ACRS action items
11 identified for the staff.

12 MEMBER BROWN: Before you leave, can I --

13 MR. MUNIZ: Please.

14 MEMBER BROWN: -- comment?

15 MR. MUNIZ: Of course.

16 MEMBER BROWN: In the last meeting,
17 Subcommittee meeting we had, we had an extensive
18 discussion on the issues of determinance behavior and
19 independence of the response division. There was a
20 Westinghouse gentleman here -- I believe it was a
21 Westinghouse gentleman -- and he gave a rather -- a
22 very detailed discussion of how you are supposed to
23 have some independent performance relative to the
24 Common Q platforms. I believe that is for the ESF
25 systems. And the FPGA, which is used in the reactor

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1 protection system. If I've got that reversed, tell
2 me, but I think I still remember that correctly.

3 So it was a very good discussion.
4 Subsequent to that, I went back and I -- I went back
5 to Chapter 7 again and looked for any place where we
6 had a documented -- whether a topical report or what
7 have you, that would have articulated that as part of
8 the FSAR that was submitted for the I&C, both the
9 reactor protection system and the engineered safety
10 feature system.

11 I couldn't find a topical report that goes
12 through his discussion on why the transmittal of high-
13 speed data from one microprocessor to another
14 division's voting unit, why that would be totally
15 independent. He had his explanation. It is there in
16 the transcript. But there is no documentation of that
17 in the detailed piece of the paper or the
18 documentation that we have for this particular system,
19 or either system, with it be the FPGA or whether it be
20 the Common Q platform.

21 So the next thing I did, I said, "Okay.
22 Don't sign that," and then go look at the DAC. Let me
23 call it ITAAC, so I don't get anybody riled up here.
24 And if you go look, there are I guess Tier 1 --
25 Section 2.7.5 identifies a number of what they call

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1 essential communication function tests.

2 The only -- the stated comments they have
3 under the inspections and test column, which says we
4 will run a test to determine, number 1, its
5 determinant, and the report will say it's determinant.

6 There is no criteria listed. There is no
7 identification of the type of testing or analysis that
8 would be done. And I'm not saying you have to have a
9 test procedure written out. That's not the point.

10 The point is, what do you mean by
11 determinant? What type of analysis is done? And the
12 gentleman did mention, you know, that if you go look
13 in the Common Q platform topical report itself it
14 talks about, you know, is he in a rut-driven system
15 and how you have to do certain things. And it says
16 you've got to do timing analysis. But it doesn't list
17 criteria by which a subsequent inspector would be able
18 to then determine if that's satisfactory.

19 The same thing goes if you paw through a
20 couple of -- that was Item 2. If you look through the
21 data communications part, there are tests to show that
22 if you lose a signal, like the fiber optic line gets
23 broken or a driver -- fiber optic driver, a module
24 fails, if the single goes to, you know, nothing, there
25 is nothing going anywhere, well, there is tests to go

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1 show that.

2 However, there is no test to demonstrate
3 that the corruption that is arguable whether it could
4 happen, but you -- there is no tests that show that
5 corrupted data being transmitted from one division
6 into each of the other divisions is in fact screened,
7 found, thrown out, and then you have a signal that is
8 told to the receiving system that, hey, ignore that,
9 you've got to put a flag in there -- this is a trip --
10 because if you get the wrong -- if there's nothing
11 relative to that in any of these ITAAC, either the
12 test descriptions or in the acceptance criteria.

13 So while you don't identify any open
14 items, as I noticed in the presentation here right
15 now, that -- based on a look, trying to see, how do we
16 document this in a Tier 1 level approach to doing
17 business, so that we can carry this on through for
18 subsequent licensees as well, there is nothing. There
19 is nothing there that allows you to determine that you
20 have really got something in there.

21 Now, I don't know if anybody else has
22 found anything that I haven't found, but that's -- I
23 have gone through all of the stuff, and it was a good
24 discussion. I am not quibbling about the level, the
25 technical quality of the discussion, but that is an

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1 oral discussion. It is not --

2 VICE CHAIRMAIN ARMIJO: That is not in the
3 documentation.

4 MEMBER BROWN: It is not in the
5 documentation. And so what I'm looking for to try to
6 clear this stuff out is some way that this is
7 documented that when we go forward we know in three or
8 four years what is going to be delivered.

9 And whoever is inspecting it, without
10 getting into an argument about who is doing the
11 inspection, which is another issue, they have a set of
12 criteria and a set of tests that are identified that
13 these criteria for independence and determinacy, which
14 are key items, okay, very key items in terms of
15 performance of these systems -- as long as you have
16 communication system to system, division to division,
17 you have got to test somehow or analyze to show that
18 that's okay.

19 So that was -- so to end my --

20 CHAIRMAN ABDEL-KHALIK: Charlie, just to
21 sort of capture this, you are satisfied with the
22 response that was provided by Westinghouse on the
23 record.

24 MEMBER BROWN: On the record -- and I'm
25 looking --

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1 CHAIRMAN ABDEL-KHALIK: Your concern is
2 documentation.

3 MEMBER BROWN: Well, let me step back just
4 a second. I am not a dual port PROM expert, and have
5 never claimed to be. The argument was that the use of
6 dual port PROM and the way the stuff is transmitted
7 through eliminates all possible combinations and port
8 data that could go to -- from one division to any
9 other one.

10 Sounded nice, but how do I test for that?

11 So there is still some absence. I don't know whether
12 that is correct or not. I spoke to some other folks
13 that are knowledgeable, that I happen to know, and
14 they questioned my thought process.

15 CHAIRMAN ABDEL-KHALIK: Okay. Let's --

16 MEMBER BROWN: That technical performance.

17 CHAIRMAN ABDEL-KHALIK: Okay.

18 MEMBER BROWN: So anyway, that's -- to me
19 that is still why you don't -- you're right, you don't
20 show it as an open item. In my mind, that's -- I am
21 still trying to -- it's open.

22 MR. TONACCI: This is Mark Tonacci. I
23 understand that you were satisfied at the time with
24 the technical content of that discussion, which was
25 the original open item, and I have no problem with the

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1 open item morphing into documentation and testing.
2 Those are a good set of expectations that you just
3 gave us, and we can work with those.

4 But I did want to get some clarity. At
5 some point, the original question, is that still open
6 or closed, and I thought I heard it's closed, but then
7 I didn't.

8 MEMBER BROWN: No. I didn't close it the
9 last meeting. I just listened to the gentleman, and I
10 could not -- without going off and doing some
11 additional review, I was -- you know, it's open until
12 I could -- so I tried to clarify or get a better
13 understanding from looking at the other paperwork and
14 trying to get a little bit more technically smart from
15 some other source, and what -- so I wasn't able to
16 close that out from that standpoint.

17 MR. TONACCI: I understand.

18 MEMBER BROWN: And I'm not -- I don't want
19 to sit here -- if there's sufficient testing or
20 criteria that are established that can demonstrate
21 that independence and deterministic behavior, I'm not
22 going to sit here and argue about what little piece
23 parts are being used, as long as the -- you know, the
24 testing, if that's the direction we're going with
25 ITAAC, because we don't see the whole design now, I'm

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1 trying to figure out a way to accommodate that
2 approach. But it is not visible in the testing part
3 of this thing.

4 MR. TONACCI: I think what you just shared
5 with us was clear in terms of documentation, and the
6 testing doesn't show that followthrough. And I got
7 that.

8 MEMBER BROWN: Okay.

9 MR. TONACCI: The original open item,
10 which was, do we have determinacy and independence, I
11 thought I heard you say the discussion hit that on the
12 head.

13 MEMBER BROWN: No. He provided an
14 explanation, which I can't necessarily say is
15 absolutely correct.

16 MR. TONACCI: Okay. So --

17 MEMBER BROWN: I'm leery of that, just
18 from past experience.

19 MR. TONACCI: I guess I'm not sure whose
20 court this one is.

21 MEMBER BROWN: The ball is in your all's
22 court.

23 CHAIRMAN ABDEL-KHALIK: I think perhaps by
24 addressing the documentation issue that will address
25 Charlie's issue.

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1 MEMBER STETKAR: I think the testing is
2 what is in ITAAC, specificity in the ITAAC.

3 MEMBER BROWN: Specificity in the ITAAC
4 and criteria to which you can then test and
5 demonstrate the independence and demonstrate the
6 determinacy. Then, I become satisfied. But until I
7 see something like that, I have a hard time saying I'm
8 open -- it's closed, because I can't confirm now that
9 I can sign up. Oh, yes, it's okay based on the lack
10 of that particular -- those particular
11 characteristics.

12 CHAIRMAN ABDEL-KHALIK: So at this point,
13 we will proceed. The issue that remains open is the
14 level of specificity in the ITAAC.

15 MR. TONACCI: I can go with that.

16 MEMBER STETKAR: If I -- just to clarify
17 Mark's concern, if I can bounce this off you, you
18 didn't hear anything in the applicant's description
19 that would cause you immediate concern with the design
20 itself.

21 MEMBER BROWN: No.

22 MEMBER STETKAR: Okay.

23 MEMBER BROWN: Well, it's --

24 MEMBER STETKAR: Well, but as long as the
25 testing program can indeed verify his description of

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1 the design.

2 MEMBER BROWN: Exactly.

3 MEMBER STETKAR: Okay. So, in that sense,
4 there was no showstopper -- if I can use that term --
5 in terms of some fundamental design feature that --

6 MEMBER BROWN: I'm open to -- and if
7 they're going to communicate, I'm open to that, as
8 long as we can demonstrate that we have bounded the
9 problem. And right now the guy was effectively saying
10 no corruption can ever get through, and how do you
11 bound that?

12 MEMBER STETKAR: Okay.

13 MEMBER BROWN: Same thing with
14 determinacy. How do yo --

15 CHAIRMAN ABDEL-KHALIK: I think we can
16 resolve this issue. Thank you. And the staff
17 understands the concern, and what the path forward
18 will be.

19 MR. TONACCI: We got it. Thank you.

20 CHAIRMAN ABDEL-KHALIK: Please proceed.

21 MS. BANERJEE: This is Maitri Banerjee.
22 Can I just say that I think that open item is still --
23 I mean, that action item is still open. I don't think
24 it is closed out yet.

25 CHAIRMAN ABDEL-KHALIK: That's fine.

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1 MR. MUNIZ: All right. Moving on to
2 Chapter 8, we had a departure -- standard departure,
3 8.3-1, which basically changed the medium voltage
4 ratings, and the applicant already provided the
5 numbers there. But basically it went from 6.9 kV to
6 3.8 and 4.16 kV, changed the diesel generator and
7 combustion turbine generator ratings, added a reserve
8 auxiliary transformer, and in our SER that departure
9 was found to be acceptable.

10 In our SER, we have identified an open
11 item, and it was also a point of discussion from ACRS,
12 where the diesel room temperature was changed from 50
13 to 60 degrees. And subsequent to that initial
14 meeting, we came back to the ACRS and closed that
15 meeting, based on the fact that the equipment
16 installed in that room is going to be specified -- be
17 suitable for that environmental condition.

18 We are still carrying an open item related
19 to the underground cable testing program, and the
20 applicant is -- owes us a response to an RAI, a
21 supplemental response, basically demonstrating that
22 they will implement an acceptable program.

23 There is an ACRS action item related to
24 the station blackout rule. Those requirements will be
25 met, considering the operator action. We issued an

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1 RAI to the applicant requesting that they demonstrate
2 that they can meet that criterion, or provide a
3 scoping analysis that the RAI has not been -- the
4 response has not been received as of yet and will be
5 reviewed by the staff.

6 On Chapter 15, basically all of the
7 departures listed there were evaluated in all of the
8 chapters. The COL information items were satisfied
9 based on information found in the DCD, and the
10 supplemental information was found to be acceptable.

11 The only one open item that we have in
12 Chapter 15 dealt with technical support center dose
13 calculation. It came from an RAI in Chapter 13. The
14 applicant has provided the information, and this
15 information was found to be acceptable, as the
16 radiological consequence analysis for the TSC met the
17 dose acceptance criteria on 5 rem TEDE, for the
18 duration of an accident.

19 Furthermore, we performed an audit of the
20 calculation on June 25th at the Westinghouse
21 facilities in Rockville. The calculations were found
22 to be performed using an NRC computer code, and to be
23 performed in accordance with the SRP 15.0.3. And
24 there were no ACRS action items identified with
25 Chapter 15.

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1 CHAIRMAN ABDEL-KHALIK: Thank you.

2 MR. MUNIZ: If there are no questions, I
3 will turn it over to Stacy Joseph.

4 MS. JOSEPH: Thank you. My name is Stacy
5 Joseph. I'm the chapter PM for Chapters 6, 14, and
6 16. Tom Pye is not here with us today, so I will also
7 be presenting Chapter 10.

8 On June 24th, the staff presented
9 Chapter 6, Engineering Safety Features, to the ABWR
10 Subcommittee. The staff's presentation focused on the
11 containment analysis and also on the review of the
12 ECCS suction strainer design. During that
13 presentation, the staff concluded that the
14 pressure/temperature and post-swell parameters are
15 within the plant safety margins and that the
16 methodologies using GOTHIC are acceptable -- are
17 conservative. Apologies.

18 Staff also completed their review of the
19 Chapter 6 portion of the strainer design, and there is
20 one remaining open item for chemical effects.

21 As of the last ACRS Subcommittee meeting,
22 there were three open items.

23 CHAIRMAN ABDEL-KHALIK: Excuse me.

24 MS. JOSEPH: Yes.

25 CHAIRMAN ABDEL-KHALIK: The open item is

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1 related to chemical effects or downstream effects?

2 MS. JOSEPH: Well, downstream effects, we
3 are calling that a Chapter 4 open item. We have
4 already discussed it. So there still is a strainer.

5 (Laughter.)

6 CHAIRMAN ABDEL-KHALIK: Sorry. I have to
7 keep track of all of these pieces and what --

8 MS. JOSEPH: I understand.

9 CHAIRMAN ABDEL-KHALIK: Thank you.

10 MS. JOSEPH: Understand. In Chapter 6,
11 when we last met, there were three open items related
12 to Chapter 6. The first had to do with toxic gas
13 calculations. That review is still ongoing. We have
14 received the response, and we are evaluating that at
15 this time.

16 There was also an open item on vacuum
17 breaker protection. The staff has reviewed that RAI
18 response, and at this point has determined it is
19 acceptable and that item is closed.

20 And, finally, the open item on chemical
21 effects, which we are still waiting on a portion of
22 STP's response, so that is currently under review at
23 this time.

24 And everyone's favorite topic, there is
25 still one ACRS action item -- or a couple ACRS action

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1 items that fall within the downstream effects on fuel.

2 And, as Tekia mentioned, we will be --

3 MEMBER CORRADINI: Whose favorite topic?

4 (Laughter.)

5 PARTICIPANT: You all's.

6 MEMBER CORRADINI: Y'all?

7 MS. JOSEPH: The staff is evaluating that
8 response, and we will be revisiting that during the
9 presentation of Chapter 4.

10 VICE CHAIRMAIN ARMIJO: Stacy, before you
11 move on, you talk about zinc corrosion products in
12 particulate form. Where does that zinc come from? Is
13 that from the coating?

14 MS. JOSEPH: I think the --

15 PARTICIPANT: Paint.

16 MS. JOSEPH: Primer.

17 VICE CHAIRMAIN ARMIJO: Okay.

18 MS. JOSEPH: Okay. Next, Chapter 14
19 covers verification systems.

20 Is there another question?

21 CHAIRMAN ABDEL-KHALIK: Please proceed.

22 MS. JOSEPH: Okay. Thank you. Chapter 14
23 covers verification programs. A significant area that
24 the staff reviewed in this chapter includes initial
25 plant testing, startup administrative manual. There

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1 were several departures to pre-operational and start-
2 up test abstracts that were reviewed, and, in
3 addition, design certification and site-specific
4 ITAAC.

5 As of right now, there are two open items
6 related to initial plant testing for pre-operational
7 and start-up tests. These are for flow-induced
8 vibration. STPs, comprehensive vibration assessment
9 program, is due to be submitted in December, so this
10 is an ongoing evaluation at this time.

11 In addition, the staff is developing
12 generic license conditions for initial plant testing
13 in the area of pre-operational and start-up test
14 specifications and procedures, start-up admin manual,
15 start-up and power ascension test phase results,
16 program schedules, and test changes.

17 And Chapter 16 -- Chapter 16 covers
18 technical specifications. The review of the staff
19 focused on verifying that plant-specific tech specs
20 and bases, and, properly incorporated by reference,
21 the ABWR generic tech specs and bases.

22 The staff verified that departures from
23 the generic tech specs and bases were warranted and
24 justified, and, in addition, they verified that the
25 plant-specific tech specs and bases incorporated

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1 acceptable site-specific information in order to
2 complete all bracketed items in accordance with the
3 interim staff guidance.

4 There are currently two open items in
5 Chapter 16, and these two open items depend on the
6 closure of open items in other chapters that have
7 already been discussed -- setpoint methodology and the
8 PTLR report.

9 And, finally, Chapter 10, steam and power
10 conversion system. The staff, in their June 23rd
11 Subcommittee meeting, discussed the STP change from
12 using mechanical and electrical overspeed control to
13 electrical overspeed control systems. The issue of
14 redundancy and diversity is part of the RAI challenge
15 that the staff is currently working through.

16 We also discussed the departure which
17 changes the turbine generator to the Toshiba design.
18 Next, the staff touched on the turbine missile
19 analysis and the turbine maintenance program, but, as
20 STP stated, this issue will be presented to ACRS in
21 more detail as part of Chapter 3 in the fall 2010.

22 And, finally, we discussed Tier 2
23 departures, 10.4-5, which involves changing the
24 components in the condensate feedwater system.

25 Since the June 23rd Subcommittee meeting,

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1 there was a total of six open items. Three of those
2 related to the turbine gland sealing system have since
3 been closed. We are pursuing the resolution on two of
4 the open items in Section 10.2 on the design of the
5 turbine overspeed control, and there is one more open
6 item on the condensate feedwater system, which was a
7 configuration control issue that I believe has since
8 been -- is not a technical issue.

9 MEMBER BROWN: Can I ask a question on
10 this one?

11 MS. JOSEPH: You can.

12 (Laughter.)

13 I apologize, this isn't my area.

14 MEMBER BROWN: No, it relates to the ITAAC
15 again on the testing of the microprocessor -- you
16 know, the electrical, the electronic, whatever you
17 want to call it -- based overspeed --

18 MS. JOSEPH: Okay.

19 MEMBER BROWN: -- trip system. While it
20 shows complete -- you know, the little pictures in the
21 RAI show, you know, two independent systems, and all
22 that kind of stuff, but it -- one of your test
23 inspections and analyses, as you referenced in the RAI
24 response, or as STP referenced in the RAI response,
25 identified that all of these testing -- these things

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1 are truly independent, and, in fact, that they respond
2 as -- are as-built type tests.

3 In other words, the equipment is designed,
4 built, out of the factory, it is now in the plant.
5 That's what I call "as-built." I don't know that
6 that's right or not, but you have no idea whether it's
7 supposed to do -- what it is supposed to do until you
8 have it installed.

9 And all of the acceptance criteria says
10 there is a report that exists that documents that they
11 are generated and that they are diverse, but there is
12 no criteria provided to say what an inspector looks
13 for relative to what does that diversity consist of.

14 And, you know, so that when you are
15 looking at it, you know, the guy is just sitting there
16 looking -- okay, well, they've got this and this. Is
17 that okay or not? So that's just a hole relative to
18 the ITAAC, in terms of, again, this same issue of
19 specificity as to how the idea of independence and
20 diversity is maintained in this turbine overspeed
21 control.

22 John, I don't know whether you and Dennis
23 had any other comment on that, but that was just my
24 observation on the thing.

25 MEMBER STETKAR: And I guess we have to

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1 wait until Chapter 3 until we hear what the plan is
2 for the turbine overspeed missile analysis, which
3 actually will provide a lot of details on how those
4 trip systems were actually configured, if we could see
5 the analysis.

6 MEMBER BROWN: John, I'm not arguing about
7 trip setpoints and all of that.

8 MEMBER STETKAR: No, no, no, no. That --
9 no, the actual configuration.

10 MEMBER BROWN: Just the fundamental
11 configuration of the system. That's all.

12 CHAIRMAN ABDEL-KHALIK: thank you.

13 MR. ANAND: Good morning. My name is Raj
14 Anand, and I will be presenting to you the highlights
15 of Chapters 1, 11, 12, and 17.

16 Chapter 1 provides an overview of the
17 application. The application -- the applicant has
18 provided all of the information required to support
19 issuing of a COL. Toshiba Power has been chosen to
20 supply the ABWR design for STP Units 3 and 4.

21 The staff has reviewed the STPNOC due
22 diligence report. The staff performed audits and
23 inspections to support the review of the report.
24 Staff's effort is summarized in the safety evaluation
25 report for Chapter 1, and it has concluded that

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1 Toshiba is a qualified alternate vendor to supply the
2 certified design for USABWR.

3 The staff has provided a copy of the
4 inspection report to the ACRS, and it is available to
5 public in ADAMS.

6 The open items in Chapter 1 SER are
7 largely of non-technical in nature. However, there
8 are two items the staff is currently reviewing. The
9 one is -- the one open item is related to the aging
10 management of the systems, structures, and components.

11 The applicant has committed to use GALL report for
12 their aging management programs.

13 The second item is concerning regarding
14 the construction impact on the operating reactors.
15 The staff is reviewing the applicant information in
16 accordance with the guidance provided in the Interim
17 Staff Guidance, ISG-22.

18 There are no ACRS open items related to
19 Chapter 1.

20 Chapter 11 deals with the radioactive
21 waste management. The staff's SER considered the
22 redesign of the liquid waste management system,
23 redesign of the solid waste management system,
24 modification to the gaseous waste management system,
25 and modification to the process and effluent

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1 radiological instrumentation and sampling system.

2 There was one Tier 1 change -- removal of
3 SCRAM and MSIV closure on high radiation signal. This
4 change was reviewed and found to be acceptable.

5 The redesign of the liquid waste
6 management system and solid waste management system
7 were Tier 2 changes, not requiring NRC approval. The
8 staff reviewed the application and the RAI responses.

9 In addition, the staff conducted an onsite audit. As
10 documented in the staff's SER, we found the applicant
11 met the applicable standards identified in Section 8
12 of the Appendix A to 10 CFR Part 52, in making the
13 changes to the liquid waste management system and the
14 solid waste management systems.

15 At the time of our presentation to the
16 Subcommittee, there were three open items associated
17 with the condensate or storage tank. These open items
18 have been closed in Chapter 11, and supplement RAIs
19 were written in Section 12.2, radiation sources, as
20 they pertain to source term issue.

21 The staff's review of Chapter 11 is
22 complete. There are no open items. SER is in
23 concurrence. There are no ACRS action items for staff
24 in Chapter 12 -- or Chapter 11.

25 Chapter 12 deals with radiation protection

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1 during normal plant operation and occurrences. The
2 staff SER considered the applicant's ALARA program,
3 doses to the public from effluent releases, radiation
4 protection equipment and features, dose assessment,
5 and operation radiation protection program.

6 There are no Tier 1 changes particular to
7 this chapter. However, there are numerous Tier 2
8 changes associated with the radioactive-based handling
9 system and equipment. As a result of the staff
10 review, the staff has identified four items yet to be
11 resolved in Chapter 12 SER.

12 The staff is working with the applicant to
13 close the following -- these four open items. The
14 staff has a question as to the appropriateness of
15 input factor in a model predicting annual doses to the
16 public from gaseous effluent to the environment. The
17 staff needs basis for gas resources, term adjustment
18 factors.

19 We have requested a more detailed source
20 term associated with the spent fuel storage in order
21 to support a shielding ITAAC. STP is working with
22 Westinghouse to obtain such data, inclusion of the
23 condensate storage tank, as a radiation source, and
24 the demonstration of compliance with the criticality
25 monitoring requirement of 10 CFR 17.24.

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1 Item 2 and 4 are subject of outstanding
2 staff request for additional information. The staff
3 is continuing to discuss Item Number 1 and 3 with the
4 applicant.

5 There are no ACRS action items for staff
6 in Chapter 12.

7 Chapter 17 addresses quality assurance
8 program during design construction and operation
9 phase, as well as the reliability assurance program
10 and maintenance rule program.

11 Sections 17.0, 17.1, 17.2, and 17.3
12 acknowledges the use of ABWR DCD.

13 STP submitted quality assurance program to
14 address COL action item, information item 17.1. STP
15 is committed to incorporate NEI 06-14A to their -- to
16 address Regulatory Guide 1.33 for operational programs
17 requirements.

18 Section 17.4S describes STP's reliability
19 assurance program for detailed design, procurement,
20 construction, and operations. The program ensures
21 that the design reliability of risk-significant
22 systems, structures, and components is maintained over
23 the life of the plant.

24 Section 17.4S addresses COL information
25 item 17.2, 17.3, 17.4.

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1 There was one ACRS action item concerning
2 DRAP SSC list to be effectively populated. The staff
3 will address this action item in a future Subcommittee
4 meeting.

5 Section 17.6S describes the maintenance
6 rule program. This section incorporates by reference
7 NEI 07-02A, generic FSAR template guidance for
8 maintenance rule, program description for plant
9 license under Part 52.

10 There are no open items in Chapter 17 SER.
11 This completes my presentation for Chapter
12 11, 12, and 17.

13 Now I will turn it over to Rocky Foster to
14 present his chapters.

15 MR. FOSTER: Good morning. I am Rocky
16 Foster. I'm the chapter PM for Chapters 13, 18, and
17 19. Since I am cleanup, I guess I have to kind of
18 make up for lost time here. So if I sweep too fast,
19 just stop me in the meantime.

20 Chapter 13.1 through 13.5 covers the areas
21 of organizational structure, training, emergency
22 preparedness, operational programs, and procedures.
23 Right now we have no open items associated with these
24 five sections. The one open item we did have on TSC
25 habitability, we have just made that a confirmatory

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1 item.

2 The remaining sections of Chapter 13 will
3 be presented to the Subcommittee at a later time. The
4 staff is going those reviews right now -- applicant's
5 fitness for duty and cyber security.

6 We will address at a future time a
7 Chapter 14 ACRS action item on cyber security ITAAC,
8 which will be given at a future time.

9 Any questions?

10 (No response.)

11 Chapter 18, Human Factors Engineering -- a
12 relatively nice chapter, put it that way. We have no
13 open items with it. It was an IBR chapter.

14 We do have questions or ACRS action items
15 on the dry wetwell pressure indications on the SPDS,
16 and also for the operators going from analog to
17 digital. We will present those at a future time.

18 Questions?

19 (No response.)

20 Okay. Chapter 19, Response to Severe
21 Accident Policy Statement. This chapter we have
22 basically two significant open items right now. One
23 deals with the breach of the main coolant reservoir,
24 which South Texas has committed in their RAI response
25 to close the three watertight doors for now. And we

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1 are also waiting for more supplemental information to
2 come in on that, mainly on hurricane risk and
3 different things that need to be updated on the FSAR.

4 The other open item deals with the shared
5 fire protection system combined with a hydrogen
6 combustion impact during shutdown item we have. South
7 Texas, again, has committed to come back, I believe on
8 July 22nd, with more supplemental information on that
9 to support the resolution toward that.

10 We have right now no ACRS action items for
11 Chapter 19.

12 CHAIRMAN ABDEL-KHALIK: Thank you.

13 MR. FOSTER: I will turn it over to George
14 Wunder.

15 MR. WUNDER: Just as a means of summing
16 up, there are still several open items associated with
17 our SER, but they can be accounted for by a relatively
18 few number of technical issues, which we still have
19 yet to resolve. Those are the downstream fuel effects
20 on which we will be making a presentation when we
21 return with our SER with no open items.

22 The P/T limits -- on this, we are really
23 just waiting for information. We don't anticipate
24 anything out of the ordinary, and this should be
25 nothing that the staff hasn't seen before.

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1 We have an open item on the setpoint
2 methodology which we discussed, and that we are still
3 trying to resolve.

4 In the Chapter 14 presentation, we talked
5 about flow-induced vibrations. This is a Chapter 3
6 issue, and you will get a full presentation on this
7 when we bring in Chapter 3, along with a couple of
8 other items that we have identified today as being
9 appropriate to be reviewed in Chapter 3.

10 We have a couple of storage term issues in
11 Chapter 12, and of course the PRA issues in Chapter 19
12 that Rocky just talked about. And when we talk about
13 Chapter 19, that will probably be the appropriate
14 place to address Mr. Stetkar's concerns about DRAP.

15 The next bullet I've got up there says
16 chapters with no remaining technical issues. That is
17 probably not precisely true. It should probably say
18 chapters with no SER open items. As we have seen in
19 today's presentation, the Subcommittee has raised
20 several excellent questions. In pursuing those, they
21 might have tendrils that lead into some of these
22 chapters.

23 We couldn't go over these questions today,
24 because we simply didn't have the time to do them
25 justice. We culled some of them out in the chapter

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1 presentations. Maitri is keeping the official list,
2 and we look forward to discussing all of these
3 questions in detail with the Subcommittee when we
4 return with our Phase 4 SER.

5 We did want you to know, however, that we
6 have been making progress. Since we begin presenting
7 to the Subcommittee some months ago, we have resolved
8 the SER open items for -- and this should say
9 Chapters 11, 15, 17, and 18. The parts of Chapter 13
10 that have been presented thus far have no open items,
11 and also Chapter 16 has no internal open items, and
12 that is to say that the resolution of open items in
13 other chapters will close those in Chapter 16.

14 Thank you for your kind attention. This
15 concludes the staff's presentation.

16 CHAIRMAN ABDEL-KHALIK: Thank you, Mr.
17 Wunder.

18 Are there any questions for the staff?

19 (No response.)

20 Are there any questions for the applicant
21 at this time?

22 MEMBER SHACK: I just had one information
23 item. They mentioned Westinghouse was going to do the
24 analysis for the steam dryer flow-induced vibration.
25 What other BWRs have they done?

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1 MR. HEAD: The analyses that they are
2 doing were fundamentally associated with work they
3 have done on AP1000. It will be the -- you know, the
4 basis for it.

5 MEMBER SHACK: This is an acoustic model
6 now we are talking about.

7 MR. HEAD: Yes, sir. But I think, you
8 know, the detail of that discussion I would like to
9 hold off until the Chapter 3 discussion.

10 MEMBER SHACK: Okay. But that is the
11 background is work for the AP1000.

12 MR. HEAD: But between the information
13 available from Toshiba and K-6, and the modeling that
14 they have available to them, we will be able to
15 perform that work. And, like I say, the details we
16 will provide in the Chapter 3 discussion.

17 MEMBER SHACK: Thank you.

18 CHAIRMAN ABDEL-KHALIK: At this time, our
19 schedule calls for us to receive any public comments
20 that members of the public either present here or on
21 the telephone bridge line may wish to make. So let's
22 start with any members of the public who are present
23 in this room. Are there any members of the public who
24 wish to make a statement or offer comments at this
25 time?

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1 (No response.)

2 I don't see any.

3 Are there any members of the public on the
4 telephone line who wish to make a statement or offer
5 comments who are currently joining us by the telephone
6 bridge line?

7 (No response.)

8 I assume the telephone bridge line is
9 operational.

10 (Laughter.)

11 Okay. I hear none, so at this time let
12 me --

13 MEMBER SHACK: Mario had a question, I
14 think.

15 CHAIRMAN ABDEL-KHALIK: Yes.

16 MEMBER BONACA: Yes. I'm not sure about
17 it, but now STP has chosen to have an expert panel I
18 believe for this units, too, 3 and 4, right? Okay.

19 MEMBER SHACK: For the DRAP.

20 MEMBER BONACA: The DRAP. And the
21 question I'm having is that, what if a different
22 designer chooses to implement an ABWR but not to use
23 the expert panel? It gets with a different ranking,
24 and how do I -- I mean, is one a departure from the
25 other, or what -- comment on that?

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1 MR. HEAD: So the question was a different
2 plant, if they went through the list and came up with
3 a different ranking?

4 MR. FOSTER: Or a different design.

5 MR. HEAD: Or a different --

6 MEMBER BONACA: No, I'm talking about the
7 same design implemented by a different designer,
8 however. And not -- and choosing not to risk rank
9 components, but to stay with the standard process for
10 assessing safety-related components.

11 MR. HEAD: Are you talking DRAP at this
12 point or --

13 MEMBER BONACA: Yes.

14 MR. HEAD: -- 50.69? It sounded like
15 maybe even --

16 MEMBER BONACA: DRAP.

17 MR. HEAD: You're talking DRAP.

18 MEMBER BONACA: Right.

19 MR. HEAD: Well, that other designer would
20 still have the DRAP obligations.

21 MEMBER BONACA: All right.

22 MR. HEAD: They would still have to go
23 through the process. And as they went through their
24 specific design, site-specific features, if they
25 encountered equipment that, you know, needed to be

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1 addressed appropriately in that process, they would
2 have to define that.

3 MR. WUNDER: We have Todd Hilsmeier
4 sitting here. If you could please repeat the question
5 -- I think he didn't quite hear it -- he may be able
6 to shed some light on it.

7 MEMBER BONACA: I'm sorry. I didn't hear
8 you.

9 MEMBER SHACK: Just repeat the question.

10 MEMBER BONACA: Yes. The question I had,
11 again, has to do with the expert panel is a choice
12 that STP chooses to rank components, okay, and which
13 is a different ranking from what normally is being
14 used by, you know, other designers.

15 The question I'm having is that what
16 happens if Designer Y decides to build the plant using
17 the same standard design, but not to rank the
18 components by -- on a risk basis but on a traditional
19 basis, how do I treat that?

20 MR. HEAD: Well, I think our own panel
21 will be using information that is not explicitly risk
22 ranked or risk based. It will be, you know, based on
23 experience, and, you know, much like the process that,
24 you know, in my mind we have used on 1 and 2 where you
25 -- if it's not modeled, and yet we feel like it

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1 deserves, you know, more attention, then that can be
2 one of the logical outcomes.

3 As I sense the question, though, I believe
4 we could wrap this into our -- the followup item that
5 we are going to have on DRAP, you know, later this
6 fall, because, I mean, I think as a process question -
7 - you are asking a process question, and we will be
8 able to compare and contrast, you know, at that time.

9 MEMBER STETKAR: I think we are not done
10 on -- you know, we kind of went through it, because of
11 the time here, quickly on DRAP. And I don't want to
12 push it down to as much kind of a no-nevermind as it
13 has been presented this morning, primarily because
14 this is an R-COLA. And the current -- the only thing
15 that the PRA is really used for in this part of the
16 licensing process is indeed to populate the DRAP list.

17 As an input to that process, there is also an expert
18 opinion or expert panel.

19 Now, the current DRAP list is based on
20 input from a PRA that everyone, including the
21 applicant, agrees is inadequate. It is out of date.
22 It doesn't even model the design that is being
23 licensed. It does not model the condensate and
24 feedwater system and other parts of the design
25 correctly.

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1 So, therefore, as a basis for an R-COLA
2 DRAP, it is not at all clear what technical basis we
3 have in terms of risk input from a tool, because that
4 tool, everyone admits, is out of date and inadequate
5 and does not even model the design that is being
6 licensed in this COL.

7 And that is a fundamental design, because
8 the problem is that a subsequent S-COLA applicant
9 could, therefore, by reference, use this list --

10 MR. FOSTER: Well, they would --

11 MEMBER STETKAR: -- as a basis --

12 MR. FOSTER: The final list, not just this
13 list right now, but the final list that will be --

14 MEMBER STETKAR: The final list after the
15 COL is issued?

16 MR. FOSTER: It could. They don't have
17 to.

18 MEMBER STETKAR: You don't have to.

19 MR. HILSMEIER: I would like to say a few
20 words. My name is Todd Hilmeier with NRO. The need
21 for DRAP review -- if S-COLs did reference the R-COL,
22 well, the R-COL FSAR does contain a methodology to
23 update the list of -- the DRAP list. And so if an
24 S-COL references an R-COL, they would also be required
25 to update the list in the DCD.

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1 And the methodology described in the FSAR
2 for updating the DRAP list, PRA is just one tool. We
3 all acknowledge that the DCD is 15 years old. And the
4 methodology used to update the list would incorporate
5 expert panel, but also a deterministic technique,
6 which they describe in detail. And I'm confident that
7 would catch -- it should compensate for the
8 limitations of the DCD PRA.

9 Also, in the plant-specific PRAs developed
10 for like the operation phase, it identifies any new
11 SSCs. They would go into the RAP. And those new SSCs
12 would need to be ensured to meet the quality assurance
13 requirements.

14 MEMBER STETKAR: That is for South Texas,
15 but it would not --

16 MR. HILSMEIER: Right.

17 MEMBER STETKAR: -- necessarily have any
18 implication on any future S-COLA applicant. They
19 would essentially have to go through the whole process
20 again. They would have to replicate the South Texas
21 activities.

22 MR. HILSMEIER: Right. They would need to
23 update the list using the methodology that South Texas
24 described.

25 MEMBER SHACK: But, I mean, in any case

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1 they would have to do that, because there could be
2 some site-specific items.

3 MEMBER STETKAR: There could be some site-
4 specific, but there are in fact --

5 MEMBER SHACK: Designs.

6 MEMBER STETKAR: -- licensed design issues
7 that are being licensed as part of the COL that in
8 principle could be on that list.

9 CHAIRMAN ABDEL-KHALIK: We will follow up
10 on this item at a future meeting, and, therefore, all
11 of these issues will be addressed.

12 Mr. Sieber?

13 MEMBER SIEBER: I have a feeling that
14 there is a -- sort of a difference between the
15 question that Mario asked and the question that John
16 asked. I think Mario's question is -- reaches more to
17 the fundamentals of this. And, of course, South Texas
18 Unit 1 and 2 was the pioneer in risk-informing the Q
19 list, which is the old-fashioned way to designate
20 safety-related components. And they used in that
21 process PRA risk factors plus an expert panel, and I
22 think that that is where the DRAP list comes from.

23 Now, granted, the current DRAP list does
24 not reflect the plant, needs to be updated, but the
25 question of process, which goes to Mario's question, I

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1 think has some establishment behind it. And they have
2 already done this at one time on Units 1 and 2.

3 Is that correct?

4 MR. HEAD: Yes, we have, and that's why I
5 think maybe there is some confusion on -- well, maybe
6 even my response, but I say I think the open item --
7 the followup item is a great place I think to address
8 all of this, both our process and the future.

9 If I could, I'd just like to note that I
10 don't believe our PRA is inadequate for the process
11 that we are using at this point in time. It is
12 clearly not up to date, but -- and we are obviously,
13 you know, embarking upon -- we're getting a more
14 robust current vintage PRA. But I believe for the --
15 for what we're challenging it to do at this point in
16 time, in the construction phase of the project, it is
17 fulfilling its -- it is a useful tool.

18 MEMBER STETKAR: Scott, as a follow up,
19 you know, I dwelt on the condensate booster pumps,
20 because if I'm operating a plant, their equipment that
21 I know about, your PRA does not include the condensate
22 booster pumps.

23 MR. HEAD: I understand.

24 MEMBER STETKAR: The condensate -- neither
25 the condensate pumps nor the condensate booster pumps

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1 show up at all on your DRAP list, although somebody
2 added the feedwater pumps, because they thought about
3 them. So I will just leave it there.

4 And I think on the followup meeting it --
5 we are going to have a useful interchange.

6 MR. HEAD: And I think that discussion and
7 the use of the expert panel and our background that we
8 have had with 50.69, you will see how that will all
9 blend together.

10 Thank you for that opportunity to --

11 MEMBER STETKAR: Thanks.

12 CHAIRMAN ABDEL-KHALIK: At this time, I
13 would like to thank the staff and the applicant for a
14 very informative and timely presentation.

15 Thank you.

16 At this time, we are scheduled to take a
17 break. We will reconvene at 10:45.

18 (Whereupon, the proceedings in the foregoing matter
19 went off the record at 10:30 a.m. and went
20 back on the record at 10:44 a.m.)

21 CHAIRMAN ABDEL-KHALIK: We're back in
22 session. At this time we will look at Item 3 on the
23 agenda Draft Final Reg. Guide 3.74 for fuel cycle
24 facility change processes and Dr. Powers will lead us
25 through that discussion.

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1 Dr. Powers?

2 MEMBER POWERS: The committee is about to
3 embark on a review of the MOX fuel fabrication
4 facility. I think we do that in September. Nuclear
5 fuel cycle facilities, of course, are different than
6 reactors. They have a different set of regulations.
7 They still have the same general safety requirement,
8 that is, that they provide adequate protection and
9 they still operate under a defense-in-depth safety
10 philosophy. They still make some attempt to migrate
11 toward risk-informed, performance-based regulation,
12 but they still have differences.

13 A lot of stuff that we're going to be
14 doing today is to expose the members of the committee
15 to various items that will elucidate some of the
16 differences in nuclear facilities versus nuclear
17 reactors.

18 The one we're going to start with today,
19 in fact, involves how you change nuclear fuel cycle
20 facilities and when you do and do not require prior
21 approval from the NRC for making those changes. It's
22 somewhat akin to our 50.59 process, but it's for
23 nuclear fuel cycle facilities. It's interesting
24 because you do automatically get into some of the
25 safety philosophy and structures. Again, this is by

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1 requirement of the regulations.

2 These facilities are constructed with a
3 defense-in-depth philosophy. The definition of that
4 defense-in-depth philosophy, in contrast to reactors,
5 is actually spelled out in the regulations and is
6 somewhat of a multiple-barrier defense. You can
7 quibble with the definitions.

8 But the Reg. Guide that we're looking at
9 today is, in fact, as the title says, their guidance
10 for when you make changes and the question, of course,
11 is when do you need prior approval to that.

12 I see it as an opportunity more for us to
13 understand how fuel cycle facilities differ from
14 reactors and their regulatory structure. And as with
15 all of these things, as with 50.59, there are huge
16 difficulties with definitions and things like that.
17 We'll undoubtedly get to struggle a little bit with
18 that. But myself, I'm more interested in the
19 philosophical bases for when is the facility providing
20 adequate protection and has it, indeed, preserved
21 defense-in-depth in these processes.

22 And with that --

23 MEMBER RAY: Dana, may I ask a question of
24 you?

25 MEMBER POWERS: Sure.

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1 MEMBER RAY: Is this the same as in power
2 reactors with respect to security matters? That is to
3 say, there is a regime that handles security issues
4 that's apart from what's talked about here or not?
5 I'm thinking of changes that may affect the security
6 of the fuel cycle facility.

7 MEMBER POWERS: This particular Reg. Guide
8 should be applicable to all, but indeed there's a
9 separate, I mean all facilities have somewhat distinct
10 security aspects.

11 MEMBER RAY: Right.

12 MEMBER POWERS: I'm more interested in the
13 safety than the security. It's a fair domain for you
14 to ask the speaker on that subject.

15 MEMBER RAY: Well, I don't want to get
16 into anything on security. I just wanted to know that
17 programs would address changes that might affect
18 security, that's all.

19 MEMBER POWERS: You're on.

20 MR. CAMPBELL: My name is Larry Campbell.
21 On June 21st of this year, I became the new Branch
22 Chief for the Mixed Oxide --

23 MEMBER POWERS: Was there a crime that you
24 committed that merited me as punishment?

25 (Laughter.)

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1 MR. CAMPBELL: I think I've seen the cycle
2 in NMSS. I was on the Yucca Mountain project for
3 several years. I was recently on Spent Fuel Storage
4 and Transportation for the past six years. And
5 management thought it was time for a change. So I'm
6 really looking forward --

7 MEMBER POWERS: They may be trying to tell
8 you something.

9 MR. CAMPBELL: They just may be. Perhaps
10 the next move is out.

11 But we really appreciate the opportunity
12 to present a discussion today on Reg. Guide 3.74.

13 MEMBER POWERS: Now he's beginning to lie
14 to us already.

15 MR. CAMPBELL: Seriously, so we look
16 forward to the discussions today and because I'm
17 fairly new here, I want to defer to Kevin Morrissey, a
18 Project Manager. He'll be making a presentation and
19 we have Dennis Damon who is their senior level advisor
20 in the risk area. We're not really going to go into
21 comparing an ISA to a PRA. That's later on in the
22 year. But --

23 MEMBER POWERS: We'll get to that in
24 plenty of time here. Let's focus on this.

25 MR. CAMPBELL: With that, Kevin will make

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1 the presentation of our guidance document here.

2 MR. MORRISSEY: Thank you. Just for the
3 record, I spent 28 years in industry working on
4 reactors. So I certainly understand 50.59. I've --

5 MEMBER POWERS: You do?

6 (Laughter.)

7 MR. MORRISSEY: As well as you can.

8 MEMBER POWERS: Oh, okay.

9 MR. MORRISSEY: From a licensee point of
10 view. And I understand that process. I'm somewhat
11 new to the fuel cycle world in the NSC as a matter of
12 fact. So I'm learning.

13 And I would have to say that working in
14 fuel cycle is definitely different. It's a different
15 land. It's got a different philosophy. You try to
16 translate between the reactor world and the fuel cycle
17 world and it falls apart.

18 The best way you could probably think
19 about it is not trying to make a valid comparison with
20 reactors. That's just not good.

21 MEMBER POWERS: That's useful insight --

22 MR. MORRISSEY: It's like when you learn
23 French. Should you learn French by the livre or the
24 book? Or if you're learning the metric systems, do
25 you say well, that's a centimeter, that's like 2.54

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1 inches. No, a centimeter is something about this big,
2 you know?

3 (Laughter.)

4 You have these preconceived notions and
5 it's difficult to get rid of those. I've been here
6 six years in fuel cycle. I think I'm beginning to
7 understand.

8 MEMBER POWERS: Well, of course, one of
9 the premiere differences which you have to recognize
10 right out of the box is where reactors, where they
11 fall into a couple of groups show kind of like
12 processes, can all be quite different, quite
13 differently configured. It automatically creates a
14 difficulty for you.

15 MR. MORRISSEY: You're probably familiar
16 with 50.59. Let's talk about 70.72. 70.72 is
17 basically the change process in the fuel cycle side of
18 the Agency here. And 70.72 basically has two main
19 parts. The configuration management system, and
20 basically this is a requirement that you must
21 establish and maintain a program to change control.
22 You would ask this question too about security. And I
23 hate to quote, but let me read for a second here.

24 70.71(a), "the licensee shall establish a
25 configuration management system to evaluate,

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1 implement, and track each change to the site,
2 structures, processes, systems, equipment, components,
3 computer programs and activities of personnel."

4 So basically configuration management is
5 meant to track changes to everything. It's not we'll
6 decide what's important and then we'll put in a
7 configuration management. Everything goes into
8 configuration management and then we'll decide what's
9 important.

10 The second part of 70.72 is basically the
11 change process. And this is similar to 50.59. This
12 is where you evaluate the change, the technical basis
13 of the change, the safety impact of the change,
14 changes to the safety program.

15 Now in the fuel cycle world, the safety
16 program is basically defined as the ISA summary,
17 supporting documentation for the ISA which is
18 basically all the references, calculations, and
19 anything that would support the ISA summary in its
20 management measures. And measurement measures are
21 those things like surveillance and maintenance and
22 calibration and training and audits, which are meant
23 to be applied to IROFS safety controls for the purpose
24 of making them available and reliable. It's supposed
25 to be there, you know.

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1 We try to avoid quantitative discussions
2 here, but it's there to basically enhance that the
3 failure rate is as low as possible by doing
4 maintenance and having training on how it works and
5 that kind of stuff. So when we talk about management
6 measures, we're talking about management measures as
7 they apply to IROFS.

8 MEMBER SIEBER: But the change process is
9 more qualitative than quantitative.

10 MR. MORRISSEY: The change process like
11 the whole nature of subpart H in the ISA process is
12 qualitative.

13 MEMBER SIEBER: And that's because the
14 danger to the public from reactor systems where
15 there's lots of energy and lots of dispersion requires
16 a quantitative approach, whereas a fuel cycle facility
17 does not have large quantities of fission products,
18 but does represent a danger to workers and people
19 close by the facility.

20 MR. MORRISSEY: When we talk about
21 accidents, the majority of accidents are basically
22 accidents which are local.

23 MEMBER SIEBER: Right.

24 MR. MORRISSEY: The facility workers, the
25 people on site. The amount of major public affecting

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1 accidents are very small. It's not like a reactor
2 which has a big source.

3 MEMBER SIEBER: And that includes even a
4 inadvertent criticality.

5 MEMBER BLEY: Kevin?

6 MR. MORRISSEY: Yes.

7 MEMBER BLEY: We had gone through some
8 facility design considerations where also the
9 requirement is qualitative, not quantitative, but
10 there we saw that many applicants apparently do a
11 pretty full quantitative analysis. Is that true in
12 the change area as well, even though you don't require
13 it? Do they tend to do a quantitative analysis to
14 support what they're doing?

15 MR. MORRISSEY: That's an interesting
16 question because they have an approved methodology.
17 And generally, that approved methodology, because -- I
18 hate to say it's all that's required -- but it's all
19 that's required is you provide a qualitative
20 measuring. That doesn't mean you can't go off on the
21 side and calculate failure rates, you can't go off on
22 the side and do a quantitative analysis, or you can't
23 go off on the side when evaluating things, even like
24 changes. And you eventually -- or a PRA. But you
25 wouldn't put in your license that you're committed to

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1 do it, if that make sense.

2 So a lot of licensees sort of hedge their
3 bet by saying the majority of methodologies in ISA
4 space are qualitative and they do what's called
5 scoring which scoring is like a beauty contest or
6 figure skating, 8, 9. They give certain scores to
7 controllers or the possibility of a failure of a
8 control or the possibility of some even call it the
9 success of a control. And they sit down and they
10 score an accident.

11 Now sometimes they off on the side they
12 say well, the probability of failure of this
13 administrative control may be 10^{-2} or the probability
14 of failure of this passive engineered controls may be
15 10^{-3} . And they will use that to strengthen their
16 argument, but not like officially on the books as
17 their argument, if that makes any sense.

18 MEMBER BLEY: So many of them actually do
19 quantitative work, but they don't submit it as their
20 basis.

21 MR. MORRISSEY: That's right. And we have
22 licensees that do entries and do purely quantitative
23 ones. We have ones that do semi-quantitative ones.
24 They will say, the numbers look a lot like
25 quantitative ones, but they call them scores. They

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1 call them -2s instead of 10^{-2} .

2 But it's the same. I mean you can use
3 like this parallel logic in a quantitative way to
4 evaluate whether the scoring makes sense.

5 VICE CHAIRMAN ARMIJO: Kevin, there are
6 different kinds of fuel cycle facilities, the fuel
7 factory manufactures fuel or a conversion facility
8 will be different. Do you see differences in the
9 approaches taken by these different types of fuel
10 cycle facilities?

11 MR. MORRISSEY: I suppose the answer to
12 that --

13 VICE CHAIRMAN ARMIJO: Let's say an
14 enrichment facility. That's what I'm thinking. Let's
15 say an enrichment facility.

16 MR. MORRISSEY: Different facilities have
17 different hazards. For instance, enrichment
18 facilities, their main hazard is the fact that they
19 have UF6 in the cylinder which if released gives off
20 hydrofluoric acid. I mean that's the main -- they
21 have criticality concerns and stuff, but basically
22 their types of accidents are very selective to the
23 process they do.

24 VICE CHAIRMAN ARMIJO: I guess I'm getting
25 to the point is my background is in fuel which is

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1 including manufacturing. And basically in a fuel
2 factory, there are batch processes.

3 MR. MORRISSEY: Right.

4 VICE CHAIRMAN ARMIJO: Not much continuous
5 process because there's enrichment changes and
6 everything else. They handle UF6.

7 MR. MORRISSEY: Right.

8 VICE CHAIRMAN ARMIJO: In the gaseous
9 form. An enrichment facility seems to me something a
10 little bit closer to the continuous processes that
11 might be in a reactor operation. I'm just wondering
12 if there are differences in approaches.

13 MR. MORRISSEY: In terms of the ISA
14 methodology, there's a different approach in every
15 single facility.

16 VICE CHAIRMAN ARMIJO: Got it.

17 MR. MORRISSEY: If you sent ten kids off
18 to buy ice cream, they will come back with ten
19 flavors. Everybody took a unique approach which makes
20 -- and I think Dr. Powers said this, use different
21 definitions of terms, defined things differently.

22 And I'll talk about this a little bit
23 later, how one thinks, sees black, one sees gray, one
24 sees white, but they're the same term. And because of
25 that writing guidance, the one size fits all guidance,

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1 everybody is doing it differently becomes a challenge.

2 We can take this up with my wife who is --

3 MEMBER POWERS: Well, see you've gone
4 through for six years what we're about to go through,
5 so it helps to get your insight.

6 MR. MORRISSEY: Well, my insight might be
7 a little different.

8 So once again what is 70.72 in the change
9 process? It's the safety program. And the safety
10 program basically is the ISA, is the ISA and the ISA
11 process. What else is 70.72? It defines the need for
12 prior NRC approval, what type of changes you need to
13 make, and when we want to say come see us before
14 implementing these type of changes.

15 70.72 also contains the documentation of
16 requirements and the documentation, and this actually
17 you'll see that -- to be honest, as blurry as
18 documentation is, it's a big part of the change
19 process in terms of especially when people use
20 engineering judgment. You know, if you were doing a
21 50.59 evaluation and the licensee sent something in
22 that said "this change does not increase the
23 probability of a new type of accident. This does not
24 significantly increase margin" or something and that's
25 all they said, to parrot back what the regulations say

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1 isn't justification.

2 So a lot of the documentation we'll talk
3 about this quickly later is really about show your
4 work. Provide your reason. Provide your basis for
5 the determinations you're making in your evaluation.

6 The guide overview. The main focus of the
7 guide is really prior approval, when licensees need to
8 come in and get prior approval for implementing
9 changes. It's sort of an overall look at the guidance
10 and basically the whole problem about licensees coming
11 in for prior approval. Today, we basically have found
12 no significant problems or noncompliances. They're
13 meeting the requirements.

14 In general, licensees have taken a
15 conservative approach. If they're thinking about
16 changing something and it kind of looks like they
17 might need fire proofing, they probably will call us
18 first, consult with us. They're thinking we don't
19 have to come and we're thinking you ought to.
20 Generally, if things are on the fence, they basically
21 would work with the staff to determine whether or not
22 they should come in. And in general, their judgment
23 has been conservative. It hasn't resulted like in a
24 problem, oh my God, all these people are doing these
25 things without coming to see us and they should. That

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1 really isn't the case.

2 And in terms to the guide itself, there
3 are no major controversial issues. In general, the
4 stakeholders have been part of the guide development
5 process and have general consensus as much as
6 stakeholders.

7 Reasons for the guide. One of the
8 requirements of part 70 is that licensees report on an
9 annual basis changes made to the facility and this is
10 basically all changes made to the facility. And
11 basically, the ISA process was implemented in 2005
12 when licensees were required to basically perform an
13 ISA and submit it to the Commission.

14 MEMBER RYAN: How often do you have
15 contact with a typical licensee in this category? Is
16 it just this annual review?

17 MR. MORRISSEY: The annual review of
18 changes is basically -- they're required to yearly
19 send in a description of a summary of changes from the
20 previous year. And these are the changes, obviously,
21 that didn't require prior approval or amendment.

22 When we first did this process and I have
23 some sort of interesting statistics, when we first
24 asked -- the licensees were required to send in a
25 summary of changes, five out of the six facilities

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1 that sent them in were rejected. Three out of the
2 six, only three out of the six provided a reason for
3 the change. Two out of the six provided facility
4 changes and the requirement is that you provide all
5 changes. And the reason why it's all changes is maybe
6 there are changes which you didn't think affected the
7 safety basis of the thing. We're going to think you
8 may have. And only two of the six provided a
9 description of the change.

10 So we went wow, this isn't -- this doesn't
11 meet our expectations. So one of the reasons for the
12 guide was prompted by basically the data that we're
13 receiving from licensees on an annual basis.

14 Another reason was basically inspections.
15 We're getting inquiries from the inspection staff who
16 have done inspections on basically the change process
17 or configuration control. And they basically said
18 it's a mixed bag of people with all sorts of different
19 levels of documentation, what's acceptable. And at
20 the time we had no guidance to at least point them in
21 some general direction.

22 The other reason for the guide is kind of
23 interesting. It comes from the part 70 rulemaking.
24 Ten years ago, in September 2000, as part of the
25 Federal Register notice, and comments on the rule

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1 itself, one commenter made a comment about the
2 criteria used for prior approval. And the staff
3 responded, "The NRC staff will develop a guidance
4 document with input from stakeholders to describe an
5 acceptable change process that meets the requirements
6 of the final rule in more detail." So ten years
7 later, we're fulfilling the prophecy.

8 (Laughter.)

9 CHAIRMAN ABDEL-KHALIK: The purpose of the
10 annual review, that is the annual summary of changes
11 that is submitted, is that just documentation or is it
12 for you to evaluate all the changes in an integrated
13 fashion?

14 MR. MORRISSEY: That's right. It's to
15 evaluate all the changes. Because as I first opened
16 up, basically everything is covered by configuration
17 management, activities, all the physical structures.
18 The activities, how you do a process, procedures, all
19 that stuff is part of configuration management.

20 MR. CAMPBELL: If I might add, even though
21 I've just been here a couple of weeks, a couple of the
22 staff, they were asked to review some of these changes
23 and the project manager went through -- there were
24 hundreds of changes and he actually took a sample. So
25 I know in one instance, we didn't review and look at

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1 every -- I think it was 200 plus changes. The project
2 manager did a sample and the sample he selected was
3 sent out to staff. So I don't want to -- headquarters
4 staff as well.

5 I know headquarters, we were asked to get
6 involved. So I would say it's like any other
7 inspection or review. Because of resources, you may
8 have to sample. And I know --

9 CHAIRMAN ABDEL-KHALIK: I guess the reason
10 for my question, presumably when an applicant, when a
11 licensee makes a change and makes the determination
12 that it doesn't require prior NRC approval, in their
13 evaluation they take into account all prior changes
14 they have made to the facility, whether or not these
15 changes had required prior NRC approval.

16 I'm just wondering if this annual summary
17 of all the changes provides you with an opportunity to
18 determine the integrated effect of all the changes
19 that had been made?

20 MR. MORRISSEY: That is a good question.
21 Integrated effect of all the changes that had been
22 made --

23 CHAIRMAN ABDEL-KHALIK: In the prior year,
24 yes.

25 MR. CAMPBELL: I know in part 50, the

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1 licensees are required to submit their updates as
2 well. And I can't speak for part 70 because I haven't
3 been here that long, but when I was on the part 50
4 side, I'm unaware that they did an integrated review,
5 as you asked. I can't speak to part 70. Dennis, do
6 you know?

7 MR. DAMON: No, there's not an attempt to
8 do a systematic or especially on a quantitative
9 assessment of what all the impacts are, but I think
10 particularly the project managers, it's not that they
11 just select out. In order to select out, they've
12 actually read what all the changes are and they're
13 looking in detail at some of them.

14 It's really the project manager level that
15 you get that kind of a systematic overview look at
16 things, but it's not quantitative or integrated. He's
17 looking for things that look like they're important,
18 you know.

19 CHAIRMAN ABDEL-KHALIK: I guess again the
20 point I'm trying to make is that when an applicant or
21 a licensee makes a change and makes the determination
22 that hey, this is -- you know, the impact is
23 relatively small. It does not require prior NRC
24 approval. That determination is made in light of the
25 licensee's evaluation of the current state of the

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1 plant, including all changes that had been made. And
2 they come back to you at the end of the year with a
3 list of all the changes that have been made,
4 presumably without your prior approval. And is this
5 an opportunity for you to look back and say yes, that
6 determination made sense.

7 MR. DAMON: Well, there's another piece of
8 information here. The review of annual changes, as
9 Kevin says, this is all changes. There's another
10 document that is submitted annually and updated and
11 that's the ISA summary. The ISA summary contains a
12 list of all accident sequences and all items relied on
13 for safety. So the reviewers can look at that and
14 make a determination as to whether something important
15 has been changed that has actually affected the ISA's
16 evaluation of things. So that if they've changed an
17 IROFS, that change should show up in that list. And
18 that's key because IROFS are those things that they
19 have selected as yes, this is important to safety.
20 That's the meaning that I rely on for safety. So
21 those changes are automatically looked at carefully.
22 And if they feel they need review, they can look at
23 them.

24 VICE CHAIRMAN ARMIJO: I kind of have a
25 concern with the word "all", "all changes", because in

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1 a fuel factory there's incredible number of changes
2 and very strong configuration management and change
3 control processes required just to deliver a high-
4 quality product. And changes are the biggest threat
5 to high quality that you can imagine. But some of
6 them are truly trivial, you know, the shape of a
7 pellet dye is a change and people change those things.

8 I'm just wondering how do you select from
9 that list of annual changes? Is it a spot check? Is
10 it categorized like these are administrative changes,
11 these are personnel changes, these are hardware
12 changes? It seems like a lot of work that doesn't
13 lead to much improvement in safety.

14 MR. MORRISSEY: It's really the experience
15 of the project manager. Each facility, some of them
16 submit lists of five or six hundred changes. Some
17 provide a decent description of the change. When you
18 see things like oh, this changes a criticality
19 control, blah, blah, you go oh, that got my attention.

20 You know, it's like -- so you look -- but some of
21 them are subtle and why would they get your attention
22 and not get their attention. It's not a perfect
23 process.

24 MEMBER RYAN: One of the things, Kevin,
25 that I think is important to recognize is there are no

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1 on-site inspectors at these facilities. So you're
2 really dealing with an ad hoc look --

3 MR. MORRISSEY: We have two CAT 1
4 facilities that have --

5 MEMBER RYAN: That have on-site, two.

6 MR. MORRISSEY: And MOX has an on-site.

7 MEMBER RYAN: But for the most part, they
8 don't. So there's this element of you're relying on
9 self-reporting to guide your inspection program and
10 then go out and verify and confirm and do all those
11 kind of things, in a periodic way as opposed to a kind
12 of more continuous fashion. And I would guess you get
13 a range of understanding for what you're looking for
14 from the range of the complexity of the facilities as
15 you mentioned earlier.

16 MR. MORRISSEY: Right.

17 MEMBER RYAN: So it makes sense as to what
18 you're doing. I know about those kind of facilities
19 having worked in one or two and it's really a matter
20 of judgment of the licensees and recognizing what you
21 said earlier.

22 I think, Dennis, you alluded to it. They
23 can tell you kind of what they view is important to
24 safety and certainly repainting the parking lot lines
25 is not on the agenda, but if we add capacity to double

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1 the amount of material throughput with the facility,
2 that could be one that catches everybody's attention
3 and how did you deal with that from the system's point
4 of view.

5 So it's a tough -- there's such a wide
6 range.

7 VICE CHAIRMAN ARMIJO: Something like that
8 would likely come to the staff.

9 MR. MORRISSEY: Right.

10 VICE CHAIRMAN ARMIJO: Something of that
11 magnitude, but there's so many smaller changes. The
12 quality control organization now reports to this guy
13 as opposed to that guy. This manager was removed for
14 cause. You get into all of that. You get that?

15 MR. MORRISSEY: We get every change. As a
16 matter of fact, at the public meeting and this is
17 before my time here, when they were doing rulemaking
18 in 2000, a member of the -- one of the stakeholders,
19 one of the licensees got up and said what if I change
20 a bush and the staff replied, it doesn't matter what
21 you change, your evaluation of changing that bush
22 should be very easy. This bush, I changed this bush.
23 It has no impact on safety.

24 VICE CHAIRMAN ARMIJO: Kevin, that's where
25 I have a real problem with the word "all" and it's a

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1 huge administrative burden to the licensee and to the
2 staff and it really doesn't impact safety. And I'm
3 just wondering in this guidance is there any
4 opportunity to make it really useful from a safety
5 standpoint as opposed to tell me everything that's
6 changed. I don't care whether the bushes have
7 changed. I may not care about a whole bunch of stuff.

8 MR. MORRISSEY: The staff doesn't care.
9 As it turns out just about everything which is changed
10 is trapped in this configuration management program.
11 So at the end of the year they would go through and
12 they would wade through trying to figure out what was
13 the important stuff and send it to us. And it just
14 got to the point that just from a -- if you're going
15 to track these every year and you hit print at the end
16 of the year and send it to us, if that's easier for
17 you, that's fine. We'll sort through it.

18 MEMBER RYAN: I guess what you're saying
19 is in some cases maybe these wounds that Sam is
20 talking about are self-inflicted.

21 MR. MORRISSEY: Right, they are somewhat
22 self-inflicted.

23 VICE CHAIRMAN ARMIJO: Well, no. If it
24 says all, I think they're obligated to report all.

25 MR. MORRISSEY: Right, they are obligated.

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1 VICE CHAIRMAN ARMIJO: They don't have a
2 choice to submit trivia, really.

3 MEMBER BROWN: The rule says track each
4 change to the site which is the site the facility. Is
5 the site the external, the parking lot, and stuff like
6 that?

7 MR. MORRISSEY: It's everything.

8 MEMBER BROWN: So once you are trapped
9 with that rule, it's almost -- I totally sympathize.

10 MR. MORRISSEY: It's easier to include all
11 than it is to try to figure out what you can exclude.
12 I mean that's basically the way it works.

13 MR. CAMPBELL: I would be careful about
14 the word "all". If you had an engineering manager
15 reporting to the engineering manager you had three
16 division managers and you decided to replace one of
17 those managers, that's not within the scope of this
18 change. It says "activities of personnel." It
19 doesn't say change in personnel, but if a plant
20 manager was replaced because of wrongdoing or
21 something like that, we would know about that. I
22 think there's some judgment that's exercised both on
23 the part of the NRC and the licensees here.

24 VICE CHAIRMAN ARMIJO: I will hold my
25 peace.

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1 MR. MORRISSEY: Okay. The guide
2 preparation. Basically, the staff, four members of
3 the staff, fuel cycle staff and four members of --
4 four licensees and one member of the region, one
5 inspector, got together in a task force kind of way
6 and the purpose of this task force was for the staff,
7 basically, to understand how licensees were doing
8 things. How were they implementing the thing? How
9 were the interpreting certain definitions? We had
10 seen from the end of a summary reviews we knew what
11 kind of documentation they had.

12 So is the question before you write
13 guidance, you might as well at least understand how
14 everybody does it. We can write guidance and this is
15 how you think you do it, but if nobody is doing it
16 like that, it doesn't make sense.

17 So that was a collaborative -- that was a
18 joint effort between the staff and licensees to at
19 least discuss the implementation of the configuration
20 management program, the interpretation of criteria.
21 When would you come for pre-approval? What process do
22 you have to determine when you need to come in for
23 pre-approval? And the type of evaluations for prior
24 approval that they were doing.

25 VICE CHAIRMAN ARMIJO: Kevin, what kind of

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1 licensees were on this task force from what kind of --

2 MR. MORRISSEY: We basically had one from
3 an enrichment facility. We had one from a CAT 1
4 facility. We had one from a plain old CAT 3 fuel
5 fabrication facility. And we had another one from a
6 new facility who is basically going through the
7 licensing process for enrichment.

8 VICE CHAIRMAN ARMIJO: Did you have like a
9 commercial fabricator, a Westinghouse come on?

10 MR. MORRISSEY: We had Westinghouse, LES,
11 USEC, and NFS. I was trying to protect the names of
12 the innocent.

13 VICE CHAIRMAN ARMIJO: It's okay. I just
14 wanted to make sure.

15 MR. MORRISSEY: So the guide itself is
16 actually prepared by the staff. Even though during
17 these task force meetings, we had a number of
18 discussions about the possibility of the way things
19 could be interpreted and stuff. The licensees' role
20 was basically to provide input to the staff, because
21 the guide was prepared by the staff.

22 The guide went out for public review and
23 comments. Comments were resolved. OGC has no legal
24 objection to the guide.

25 MEMBER RYAN: Just push the microphone.

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1 There you go.

2 MR. MORRISSEY: I'm sure you can probably
3 hear me. What type of changes need to be evaluated
4 for NRC prior approval? And amazingly, this looks
5 just like the list I read before for what's required
6 by configuration management, the site, the structure,
7 process systems, components, computer program and
8 activities. So basically, once again, everything.

9 The criteria for prior approval. And this
10 is kind of like the 50.59, does that increase the
11 probability of an accident, does not result in a
12 significant increase, that kind of thing.

13 The first criteria for prior approval is
14 new types of accidents not previously described in the
15 ISA summary. Because of the multiple ways basically
16 that licensees' methodologies are basically
17 implemented, the definition for certain terms run all
18 over the ballpark. And it really depends a lot on the
19 method that a certain licensee has chosen.

20 For instance, if you're going to use fault
21 trees, the type of an accident may be some people use
22 fault trees where each -- it had one fault tree of
23 like a whole process and then for each initiating
24 event, for each initiating event, they would assume
25 that the probability of initiating some accident was

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1 one, and then they'd run the fault tree. And then
2 they'd say oh, what if this happened? So that's one
3 fault tree, hundreds of cut sets. So what's a new
4 type of accident sequence when they basically don't
5 have sequences, they have fault trees.

6 We have other people who have a general
7 type of accident, criticality in this process. And
8 this can be initiated and they'll have a list of 20
9 ways in which you could get a criticality in a certain
10 process. And another one would have the same exact
11 situation might have 20 accident sequences. So when
12 we got down to new types of accident sequences,
13 basically nobody's accident sequences looked the same.

14 So coming up with one definition didn't work. What
15 all the licensees have in common is basically their
16 hazard process.

17 Basically, the way the ISA works is you
18 determine what hazards you have in your facility and
19 this is done by basically two methods. One is what
20 if. What if when I took that sample, what if the guy
21 didn't take that sample in transferring the contents
22 from this tank which was safe geometry to that tank
23 which wasn't safe geometry? What if when he brought
24 it to the chemist to do a sample, he screwed it up?
25 What if the chemist made it right, but the material

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1 didn't work? What if the sample wasn't
2 representative? So it's a what if. Basically, it's
3 sitting around a room and finding as many ways as you
4 can to break it. How can we break this?

5 Other licensees use key words, too hot,
6 too cold, too much pressure, criticality, explosion,
7 words which basically do the same thing, spur all
8 possible ways that you could have hazards in the
9 facility.

10 So the first part of the ISA process for
11 everybody is this hazard analysis. So all licensees
12 understand basically when you have a new hazard. So
13 basically, the guidance here says instead of trying to
14 figure out what type of accident you have, if you have
15 a new hazard, you probably should come and see us.

16 The second criteria is new processes,
17 technologies, new control systems for which a licensee
18 has no prior experience. Actually, this one sort of
19 has a double hook because licensees are given a
20 license to use and possess material. Within their
21 license application which gets incorporated into their
22 license are the ways which they use material. So if
23 you were fabricating fuel and you decide you want to
24 enrich fuel as well or that you did something, you did
25 fuel fabrication by a dry process and now you want to

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1 do a wet process, you would probably have to make a
2 change to your license application as well as
3 evaluating the effects in the ISA from a safety point
4 of view.

5 So a lot of new processes, this is not one
6 of these where we're getting 100 amendments a year or
7 something.

8 VICE CHAIRMAN ARMIJO: How about upgrades
9 to old processes, existing processes, things are
10 getting obsolete, people want to change stuff, pumps.

11 MR. MORRISSEY: Yes, and this is the --
12 that comment goes with this last bullet which can be
13 evaluated at a system level. It becomes a big
14 discussion about I have this pump, I changed out this
15 pump. Before it was a Westinghouse pump, now it's a
16 General Electric pump. Is that a new -- I'm sorry, is
17 that a new technology or is that a different type of
18 control system? Those aren't the kind of changes
19 we're looking for.

20 If you have the -- the world is changing .
21 If you had an analog component that you put in in 1970
22 and now you're going to replace it with some digital
23 component, which basically something which performs
24 basically the same function, it's not a new
25 technology.

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1 A new technology is more we enrich fuel by
2 centrifuges. Now we want to enrich fuel by laser.
3 That's a new -- that would be --

4 VICE CHAIRMAN ARMIJO: That's easy.

5 MR. MORRISSEY: That's easy, right? So
6 there's no perfect -- I can't make you a list of all
7 the things that are new technology and aren't.

8 MEMBER POWERS: Actually in the Reg. Guide
9 you did a pretty good job in defining what are not new
10 technologies.

11 MR. MORRISSEY: Right. Thank you.

12 MEMBER BROWN: Can I ask a --

13 MR. MORRISSEY: Sure.

14 MEMBER BROWN: You seem to separate the
15 new accident sequences which is very clear when you
16 read the rule. And then you well, only if you've got
17 new hazards. And if you read the Reg. Guide it talks
18 about you've got both initiate, if I read this right,
19 this is your paragraph 2(b) under regulatory position,
20 how you say the -- let me find it. 2.1, I'm sorry,
21 2.1(a).

22 MR. MORRISSEY: Okay.

23 MEMBER BROWN: You said "prior approval
24 will be necessary if the new sequences had
25 consequences exceeding the performance requirements."

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1 That's one thing. And then you go on to say "and
2 were the results of hazards not previously associated
3 with an accident sequence in the current ISA summary."

4 That seemed to put two conditions on the new accident
5 sequence. And you seem to make that connection in
6 your comment a minute ago on bullet one.

7 I guess I don't totally understand the
8 difference here. I mean I read the rule and I read
9 the new accident sequences seem to be fairly clear.
10 And then you threw in a caveat -- then the Reg. Guide
11 throws in a caveat on hazards.

12 MR. MORRISSEY: 70.61 has certain
13 requirements of when things have to be. And these are
14 basically intake levels and doses.

15 MEMBER RYAN: The dose criteria and
16 chemical exposure and all that.

17 MR. MORRISSEY: And chemical intake. Is
18 that the right word?

19 MEMBER RYAN: Kevin, if I'm reading this
20 70.72(c) and it just has those summaries and things,
21 aren't I forced to kind of go back to whatever I did
22 to 70.61 and reevaluate my changes to see if I've
23 changed any of my responses to the 70.61 criteria?
24 That kind of addresses Sam's question because now I'm
25 talking about dose to a worker, release of significant

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1 materials, chemical exposures, intakes of uranium that
2 is significant and so forth.

3 Those are the things that seem to be
4 substantive changes and my analysis says my profile
5 hasn't changed or has changed.

6 MR. MORRISSEY: Until you cross that
7 threshold, you don't have an accident sequence.

8 MEMBER RYAN: Right.

9 MEMBER BROWN: The 70.61, the shrubs and
10 painting the parking lot --

11 MR. MORRISSEY: It's kind of saying if you
12 have something new and it crosses this threshold, then
13 you might have a new type of accident sequence.

14 MEMBER RYAN: So I guess in my mind,
15 you've got to kind of marry in the guidance that you
16 need 70.72, the new stuff, but you really ought to
17 make sure you go back and review it against 70.61 as a
18 basic criteria for are you in this risk space or not.
19 Does that make sense?

20 MR. MORRISSEY: Yes, it does. It
21 definitely -- because if you don't -- if you're not --
22 if you don't meet that criteria, you don't have an
23 accident sequence. So I guess it's kind of -- it's a
24 requirement, but it's like it's also a condition.

25 MEMBER RYAN: Sure. I guess just

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1 refreshing myself on 70.61, it seems pretty clear that
2 these are really very solidly, technical-based
3 criteria that make a lot of sense for an accident
4 sequence development point of view. I don't think
5 there's anything vague about what these requirements
6 are.

7 MR. MORRISSEY: I don't think there is.
8 There is some discussion about like intake. There is
9 some discussion on --

10 MEMBER RYAN: I'm sorry, intake you said?

11 MR. MORRISSEY: The levels of allowable
12 like uranium.

13 MEMBER RYAN: Those are minor tweaks to
14 this structure.

15 MR. MORRISSEY: There is discussions on
16 chemical exposure, other parts of the body which is an
17 intake. There was an incident at one of the
18 facilities where the guy got HF on his arm and they
19 asked him for medical care and he said I don't need
20 it, it feels fine. He went home and three hours
21 later, oh my God, it headed for his bone.

22 MEMBER POWERS: That is bad stuff.

23 MR. MORRISSEY: It was bone-seeking nasty
24 stuff and he ended up in the hospital. So it's like
25 how do you define how much gets splashed on somebody

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1 in terms of a requirement? If you hit three drops,
2 you don't have to report it, but -- so one of the
3 things they've struggled with is basically --

4 MEMBER RYAN: There is an easy answer. If
5 you have to go to the hospital --

6 (Laughter.)

7 MR. MORRISSEY: The guy refused to go to
8 the hospital.

9 MEMBER RYAN: That's an easy one.

10 MR. MORRISSEY: Once again, it's very
11 subjective, the terms that they use in part 78. So
12 when you talk about technologies of control sets, that
13 could mean a lot of different things. So it wasn't
14 unusual to see that the licensees weren't implementing
15 this change process in a very straight-forward way
16 because it's sort of like make your own sundae in
17 terms of determining how you decode these terms.

18 Now the other criteria for prior approval
19 is and this is non-equivalent. This is like a double
20 negative a little bit. Basically, in order to meet
21 what's called performance requirements which means
22 that the standards we talked about 70.61 must be
23 highly unlikely, that is the performance requirement
24 that things above a certain threshold must be highly
25 unlikely. Things above a lower threshold must be

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1 unlikely.

2 So you'll have an accident sequence where
3 basically you'll initiate some event and then you'll
4 have a number of controls which no matter how you
5 score it, add it up or determine in your best judgment
6 that this sequence of events with these controls is
7 highly unlikely.

8 Then later on, when you go to change one
9 of these things, we want to know, prior approval-wise,
10 is if these controls are needed to make the
11 demonstration that you are highly unlikely which is
12 the regulatory, the rule basically, we'd like you to
13 come in. And this one is interesting because
14 equivalent has a lot of meanings. And the guidance
15 basically says equivalent means needed to meet the
16 performance requirements. In other words, when you're
17 done, you still have to meet the rule.

18 And things you need to consider and part
19 of this is whether something is equivalent is the type
20 of accident sequence, the availability and reliability
21 of IROFS which is basically failure rates, probability
22 of failures, those type of things and the types of
23 controls.

24 If licensees say I have this engineered
25 control that does this and that and I'm going to

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1 replace it by simple administered control, they would
2 need a good explanation about why that was equipped.

3 MEMBER POWERS: In that regard, I was
4 struck by this discussion on IROFS, that the words
5 degradation of the defense-in-depth safety philosophy
6 didn't appear in the text of the Regulatory Guide.
7 Given the definition of defense-in-depth that appears
8 in the regulations, I wonder why you elected to -- the
9 words just don't appear. And particularly, offering a
10 sole IROFS or non-equivalent IROFS, it seems to me I
11 would have said and this does not degrade defense-in-
12 depth. And your example is appropriate that you
13 chose, is an appropriate example of degradation of
14 defense-in-depth where someone took an engineered
15 system and replaced it with an administrative system
16 would clearly went afoul with the definition of
17 defense-in-depth what appears in the regulation.

18 I just wondered why you didn't use that
19 language.

20 MR. MORRISSEY: I can give you my
21 perspective on defense-in-depth. In the fuel cycle in
22 your license there's a requirement for new facilities
23 and existing facilities with new processes to provide
24 a justification in their license application why --
25 how defense-in-depth is used in the design, how the

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1 design accommodates defense-in-depth in ways to
2 prevent fires and criticalities, chemical explosions,
3 radiological things.

4 So defense-in-depth there is applicable to
5 how my design, they provide this justification of how
6 this design guards against these hazards. And the
7 staff reviews that and determines whether or not that
8 justification is justified.

9 In ISA space, when licensees talk about
10 defense-in-depth, it's more I have -- I can
11 demonstrate I can make these performance requirements
12 with certain controls. Say I need two controls. I
13 have a passive control and some administrative
14 control. And I can use this to prove basically that
15 I'm safe, I meet the performance requirements.

16 I also had three other controls which I'm
17 not going to basically declare. I'm not going to call
18 these IROFS. I'm not going to declare it. I'm going
19 to argue that these additional controls provide
20 defense-in-depth in meeting the performance
21 requirements. So it's like these are the things above
22 and beyond the regulatory requirements. Does that
23 make sense?

24 MEMBER POWERS: Well, what you described
25 is how one would describe the facility safety

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1 strategy, a point in time.

2 What I'm asking is in saying when prior
3 approval is needed, suppose I change one or more of
4 those things, either those that you declared or those
5 that you did not declare, then it would clearly
6 degrade or alter your defense-in-depth and it seemed
7 to me that would be a criterion for at least looking
8 at whether you need prior approval from the NRC, given
9 that the regulation begins with a fairly elaborate
10 discussion of a contorted definition of defense-in-
11 depth. But it's their definition and unlike part 50,
12 at least they have a definition in defense-in-depth.

13 MR. MORRISSEY: I would agree that it
14 should be part of the argument, but it's not part of
15 the regulation, even though it defines -- it goes to
16 the process of defining what defense-in-depth is as a
17 design philosophy and not what you rely on.

18 One of the things about the ISA is there's
19 this requirement to meet the performance requirements,
20 these intakes and radiological limits. Some licensees
21 have taken this requirement to be anything I have as a
22 safety control, I call an IROFS. I'm going to tell
23 you about all the controls I have. These facilities
24 have thousands of safety controls. Other facilities
25 take a very minimal approach to only what's necessary.

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1 These facilities have less than a hundred of these
2 designated controls. These other people are somewhere
3 in between.

4 It's like these different philosophies on
5 -- and for some reason there's one facility said
6 everything is a safety control and some facilities say
7 oh no. I'm only going to give you the ones that I
8 have to to meet my debt.

9 MEMBER POWERS: I think what you're
10 arguing here is that in the Reg. Guide you have
11 followed fairly closely the language that appears in
12 the regulation for changes. That does not call out,
13 refer back to the introduction of the regulation about
14 defense-in-depth. And so you have not in here. So
15 really, if you want something on defense-in-depth
16 considerations to appear, it's got to appear in the
17 section of the regulations where you talk about
18 changes and when and if the regulation so did change
19 you will make the appropriate changes in the Reg.
20 Guide. I think that's what you're saying.

21 MR. MORRISSEY: Right, because basically
22 changes, new processes are required to evaluate
23 defense-in-depth. But if you're changing an old
24 process you're not required to evaluate defense-in-
25 depth and one of the reasons why is because when the

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1 rule came into effect, these facilities are already
2 out there operating for 25 and 30 years. You couldn't
3 ask them to justify what they designed 30 years ago.
4 You know what I mean? In terms of criteria, because
5 some of the criteria -- is seismic or it could be
6 floods. Or why didn't 30 years ago you didn't provide
7 defense-in-depth and design against this seismic
8 event.

9 MR. DAMON: I have a couple of thoughts on
10 this because I was on the team that participated in
11 writing the original rule, but I was not involved in
12 this equivalence replacement clause. That was done by
13 other people on the team that we had. I was focusing
14 on the ISA part. But one thing about the rule is if a
15 licensee is a new licensee, so they got licensed under
16 the rule subsequent, then that, I believe it's 70.64
17 where the defense-in-depth clause is invoked. That
18 requirement is in force for them, right? So a new
19 licensee, regardless of what the equivalent
20 replacement -- the equivalent replacement might invoke
21 that, but it doesn't have to because there's going to
22 be a defense-in-depth requirement that's a minimum
23 that they need to meet.

24 Now if they had excess beyond whatever the
25 minimum was defined to be under that rule, then that

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1 might have to be addressed here as to whether backing
2 off from something more than the minimum is equivalent
3 or not. And that's, I think, what you're saying is
4 it's not explicitly addressed in this guidance. But
5 another thing about it, even the existing licensees in
6 the area of criticality safety is part of the ANSI 8.1
7 standard for criticality safety is that the double
8 contingency principle should be maintained.

9 And most of the licensees actually that
10 are low enriched licensees, they commit to that as a
11 requirement as opposed to a should which it is in the
12 standard. They actually commit to it. So again, in
13 the case of that subclass of licensees, they actually
14 have a defense-in-depth requirement that they have to
15 meet regardless of what this part of the rule does.
16 But again, these are minimum. So if you had double
17 contingency, if you had triple contingency and you
18 back off the double, they might have to address it in
19 this section if you didn't want them to do it as an
20 equivalent change.

21 If you as a licensee -- as NRC -- wanted
22 to interpret equivalent replacement as not backing off
23 at all, double contingency, yes, you would have to
24 address it in this section here. But that doesn't
25 mean they can back off to what I would regard as an

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1 unsafe level. They basically all have a double
2 contingency requirement.

3 MR. MORRISSEY: The last criteria here
4 altering a sole IROFS, this actually was a semi-
5 controversial area with licensees. A sole IROFS is
6 basically when you specify one control. I have one
7 control which provides safety.

8 The original language basically said if
9 you alter a sole IROFS, you need to get prior approval
10 because basically the people who made the rule decided
11 that a sole IROFS by definition had risk importance.
12 That's the only thing keeping you from a problem, then
13 if you mess with it in any way, shape, or form, we
14 want you to come in for prior approval.

15 Licensees, and this was basically the only
16 one major comment from licensees when the thing went
17 out to public comment was that positive alterations
18 didn't make sense and our answer to that was basically
19 two-fold, one what you think positive, we might not
20 think positive. And --

21 VICE CHAIRMAN ARMIJO: May have missed
22 something.

23 MR. MORRISSEY: Right, you may have missed
24 something. You may think oh, this makes things a lot
25 better. And we go, we don't think so.

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1 We did add -- because people said alter
2 it, what if I had this thing and I decide to paint it.

3 And so we added to the guidance basically that
4 altering a sole IROFS meant basically changing,
5 altering the safety function. So in other words, if
6 you paint something, we don't care.

7 MEMBER STETKAR: Well, I would care.

8 (Laughter.)

9 MEMBER STETKAR: I can think of the
10 example that comes most to mind is suppose I have a
11 catalytic hydrogen converter and I paint it, paint the
12 outside of it. The solvent goes on to the catalyst
13 surface and it's dead.

14 MR. MORRISSEY: Now you've affected the
15 safety function. You may not have recognized it.

16 VICE CHAIRMAN ARMIJO: So when you turn it
17 on, it catches fire.

18 MR. MORRISSEY: The burden of making these
19 determinations basically falls on the licensees. It's
20 really not the staff's job to say this is exactly --
21 it's not like dealing with the kids, do your homework.

22 It's like when? This is the burden of determining
23 these criteria, evaluating these criteria, evaluating
24 these criteria in a consistent way is the burden of
25 the thing, and then for us to go in and provide

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1 oversight, their process makes sense and is
2 consistent. And if I did it or he did it or you did
3 it 25 years later, I should come up with the same
4 thing.

5 MEMBER POWERS: What happens to a licensee
6 when he submits 500 changes, a summary of 500 changes
7 to you and at the end of the year he said I made all
8 these changes without prior approval. And you go
9 through the list and you pull out one of them and you
10 pull the string on it and you go oh my God, you should
11 have come to us for prior approval on this. All you
12 can say is don't do that again. Or what do you do?

13 MR. MORRISSEY: We probably would issue a
14 violation and depending on our evaluation of the
15 safety impact of that evaluation, the level of that
16 violation would be consistent with the crime.

17 MR. CAMPBELL: Also that would prompt us
18 to increase our sample size too.

19 VICE CHAIRMAN ARMIJO: There is no
20 incentive for screwing up, really, from the
21 applicant's standpoint. If they screw up, it's just a
22 mistake, but it's foolish to try and --

23 MR. MORRISSEY: They generally take a
24 conservative approach to -- they don't want to know
25 after the fact that uh-oh, you should have come in for

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1 prior approval.

2 MEMBER BROWN: I just want to backtrack to
3 the previous bullet. I guess the consequence of
4 reading this thing and your positions again under
5 Section 2.3(c) you state physical equivalent versus
6 non-equivalent, the licensee does not require prior
7 NRC approval to make a change that removed an IROFS
8 without a replacement -- can demonstrate that it will
9 still meet the performance requirements. In other
10 words, he can remove it if he can still demonstrate
11 it.

12 MR. MORRISSEY: Right.

13 MEMBER BROWN: But under your statement of
14 rules, it says that at any time you remove without an
15 equivalent replacement, you have to get approval.
16 That's the third bullet under the discussion in
17 paragraph 5 discussion.

18 It just seemed to be an inconsistency.

19 MR. MORRISSEY: That would be wrong if
20 that's what it says and I can read that.

21 MEMBER BROWN: Maybe the way I read it and
22 I don't know if that's correct. It just seemed to be
23 inconsistent between bullet 3 under the said paragraph
24 of the discussion and that sentence under whatever I
25 just said, C, 2.3(c). And then it goes down and

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1 you've got the documentation requirements and you
2 might find that later. That's just the way I read it,
3 whether my understanding of the language is improper
4 or not, I don't know.

5 (Off the record comments.)

6 MR. MORRISSEY: Okay, the first statement
7 is you are not to make a change that removes an IROFS
8 without replacement if you can demonstrate -- if you
9 had an accident sequence with five controls --

10 MEMBER BROWN: Where are you, 2.3(c)?

11 MR. MORRISSEY: 2.3(c) and I'm going to
12 just walk this one sentence at a time. If you had an
13 accident with say five controls, and you decide to get
14 rid of the one on the end, well, in this process the
15 one you get rid of is the one on the end by
16 definition, so it doesn't matter how they are listed.
17 Basically, you have five controls. Now you're going
18 to have four.

19 If you decide with four that you still
20 meet the performance requirements that is an extra one
21 anyway. So you don't need to maintain that margin of
22 safety. You just need to --

23 MEMBER BROWN: I am not arguing with that.
24 Go back to bullet three.

25 MR. MORRISSEY: Okay.

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1 MEMBER BROWN: Does not give you that
2 discretion. It just says removal of any equivalent
3 safety function and if it's identified as needed in
4 the ISA summary which is the previous ISA is needed
5 for compliance, you've got five needed for compliance.
6 You've got to redefine something. Either --

7 MEMBER RYAN: I think the point that
8 Charlie is pointing out is in one place you tell folks
9 you have to give us stuff that tells us you meet the
10 performance criteria. And if they take the choice to
11 add a bunch of extra stuff, you've got a conflict with
12 that extra stuff.

13 In one place you say if you've claimed it,
14 it has to be there. It has to work. And on the other
15 hand, on 2.3(c) they say you don't need it.

16 MEMBER BROWN: I'm not disagreeing with
17 the thought process, but the requirement via the
18 articulation of what you do --

19 MEMBER RYAN: Just be careful that you say
20 you meet the objectives with these five things. Okay,
21 I've committed these five things, meet the objective.
22 Now in my head, I may only need three.

23 MR. MORRISSEY: Right.

24 MEMBER RYAN: One place in the guidance I
25 can take the other two out, no harm, no foul. In the

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1 other place in the guidance, I can't.

2 MR. MORRISSEY: Okay.

3 MEMBER RYAN: That seems like an
4 inconsistency to me. It's my reading of it.

5 MR. MORRISSEY: It could be and it could
6 be us. Some of these things are written in like the
7 double negative. Cannot if you do not -- and you have
8 to sort of -- thank you for the comment. We'll add up
9 all the negatives and see if we can back on the bus.

10 MEMBER BROWN: Can I ask one other
11 question on sole IROFS, since I've been involved in a
12 couple of comments on the previous licensing ISG on
13 IROFS on ISG 7 or whatever it was.

14 I read this thing and I came out and this
15 is a general philosophical thing. Sole IROFS, you
16 have to get approval if you're going to eliminate it.

17 I'm really being simplistic. Do I read that out of
18 all these caveats under the alteration of a sole IROFS
19 and the paragraph 3(a)(c) for changes, must
20 demonstrate --

21 MR. MORRISSEY: Now the question is if you
22 just want to drop it?

23 MEMBER BROWN: If I want to just -- yes.
24 Get rid of it. It's broken now for some reason. We
25 don't want to replace it or you're evaluating

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1 replacement. You just want to get rid of it.

2 MR. MORRISSEY: Actually, this has come up
3 and the determination is made that basically once you
4 determine you don't need it, you must not have an
5 accident sequence. And therefore, if you don't have
6 an accident sequence, you don't need it.

7 MEMBER BROWN: I'm just looking for NRC
8 approval.

9 MR. MORRISSEY: The way it's been
10 administered, at least in the one case we've actually
11 had, prior approval wasn't to just removal it.

12 MR. CAMPBELL: A sole IROFS?

13 MR. MORRISSEY: A sole IROFS.

14 MEMBER BROWN: Did they get NRC approval
15 prior to doing it? Or did they --

16 MR. MORRISSEY: They did not get NRC
17 approval. Actually, they asked us if they needed
18 approval and there was actually a memo somewhere which
19 basically from our --

20 (Off the record comments pertaining to the
21 conference line.)

22 VICE CHAIRMAN ARMIJO: That almost implies
23 that you never needed that IROFS, so I can understand
24 if you have sole IROFS. How in the world can you get
25 rid of it without some --

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1 MR. MORRISSEY: What happened originally
2 was when licensees did their ISA evaluations. Lots of
3 times they were very conservative in determining like
4 dose rates or chemical exposures. Later on, when they
5 went back and sort of sharpened their pencil and did
6 reanalysis, they said you know, we don't meet the
7 criteria any more. We don't think we have the hazard
8 and we don't think we have an --

9 VICE CHAIRMAN ARMIJO: It never should
10 have been defined as an IROFS.

11 MEMBER BROWN: Can I get back to my
12 question?

13 MR. MORRISSEY: Yes.

14 MEMBER BROWN: Removing a sole IROFS, all
15 I really wanted out of that was a yes or a no. Does
16 NRC approve the permanent elimination of that prior to
17 it being eliminated or not?

18 MEMBER SIEBER: Yes and no.

19 MR. MORRISSEY: It is not required -- you
20 don't need prior approval to remove it.

21 MR. CAMPBELL: If it trips one of these
22 thresholds, yes, but --

23 MEMBER RYAN: You've got to tie it to
24 70.61, Charlie. You can't make that decision in a
25 vacuum.

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1 MR. MORRISSEY: A determination was made -
2 -

3 MEMBER BROWN: I understand your point.
4 It's just when something was previously defined
5 whatever is in the ISA --

6 MEMBER RYAN: I can see how it could
7 change and not change. For example, if I redo an
8 assessment calculation against the dose criteria and I
9 find out I have some other new control that's taking
10 care of exposure to workers because I've moved the
11 workers to a different part of the plant and all that,
12 I might need the dose criteria even without one IROFS.

13 MEMBER BROWN: I understand the thought
14 process. It's just when I've only got one of
15 something, it seems having it be done without any
16 consultation of any form with NRC, whatever it is,
17 prior to doing it, even if you've done -- it seems to
18 me that's my personal opinion.

19 MEMBER RYAN: Correct me if I'm wrong,
20 gentlemen, but a licensee who does that without even
21 so much as a phone call to NRC is taking a risk.

22 MR. MORRISSEY: He is taking a risk.

23 MEMBER RYAN: And I don't know many
24 licensees who would do that without saying hey, Kevin,
25 here's what we're thinking about, can you give us a

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1 hint or do you have any initial reaction.

2 MR. MORRISSEY: And in general, they take
3 a conservative approach by we don't think we need to
4 come in for this or should we come in for this and
5 sometimes the answer is like this one, what's gone
6 first, the control or the accident. If the accident,
7 if you don't have the accident, you don't need the
8 control.

9 MEMBER BROWN: It's a little bit like my
10 equipment that I argue about all the time and the
11 protection system, I&C and stuff. There's a lot of
12 rules for it, independence, determinants, blah, blah,
13 blah, it's a litany.

14 People tend to be conservative and try to
15 do a good job, but we say -- we trust you, but we like
16 to verify that before we license you. So we ask to
17 have some verification and this is just a fuel
18 factory, we're making stuff and now I'm going to
19 eliminate a system. That's --

20 MR. MORRISSEY: We're going to see that
21 they eliminated the system and once again, it's like
22 if that gives us an itch, we would go out and inspect
23 that in more detail. But the process doesn't require
24 us to do that.

25 MEMBER RYAN: Just to maybe help Charlie

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1 with this point, it is required that a licensee
2 document that change.

3 MR. MORRISSEY: Definitely and if it
4 affects the ISA, specific -- if it changes the ISA
5 summary, those changed pages need to come to us on an
6 annual basis.

7 MEMBER SIEBER: Whether it needs approval
8 or not.

9 MR. MORRISSEY: Right.

10 MEMBER BROWN: Well, the thing just says
11 he should demonstrate. I don't know what means in the
12 documentation requirements. It doesn't say you have
13 to document it. It just says you have to demonstrate
14 it. I read those --

15 MEMBER RYAN: You've got to recall here
16 and I have seen a number of these licenses. They're
17 very detailed licenses. It's a lot of license
18 conditions. So some of these things could be caught
19 in a license condition as opposed to the guidance
20 document. I think that's fair because of the range of
21 facilities that are trying to cover with this.

22 MEMBER BROWN: I will cease and desist at
23 this point.

24 MR. MORRISSEY: And I will try to wrap up
25 here. Documenting the need for prior approval. And

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1 this is really documentation. When licensees evaluate
2 the need for prior approval, this information is not
3 required to be sent to us on a yearly basis, but it's
4 part of what's called their process safety information
5 which is a fancy way of saying the stuff that they
6 have on site. This is something that we would inspect
7 and not quote "review."

8 And a big portion of the documentation and
9 it talks about this mostly in the guide is the fact
10 that the reasons why you don't need prior approval
11 can't just be no, this isn't a sole IROFS, it needs --
12 that's part of the regulatory requirements.

13 And finally wrapping up here --

14 MR. CAMPBELL: Kevin, I just have a
15 comment. It was asked earlier about the changes to
16 the security plan and other plans. The criteria for
17 those changes are not necessarily the same as 72. For
18 example, if you take a look at changes to the security
19 plan, the licensee shall make no change which would
20 decrease the effectiveness of the security plan
21 without pre-approval. So Kevin was absolutely right.

22 These changes do require -- they're all under this,
23 but the security plan has its own route for review and
24 approval.

25 MR. MORRISSEY: As part of the task force,

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1 licensees have requested that the list I have given
2 you earlier really wasn't all because part of that
3 other list is basically the license application. In
4 the fuel cycle space, the licensees provide us with an
5 application for a license which basically contains all
6 the descriptions of the programs and commitments about
7 how they will use and possess, basically how they will
8 operate their facility.

9 Once the staff approves the license, all
10 those commitments get incorporated "into the license
11 by reference." So a big part of the change process is
12 actually changes to the license application. In
13 reactor land, and I'm going to break my own rule, this
14 would basically be the safety analysis report.

15 So they ask to at least address the fact
16 that there are other things in the facility you can
17 change which is basically the commitments in your
18 license and there are four specific things which are
19 actually called out in 70.32 which is the MC&A
20 program, the physical protection plan, the safeguards
21 contingency plan, and emergency plan. The licensees
22 are allowed to make changes to all these things
23 without amendment or prior approval based on the
24 simple criteria which is effectiveness of the plan.
25 So there is provision to doing that.

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1 In terms of changes to the license
2 application, the guide does make a suggestion or
3 provide "one acceptable way to do it" to the staff and
4 that's basically by putting a condition in your
5 license that says I can make changes to my license
6 application and the commitments in this thing if I --
7 and then provide criteria about the type of changes
8 you're going to make. If you expect to make changes
9 to the requirements -- like you were saying before,
10 requirements for management. Instead of needing five
11 years an advanced degree, now he needs three years and
12 a B.S. or whatever. If you want to make these type of
13 changes without prior approval, you need to provide a
14 condition which basically says in your license which
15 says you can do that and the criteria used with those
16 changes. That would be acceptable to the staff.

17 There are presently -- there are parts of
18 the staff which basically have determined that changes
19 to the license application are somehow part of the
20 70.72 process. Other people who don't think it's part
21 of the 70.72 process and it applies only to the ISA
22 sort of part of the safety basis in the facility, and
23 so there are discussions.

24 The guidance and what is provided in the
25 guidance is one acceptable way to make changes. It is

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1 okay. There are people who think there are other
2 options and those are basically being thought about
3 with the lawyers. It's like can I do this, can I do
4 this instead of this? So the guidance is unaffected
5 by the recommendation it makes, but it could be
6 expanded in the future and that was the purpose of
7 this.

8 MEMBER RYAN: Kevin, just one point of
9 information, just so that it's clear. Are any fuel
10 cycle facilities licensed by agreement states as
11 opposed to straight from the NRC?

12 MR. MORRISSEY: As far as I know no part
13 70.

14 MEMBER RYAN: No part 70.

15 MR. MORRISSEY: It may be part 41.

16 MEMBER RYAN: Yes.

17 MR. DAMON: There are licensees authorized
18 to possess SNM that aren't these major fuel cycle
19 facilities like universities and stuff. So they also
20 have agreement state license for some things.

21 MEMBER RYAN: So there is a little bit of
22 a finger that has to go out to the agreement states,
23 is that correct or not?

24 MR. DAMON: I don't know.

25 VICE CHAIRMAN ARMIJO: They are not

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1 classified fuel cycle facilities.

2 MR. DAMON: They are part 71. They are not
3 invoked under subpart H.

4 MEMBER RYAN: That answers my question. I
5 just wanted to make sure that wasn't a finger going
6 out to the agreement states without --

7 MR. MORRISSEY: And that's basically it
8 for me. I held my gun at least more to give you some
9 information than confuse you. I very much thank you
10 for the opportunity to --

11 MEMBER POWERS: It gives us some insight
12 into this process. We appreciate your point of view.
13 Good luck on your new job.

14 MR. CAMPBELL: Thank you.

15 MEMBER POWERS: Dennis, we're always glad
16 to have you here to try to carry us through this.

17 Are there any questions from other members
18 on this subject?

19 MEMBER RAY: We've talked a lot here about
20 adding and subtracting things. But the reality for me
21 is operability. Let's say, for example, you didn't
22 take something away, but you just -- it wasn't
23 operable as much as it used to be. Is that a change?

24 MR. MORRISSEY: As part of the regulation,
25 part 70 regulation, licensees are required to track

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1 failures in degradations of controls which are
2 designated as IROFS, i.e., important safety controls
3 from performance requirements.

4 The requirement is that you track all
5 basically degradations and stuff too because you've
6 made certain assumptions about maybe their failure
7 rate, maybe their availability, maybe their
8 reliability. You've made these assumptions as part of
9 your determination that the safety requirements are
10 satisfied.

11 So if they are degraded and stuff, there
12 is a requirement to basically track those and evaluate
13 the impact that would have on based on the conclusion.

14 MEMBER RAY: So you treat it like a
15 change, but it's not classified as a change.

16 MR. MORRISSEY: It's not a change, but by
17 regulatory requirement it requires an evaluation to
18 determine the impact on the safety conclusion that
19 you've made.

20 MR. DAMON: It's compliance with 70.61 and
21 the management measures clause which says that you
22 must have management measures too that support the
23 evaluation of likelihood in 70.61, so you must have --
24 I forget the exact words, but it's sufficient to make
25 the IROFS available and reliable to perform their

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1 safety functions under 70.61. So if they degrade the
2 operability of something, it being a change in itself
3 isn't necessarily a violation, but if they no longer
4 comply with 70.61, it is.

5 VICE CHAIRMAN ARMIJO: Or out of service.

6 MEMBER RAY: Well, I am looking at a
7 spectrum in which on average it was available 90
8 percent of the time five years ago and now it's 75
9 percent of the time or 50 percent of the time or
10 something. I don't know.

11 And I just want to understand if that's a
12 change or not a change. It's still there.

13 MR. MORRISSEY: Right, but no, they're
14 required to look at that impact in terms of its impact
15 on your safety --

16 MEMBER RAY: Sounds to me we're not
17 calling it a facility change. It's something
18 separate.

19 MR. MORRISSEY: It's not a change, it's
20 separate, because now it affects the likelihood. It
21 directly impacts likelihood, so you need to -- on a
22 qualitative basis sometimes it's difficult --

23 MEMBER RAY: Okay, but it's not on the
24 scope of this Reg. Guide I take it.

25 MR. MORRISSEY: No, it isn't because it's

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1 not considered a change.

2 MEMBER RAY: All right.

3 MR. DAMON: What should handle is they
4 should have a surveillance program for if it's
5 hardware, IROFS. Like for example the scenario you
6 described I would imagine if something where this
7 component is actually going into wear out or aging
8 failures and as they increase, the surveillance
9 interval that they've set should truncate that at a
10 safe level.

11 And so it's not a change, but it should be
12 handled by something like surveillance or maintenance.

13 MEMBER RAY: Okay, all right, but we're
14 just here talking about this Reg. Guide and that's not
15 part of it. Okay.

16 MR. DAMON: Right.

17 MEMBER POWERS: Any other questions? I
18 believe I can turn it back to you, Mr. Chairman.

19 CHAIRMAN ABDEL-KHALIK: Thank you. At
20 this time we will break for lunch and we will
21 reconvene at 1:15.

22 (Whereupon, at 12:16 p.m., the meeting was
23 recessed, to reconvene at 1:15 p.m.)
24
25

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A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

(1:14 p.m.)

CHAIRMAN ABDEL-KHALIK: We are back in session. At this time we will go to item number 4 on the agenda, "Meeting with Representatives of the Nuclear Energy Institute." And Mr. Sieber will lead us through this discussion.

MEMBER SIEBER: Okay. Thank you, Mr. Chairman.

4) MEETING WITH REPRESENTATIVES OF
THE NUCLEAR ENERGY INSTITUTE

4.1) REMARKS BY THE SUBCOMMITTEE CHAIRMAN

MEMBER SIEBER: Back in April, I guess it was, NEI officials offered to make presentations to the ACRS. And that offer was presented to our Executive Director, Ed Hackett. When the proposal was considered at the May 5th P&P meeting and a tentative agenda was published and after a flurry of e-mails among the members, we approved and agreed to a presentation based on five general topics of interest, of which NEI has been quite active. And those topics are security, fire protection, safety culture, PWR sumps, and groundwater contamination.

And, as a matter of interest, those of us who are going on the Plant Operations Subcommittee

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1 trips at the end of this month, Ed Houghton of NEI
2 will give an expanded version of the discussion on
3 safety culture at the regional Region IV meeting in
4 Arlington, Texas.

5 So, without further ado, what I would like
6 to do is introduce Alex Marion, who is Vice President
7 of Nuclear Operations of NEI.

8 MR. MARION: Thank you. Thank you very
9 much.

10 4.2) BRIEFING BY AND DISCUSSIONS WITH
11 REPRESENTATIVES OF THE NUCLEAR ENERGY INSTITUTE

12 MR. MARION: Good afternoon. It is always
13 a pleasure to address the Advisory Committee for
14 Reactor Safeguards, although in my current position, I
15 don't get the opportunity to address this important
16 Committee today as much as I had in the past.

17 This afternoon I would like to provide a
18 high-level overview of NEI for those of you who are
19 new members who may be hearing this the first time as
20 well as touch on the topics that Dr. Sieber mentioned.

21 Our mission is straightforward. And that
22 is essentially to assure that the formation of
23 policies that promote the beneficial uses of nuclear
24 energy and technologies in the U.S. and around the
25 world. And with member participation, we develop

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1 policy on key regulatory as well as legislative issues
2 that affect our industry. We serve as a unified voice
3 with Congress, Executive Branch agencies, federal
4 agencies, as well as international organizations and
5 other venues.

6 We provide a forum to resolve technical
7 and business issues that affect the industry, which is
8 basically how we get involved in undertaking nuclear
9 workforce issues and sharing our findings with the
10 industry at large.

11 We establish policy direction on critical
12 issues, including regulation, legislation,
13 congressional awareness and acceptance. And we
14 provide a unified industry approach to resolve these
15 issues and address related technical matters to
16 provide high reliability and economic efficiency in
17 the safe operation of our nuclear power plants,
18 advocacy and representation before Congress, Executive
19 Branch agencies, and regulatory agencies, media, as
20 well as state policy forums.

21 Our membership is represented by about
22 approximately 350 organizations. The slide indicates
23 19 foreign countries are involved. It's 17. I
24 apologize for the error.

25 Our budget is approximately \$47 million.

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1 We engage more than 3,000 individuals within the
2 industry in our Committee activities. And this ranges
3 from chief executive officers who are on our board of
4 directors to specialist engineers, if you will. You
5 were talking about nondestructive examination earlier,
6 who may be involved in task forces. And we engage
7 them as well. So we cover the entire spectrum. At
8 any point in time, we have about 3,000 individuals
9 from the industry effectively involved in these
10 activities.

11 In terms of the membership breakdown, the
12 nuclear utilities that own and operate current plants
13 in the U.S. represent approximately 90 percent of our
14 budget. So they are a -- what should I say? --
15 important significant stakeholder, to say the least.
16 But we also include in our membership reactor
17 designers and architect/engineering firms, equipment
18 and service suppliers, elements or stakeholders
19 involved in the fuel supply chain from uranium mining
20 to enrichment and fuel fabrication. We have research
21 laboratories who are members of our organization,
22 radiopharmaceuticals and radio isotope manufacturers,
23 as well as universities, labor unions, law firms, and
24 others.

25 In terms of how we function, we have

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1 several advisory committees that give us direction and
2 give us feedback on strategies and action plans in
3 dealing with issues as well as identifying what are
4 priority issues that we need to focus on that are in
5 the general interest of the industry.

6 We have a Nuclear Strategic Issues
7 Advisory Committee that basically provides us guidance
8 and direction in the Nuclear Generation Division at
9 NEI. That committee is currently chaired by Chip
10 Pardee, who is Chairman and Chief Executive Officer of
11 Exelon. And that committee is very important in that
12 it is represented by the chief nuclear officers of the
13 representative organizations I mentioned earlier. It
14 is a very active group. They enjoy giving us guidance
15 and direction. And for the most part, it is a good
16 relationship. Right, gentlemen? Okay.

17 MEMBER POWERS: Did you say misguidance?

18 MR. MARION: I'm sorry?

19 MEMBER POWERS: Any misguidance?

20 MR. MARION: We also have a Government
21 Affairs Advisory committee that provides counsel to
22 our Government Affairs Division. And, similarly, we
23 have a Communications Advisory Committee that gives us
24 guidance on how we communicate with the media and with
25 the general public. And from a new plant perspective,

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1 we have a new Plant Oversight Committee that is
2 chaired by Jim Miller, President and CEO of Southern
3 Nuclear.

4 And we also have working groups and task
5 forces. Let me just talk about them very briefly. A
6 task force is a focused group. For example, when the
7 NRC publishes a regulatory guide for comment, we will
8 put a team together. And their sole purpose is to
9 review the regulatory guide, give us comments.

10 We send the comments out to industry.
11 Once the comments are submitted, we basically disband
12 the task force because the final product will be
13 issued. And that's the end of their effort.

14 Working groups, for example, deal with
15 more comprehensive issues. We have had a working
16 group actively engaged in fire protection for years,
17 ever since NUMARC was formed. And we, similarly, have
18 had a working group involved in license renewal. That
19 hasn't been that active as of late but has been active
20 over the years until license renewal became a standard
21 process.

22 Go to the next slide. Yes?

23 MEMBER CORRADINI: Just so I understand,
24 so the working group and task forces get spun out of
25 your advisory committees as needed?

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1 MR. MARION: Well, no, not necessarily.
2 We like to have one or two chief nuclear officers
3 involved in the working group basically as a chairman
4 because what we found is when you are communicating to
5 a body of chief nuclear officers, peer-to-peer
6 communication is much more effective. All right? And
7 that works very well. It also gives them a peer that
8 they can ask questions of should they have questions
9 on a particular topic that that CNO is chairman of.

10 We basically staff the working groups and
11 the task forces from the industry based upon the
12 issues that that task force or working group are going
13 to be involved in.

14 This represents the coordination effort,
15 if you will, at the Executive Branch. We're like any
16 organization. We have an Executive Committee and
17 Board of Directors. Marvin Fertel is the President
18 and Chief Executive Officer.

19 We also had established last year a
20 Strategic Policy Council that gives us advice on some
21 of the political strategies that we are trying to
22 implement. That group was established approximately a
23 year ago and has been very interesting.

24 Next slide. This represents the
25 interaction, if you will, within the various divisions

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1 at NEI. We found that you really can't deal with a
2 technical issue anymore without addressing a potential
3 political aspect, nor a public communications aspect.

4 So we find that we work together with those other
5 divisions quite frequently on a number of issues.

6 You will hear about some of the issues
7 today in the topics that you have requested we brief
8 you on. And I'm sure that Ralph and John will mention
9 the involvement of some of those other committees.

10 There's a lot of other material in the
11 package. I'm not going to go through that, but that
12 material basically focuses on a little bit of detail
13 of each of the divisions at NEI. And I will leave
14 that for your review at your convenience.

15 That completes the quick overview I wanted
16 to give you. At this point, we'll turn it over to
17 Doug Walters.

18 MR. WALTERS: Let me just while we're
19 getting there just go back to the question on working
20 groups and task forces. By our governance and our
21 articles of incorporation and bylaws, working groups
22 are always chaired by an officer of a member company.

23 And their focus is really more policy. They do
24 ultimately report back up through one of those
25 advisory committees.

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1 MEMBER CORRADINI: So in some sense, the
2 working groups are longer-term in existence, but they
3 may have a finite life.

4 MR. WALTERS: Right.

5 MEMBER CORRADINI: The task forces are
6 short-term in existence, but they all get generated by
7 issues that will come up from your committees.

8 MR. WALTERS: Yes. I mean, if there is an
9 issue that surfaces. In theory, that is exactly
10 right, but I think if you look historically, all the
11 working groups and task forces have been in existence
12 for many, many, many years.

13 MEMBER CORRADINI: Okay. So you're more
14 like the government than we know.

15 MR. WALTERS: Yes.

16 (Laughter.)

17 MEMBER CORRADINI: Sorry. Just checking.

18 MR. MARION: Well, let me just offer in
19 terms of issues, there are a number of methods by
20 which they are brought to our attention. One, of
21 course, is through one of the advisory committees.

22 We also have the NRC management identify
23 issues to us that they think that there is some value
24 in industry addressing. And also because of the
25 extent of involvement of the approximately 3,000

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1 individuals in the industry, we get issues identified
2 by a number of people from the industry as we go
3 through our interactions.

4 MEMBER CORRADINI: Thank you.

5 MR. MARION: Go ahead.

6 MR. WALTERS: Okay. Thank you. And good
7 afternoon.

8 I think Tom Houghton may have been slated
9 to talk to you today about safety culture. He is
10 actually at a workshop and will be with you on another
11 occasion. So I'm pinch hitting for him.

12 I'm going to give you a very high-level
13 summary of where we are with our activities on safety
14 culture. And I would suggest that if you have very
15 specific detailed questions when you see Tom, he is
16 the individual that is really into the nuts and bolts
17 of what we are doing. But I'm happy to stand in for
18 him for this presentation.

19 Next slide, please. Following the
20 Davis-Besse event, it was clear that I think the
21 industry didn't step forward and take the lead in
22 addressing safety culture, which is our
23 responsibility.

24 So the situation we now find is that in
25 the inspection process, an inspection finding may get

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1 tagged with what we would call an attribute. And one
2 of those that deals with safety culture is human
3 performance and procedure adherence.

4 And so the process is if you have four of
5 those and the NRC believes that you haven't done
6 enough in that area, meaning the human performance and
7 procedural adherence, they call that a substantive
8 cross-cutting issue. And that links to safety
9 culture.

10 So the reason for mentioning that is I
11 think we recognize -- and I won't speak for the staff,
12 but I think the industry recognizes that four findings
13 that have this attribute on procedure adherence do not
14 necessarily, we believe, suggest that there is a
15 problem. We look at thousands of procedures every
16 day. And we comply with thousands of procedures.

17 So we think that there is a different
18 approach that needs to be considered when you're
19 talking about safety culture. And it's really the
20 substantive cross-cutting issues that we find
21 ourselves in today that we're focused on and that I'm
22 going to talk to in a little bit of detail on what
23 we're doing about that.

24 MEMBER CORRADINI: I guess I have a
25 question.

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1 MR. WALTERS: Sure.

2 MEMBER CORRADINI: I have not been in
3 industry in this regard. So is there a safety culture
4 or are there many safety cultures at work within the
5 nuclear industry?

6 MR. WALTERS: Well, I think when you talk
7 about safety culture, it's that. It's a culture.
8 There's many things that feed into that. I think
9 there are probably many different cultures, but
10 ultimately what we're trying to do is come up with
11 some reasonable metrics that give us a sense of where
12 we are with what we would consider the bigger C in
13 safety culture.

14 But yeah, I think there are -- you know,
15 you have a culture in engineering perhaps. You have a
16 culture in security. But ultimately it is our
17 responsibility to ensure that we have the right safety
18 culture across the site. And that I think, you know,
19 to your point, there is no industry-wide guidance
20 right now that is consistently assessing safety
21 culture.

22 MEMBER CORRADINI: The reason I asked the
23 question the way I did is that long ago when I was
24 actually an engineer or at least I thought I was at
25 the time, in working at various nuclear power plants

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1 and seeing them, you see good attributes that are
2 essentially -- they become materialized in many
3 different ways.

4 So you can have a series of very good
5 attributes, but how they go about in a northern,
6 midwestern plant versus a southern plant versus a
7 western plant could be totally different. They all
8 could essentially come to the same end game. So
9 that's why I was asking about many cultures.

10 You want to instill behavior and attitudes
11 and certain policies and procedures. But they don't
12 have to be lock-step rigid. They just have to engage
13 in some set of attributes at a high end that
14 essentially get to the point.

15 MR. WALTERS: Agree. Agree. And we will
16 talk a little bit about the terminology issue because
17 NRC at INPO, who do look at safety culture, have
18 different terminologies. And as we or as the NRC
19 moves forward with the policy statement on safety
20 culture --

21 MEMBER SHACK: How would you distinguish
22 your role from INPO's?

23 MR. WALTERS: What distinguishes our role
24 from INPO's?

25 MEMBER SHACK: Yes.

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1 MR. WALTERS: Yes. That is a good
2 question. I think that's something that we're still
3 looking at. Let me give that a little bit of thought
4 before I answer too quickly.

5 INPO certainly looks at safety culture,
6 but it's more integrated into, for example, their
7 plant evaluations. And I think that has perhaps
8 served us well up until this point, but it is now more
9 of -- at least -- well, my response to you would be
10 that the safety culture issues that we see now come
11 out of the regulatory piece of this. It's
12 inspections. It's the cross-cutting issues. And we
13 deal with the regulatory --

14 MEMBER SHACK: Okay.

15 MR. WALTERS: -- elements of the industry.
16 That's not to say INPO wouldn't be involved, but
17 they're really looking at operations and dealing with
18 the sites; whereas, this is more of I think right now
19 a regulatory issue. But they certainly are involved.
20 I mean, they are part of our team. They talk with
21 the NRC as well.

22 So it's not that we have excluded them,
23 but when you look at the roles and responsibilities of
24 the organizations, ours is the regulatory piece. And
25 that's where I think we are with this issue right now.

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1 CHAIRMAN ABDEL-KHALIK: But procedure
2 adherence and human performance issues are also part
3 of INPO evaluations.

4 MR. WALTERS: They are. And that's why
5 they look at it as part of their own --

6 CHAIRMAN ABDEL-KHALIK: Overlap.

7 MR. MARION: We are working very closely
8 with INPO on this activity and, as Doug indicated, the
9 separation between the two organizations, operational
10 performance on the part of INPO. And ours is the
11 technical regulatory piece. And there are a number of
12 activities we have undertaken over the years where the
13 issue touched both areas.

14 And so we work very closely with INPO.
15 And we also work very closely, as you well know, with
16 EPRI as the technical resources on a number of issues.

17 MEMBER CORRADINI: Is INPO part of NEI?

18 MR. MARION: No.

19 MEMBER CORRADINI: Is that consciously
20 separate and just informal communication, rather than
21 formal linkage?

22 MR. MARION: Yes. The industry wants
23 those organizations to focus on their respective
24 missions separately. They recognize that, like on
25 safety culture, there is a reason for both of them to

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1 work together on it.

2 Another example is the work that we did on
3 materials on primary system weld inspections. We have
4 INPO involved in that. We also have EPRI, I believe,
5 involved in that. But we all stay true to our mission
6 as we proceed in those activities.

7 Does that help?

8 MEMBER CORRADINI: Yes.

9 MR. WALTERS: Next slide, please. So with
10 that situation, there are three activities that we
11 have underway. And, again, Tom Houghton is the
12 individual that is leading our efforts here.

13 The first one I want to talk about is what
14 we're calling the holistic approach, which is embedded
15 in an NEI guidance document, 09-07. If you go to the
16 next slide, I will talk a little bit about that.

17 Now, this is pretty busy, but the message
18 on this slide that I would have for you is this is the
19 cultural process that we have outlined in 09-07. And
20 along the bottom you see the inputs that we have into
21 the corrective action program.

22 And I would note that the NRC inspection
23 results are a part of that. So there can still be in
24 our process these attributes assigned to a finding,
25 but what we're proposing is those things all go into

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1 the corrective action program or site improvement
2 program.

3 And then you see the block with the arrow
4 that says, "Nuclear Safety Culture Monitoring Panel."

5 Under our proposed process, that panel would meet --
6 let me see. I think they would meet quarterly to
7 review items in the corrective action program with a
8 specific focus on safety culture. And they're really
9 trying to identify the trends.

10 That information then goes up to the site
11 leadership team. They would meet probably on a
12 semi-annual basis to review the findings, if you will.

13 I don't mean NRC findings, the results -- let me say
14 that -- of the monitoring panel. And then there's
15 action that's taken if they see trends. And that's
16 what you see on the side of the slide in terms of site
17 response. So they may have to -- maybe they need a
18 new policy. Maybe they need program modifications.
19 You can read the rest.

20 Some of the items may actually go back
21 into the corrective action program for -- if it's not
22 an immediate or relatively immediate action that can
23 be taken.

24 And so, again, we think this is a better
25 approach and gives you a larger database of

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1 information to look at to determine, do I see some
2 trends that would give me concern about my safety
3 culture at the site, as opposed to, again, where we
4 are today, which is four inspection findings that have
5 this attribute of human performance or procedure
6 adherence.

7 VICE CHAIRMAN ARMIJO: The nuclear safety
8 culture monitoring panel, is that a standing panel or
9 does that work on an ad hoc basis for a particular
10 site?

11 MR. WALTERS: Well, it would be a standing
12 group for that site. It would be the owners of the
13 key processes on site.

14 VICE CHAIRMAN ARMIJO: It would be.
15 They're the site, they're employees --

16 MR. WALTERS: That's correct.

17 VICE CHAIRMAN ARMIJO: -- of the utility
18 or --

19 MR. WALTERS: Yes. This is all utility
20 staffed and functioned except for you would have some
21 oversight of the Nuclear Safety Review Board, --

22 VICE CHAIRMAN ARMIJO: Right. Right.

23 MR. WALTERS: -- which would have some
24 external folks. But everything beyond that or
25 underneath that would be site staffed.

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1 VICE CHAIRMAN ARMIJO: Okay.

2 MR. WALTERS: So, again, that's a fairly
3 high-level overview of the process.

4 MEMBER CORRADINI: Can I just ask a
5 clarification question?

6 MR. WALTERS: Sure.

7 MEMBER CORRADINI: So I was just asking on
8 the side, but just to make sure I am right, so the ROP
9 process the NRC uses to give you colors in various
10 blocks of performance, it is those findings where you
11 said it's four across in some cross-cutting area. And
12 those then would be referred to this --

13 MR. WALTERS: No. In this process --
14 well, let me start over.

15 MEMBER CORRADINI: But I do have the right
16 starting point at least?

17 MR. WALTERS: You have the right starting
18 point.

19 MEMBER CORRADINI: Good.

20 MR. WALTERS: What we have today is
21 inspection findings that can be tagged with an
22 attribute. And today if you have four findings and
23 you have four attributes and the NRC believes you
24 haven't done enough in that particular area of human
25 performance/procedure adherence, they can call that a

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1 substantive cross-cutting issue. And it drives you to
2 do a number of things. It could drive you to do an
3 independent third party assessment, some other things.

4 That is the process we have today.

5 What we would like to do is say, "Let's
6 not use that process. Let's use this." We would
7 still take the input. NRC could still tag a finding
8 with that attribute. And we would put it into this
9 process and evaluate it.

10 Now, NRC, by the way, in this process
11 could come and observe those monitoring panels. They
12 could observe the site leadership team deliberations.

13 So we're not really cutting them out of the process,
14 but the difference for us is, rather than just have
15 four inspection findings, we think you get more data
16 by using six or seven inputs, as opposed to just the
17 findings.

18 MEMBER CORRADINI: And the ROP process
19 that is one of these inputs has been in force in its
20 current form how long? I've forgotten.

21 MR. MARION: About ten years, I think.

22 MEMBER CORRADINI: Ten years.

23 MR. MARION: Approximately ten.

24 MEMBER CORRADINI: And before that?

25 MR. WALTERS: SALP, systematic assessment

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1 of licensee performance.

2 MEMBER CORRADINI: The reason I am asking
3 a question such as that is, has anybody done an
4 historical look at a site and see how they evolve into
5 and out of goodness and badness by these various
6 things and to see what that tells you about safety
7 culture?

8 It seems to me a historical look on how a
9 site -- pick a plant -- and watch it as it changes and
10 ask the question what is the root cause of the changes
11 and how do they fit into safety culture would be a way
12 to look at this.

13 I mean, all of these are -- since culture
14 is people, the people that flow in and out of the
15 organization, how the organization changes seems to me
16 to be the biggest indicator, a big indicator.

17 MR. WALTERS: I don't know the answer to
18 that, but that is a good question.

19 MR. BUTLER: I will try to just add. John
20 Butler.

21 We have looked at any correlation seen
22 between the assignment of aspects and where a plant
23 goes in the action matrix. There is no correlation
24 that has been seen in that. So the assignment of
25 cross-cutting aspects has not been a precursor to

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1 evolution in the action matrix.

2 MEMBER CORRADINI: I see.

3 MEMBER SIEBER: There was an interesting
4 sort of study that was done by the Navy maybe 25 years
5 ago, where they tried to identify what was the good
6 type of ship. Okay?

7 And what they found out is that the good
8 ship moved from ship to ship as certain captains moved
9 from ship to ship. And a lot of the safety culture
10 had to do with leadership.

11 Well, you can set up an organization with
12 all of these functions in it, but if the leadership
13 isn't there and the high standards aren't there, it
14 doesn't happen.

15 Now, the leadership in a power plant --
16 and I have worked at a lot of power plants in my
17 career -- could be anybody. It could be the site vice
18 president. It could be the plant manager. It could
19 be the operating supervisor. It could be the chief
20 steward of the union or it could be no leader at all
21 and things just sort of happen hit or miss. And I've
22 seen quite a variety of that.

23 And so the issue is more complicated than
24 you can put together in the analysis of an
25 organization chart. And you can't put an organization

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1 chart, put it in place, put people in it, and expect
2 safety culture to drop out somewhere. And so I think
3 it's a very complex problem.

4 From a regulatory standpoint, it is not
5 our job to go out and say, "Here is a good leader.
6 Here is a bad one." It is our job to say, "Safety
7 culture isn't at a high enough standard in this plant.

8 And the management needs or the insurance company or
9 whoever, INPO, somebody, needs to take action with
10 regard to that plant."

11 MR. BUTLER: And it is the recognition
12 that safety culture has a number of inputs to it, that
13 it's widespread across the organization, that this
14 process was put together to try to capture all those
15 various inputs to assessing safety culture; whereas,
16 the current process is very narrow and it's focused in
17 on inspection findings.

18 MEMBER SIEBER: Yes. And I think each
19 organization; for example, the NRC, has a role to
20 play. NEI has a role to play. Corporations, plants
21 have a role to play. And INPO has a role to play.
22 And they don't lay on top of one another. And so I
23 think each of us is obligated to determine what our
24 roles really are and work together to achieve a
25 confident goal.

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1 I was going to comment about this at the
2 end of the discussion, but one of the things that
3 would help me personally would be to have access to
4 NEI documents so that I could know what your thoughts
5 are and have an understanding about your thought
6 process and how it fits into what our agency is trying
7 to do and what utilities are trying to do.

8 MR. WALTERS: We can get those to you.

9 MEMBER SIEBER: Okay. So that is enough
10 of the preaching for the moment.

11 MR. WALTERS: No. It is good feedback.

12 Okay. Next slide, please. So what we're
13 thinking about on this first element is an industry
14 initiative. We've submitted our guidance document to
15 the NRC for endorsement. We had a pilot program to go
16 through the process you saw on the chart. We piloted
17 it at Hope Creek, North Anna, Braidwood, and South
18 Texas obviously, one in each region.

19 And the NRC was involved. They observed
20 some of those meetings that you saw. They looked at
21 the corrective action plans, but mostly it was
22 observing how the sites went through the process that
23 you saw in the chart. So they sat in on the meetings
24 and actually gave us feedback.

25 And we have subsequently identified some

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1 revisions that we would make to 09-07. And if this
2 goes forward, we will go ahead and make those changes
3 and resubmit the document.

4 There is a meeting on July 28 with the
5 staff to talk about the lessons learned from the
6 pilot. And I would tell you I will not speak for the
7 staff, but I will tell you that the feedback that we
8 have gotten from them is they do like this process.
9 They think it is a little more robust, it gives us
10 more information, there are more things to look at,
11 and we're going to continue to work with them on the
12 guidance document.

13 What has to happen, though, or what we are
14 looking to have happen is we are going to go to our
15 Nuclear Strategic Issue Advisory Committee, which is
16 one of the committees that Alex mentioned in his
17 opening remarks, to poll them or maybe get them to
18 consider an initiative in our world at NEI.

19 An industry initiative is when we go to
20 the CNOs and we actually ask them to vote. And if we
21 get 80 percent of the CNOs to vote in the affirmative,
22 then that initiative becomes binding on the industry.

23 So what that means in this case is we would ask them
24 to vote on an initiative to implement 09-07.

25 What I think will be fairly important in

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1 that discussion is whether we can get the NRC staff to
2 agree to suspend the SCCIs, the substantive
3 cross-cutting issues while we train the industry and
4 the implementation and we actually have some
5 inspections by the NRC. And our proposal is that if
6 we can get that, we would go ahead and start
7 implementing in the first quarter of 2011. That
8 discussion will occur on August 25th with the NCOs.

9 But, again, I think the message here is
10 that the pilot has worked well. We have learned a
11 lot. I think the NRC and we both agree that it is a
12 more robust process and gives us much better
13 information in terms of safety culture. And hopefully
14 we'll be moving forward with an initiative in this
15 area.

16 VICE CHAIRMAN ARMIJO: Why is the
17 suspension of the SCCIs? Is that a prerequisite or a
18 nice thing to do? Why would you want --

19 MR. WALTERS: Because we want to focus on
20 implementing 09-07. And we want to see and convince
21 ourselves and the NRC that the process that we have
22 laid out works. And I think having kind of the dual
23 path doesn't serve that purpose in our view.

24 VICE CHAIRMAN ARMIJO: Do you think it
25 interferes?

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1 MR. WALTERS: If they have a finding and
2 it has this human performance and procedure adherence
3 attribute assigned to it --

4 VICE CHAIRMAN ARMIJO: It will be
5 addressed in your process?

6 MR. WALTERS: It will still go into the
7 process, but, you know, if you get four of those, you
8 have got to take some additional actions. And we
9 don't want to go there if we're moving forward with a
10 -- I guess you could call it a pilot, but if we're
11 moving forward with this process, we would like to see
12 those SCCIs suspended.

13 MEMBER SIEBER: Well, if you are moving
14 forward with your process and your process is going
15 and it works, then it won't make any difference
16 whether you suspended that or not. So I don't see it
17 as a prerequisite.

18 MR. WALTERS: It is a distraction, though,
19 of resources.

20 MEMBER SIEBER: Could be. On the other
21 hand, somebody someplace has to get people's attention
22 to maintain the kind of safety standard that the
23 public demands.

24 MR. WALTERS: Yes. I am not going to say
25 it's a prerequisite. That's going to be up to the

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1 chief nuclear officers when we talk to them. But that
2 is a proposal that we will make.

3 MEMBER SIEBER: Yes. I would like to read
4 your documents because I think that we ought to have
5 some input to that.

6 MR. WALTERS: Okay. Next slide. This is
7 the second area that we're focused on, and it's common
8 methodology for self-assessing.

9 Let me explain the first bullet. The word
10 "dissatisfied" may be a little too strong or
11 misrepresented in that sentence. It's not that we
12 were dissatisfied with the outcome. There were a lot
13 of starts and stops with the safety culture assessment
14 that was conducted at Palo Verde. So it wasn't
15 dissatisfaction with the result. It was the
16 methodology was not such that we were able to just --
17 or they were able to start and move forward through
18 the -- to the end without some starts and restarts.

19 MEMBER SHACK: Now, was this the nuclear
20 safety culture assessment process manual that was
21 used? Is that what 95003 is?

22 MR. WALTERS: Yes. That is my -- yes. I
23 think that is what it is. Yes.

24 So our second area of focus is on
25 self-assessments. The USA is the acronym, has

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1 methodology that they have been using for quite some
2 time. So we were able to take that document. We made
3 some minor changes, I would say. And that was also
4 part, implementing that document was also part, of the
5 pilot program.

6 The only reason it was at three sites,
7 Hope Creek had already done a self-assessment when we
8 started this, which was back in November of 2009. And
9 so we didn't see much benefit in using the
10 self-assessment methodology at Hope Creek.

11 So, again, that's another element of the
12 process. We think that we are moving forward to come
13 to agreement on what that self-assessment process
14 looks like.

15 Again, I think the staff believes that it
16 is a good process. They have actually asked to out, I
17 think in September or October, to observe some more
18 panels and how this methodology might be working. And
19 we will accommodate that whenever it suits them, but
20 it will be in the late third or early fourth quarter.

21 Next slide. The last area that we're
22 focused on is common language. And I think, you know,
23 this is pretty self-explanatory. INPO has language
24 that they use relative to safety culture when they do
25 their plan evaluations. And, as I noted, that's

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1 integrated in their plan evaluation process. And the
2 NRC uses similar but different terminology related to
3 safety culture.

4 You may be aware that the NRC will publish
5 a policy statement on safety culture. And so they
6 actually are working almost directly with INPO. We
7 are involved to come up with common language so that
8 when the policy statement comes out, there's
9 consistency and it's understandable and we're not
10 confusing the industry.

11 MEMBER SIEBER: I think one of the other
12 effects is that often EPRI, NEI, INPO, NRC use the
13 same words with each one having a different meaning.

14 MR. WALTERS: Yes.

15 MEMBER SIEBER: And that's even more
16 insidious than the reverse, where you use different
17 terms to describe the same thing.

18 MR. WALTERS: And that concludes my
19 remarks. Thank you very much for the feedback. And
20 we'll get you those documents.

21 MEMBER SIEBER: Yes, please.

22 MR. WALTERS: What is next? Oh, security.
23 Okay. Alex said ten minutes. So I wasn't sure how
24 to slice and dice security because I know you're all
25 familiar with this particular issue and I think what

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1 both we and the NRC are dealing with.

2 But, again, this will be fairly high-level
3 for you. If it's not, if it's not known to you, this
4 just states what the requirements are. And it's
5 really to protect the public from exposure to a
6 radioactive release that may be caused by acts of
7 sabotage on the plant.

8 The NRC does get their authority on this,
9 by the way, from the Atomic Energy Act.

10 So let's go to the next slide. I just
11 wanted to give you a sense of perhaps some of the more
12 contemporary rulemakings that we are dealing with.
13 Design basis threat was modified in October of 2008.
14 We have a regulation, a new regulation, relatively new
15 one, on how you protect safeguards information.
16 Fitness for duty and fatigue management, part 26 is
17 another one. The more recent one is what I call the
18 comprehensive rulemaking on part 73, which included
19 Cyber Security, changes to the requirements for
20 physical protection and changes to the access
21 authorization requirements.

22 Some of those changes came out of the
23 Energy Policy Act of 2005. And some of the rulemaking
24 reflects what was in orders that the NRC had issued
25 after September 11th, but it's a very comprehensive

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1 rulemaking.

2 Implementation or compliance was March of
3 this year. And so a lot of sites are moving out on
4 making the necessary changes to meet the regulation.
5 And there were a number of supporting regulatory
6 guides. In fact, some of those are still in draft
7 form. And we are working with the staff to finalize
8 those.

9 I wanted to talk about structure for just
10 a second and give you a sense of what we're doing. I
11 apologize for including NPPD. I think I pulled this
12 from a different slide that I didn't catch that I had
13 that in there. I apologize for that. Nonetheless,
14 the message on the slide is the same.

15 These are the working groups and task
16 forces that we have actively engaged on security
17 issues for the industry. The biggest one I think
18 right now in terms of effort is probably in the cyber
19 area. That is something that I think we have only hit
20 the tip of the iceberg on, but we're working real hard
21 with the NRC staff on making sure we have the right
22 security controls on the critical digital assets in
23 the site. The security working group is the
24 over-arching group. And you can read the rest of
25 those.

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1 I did want to touch on, as I said, a
2 couple of the active issues. The enhanced force-on-
3 force significance determination process is one that
4 is very active and be happy to come back and give you
5 more details on this, obviously can't get into too
6 much because we have to protect safeguards, but you
7 know that the force-on-force inspection is the
8 crowning jewel of what we do in security.

9 We are working with the staff on how you
10 evaluate the significance of findings that may come up
11 in the force-on-force exercise. That's not to say
12 that we don't believe there should be findings. It's
13 merely to say that there are a lot of other activities
14 that occur in security outside of force-on-force.

15 For example, the rules require us, the
16 security organization, the officers, to do quarterly
17 drills. And every shift, typically five at a site,
18 has to do an annual exercise. Every third year, the
19 NRC will evaluate that. But on the off years, we're
20 doing annual exercises and quarterly drills. We do
21 training on the range. The regions do baseline
22 inspections.

23 So we're trying to take a more holistic
24 approach and say, how do you consider all of those
25 other things when you run a force-on-force? And

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1 perhaps the site's performance is not satisfactory or
2 there is some question about the site performance.

3 We are trying to take a holistic view and
4 say, well, is that what we would have expected given
5 all of the other things we see? So we and the staff
6 are working on this enhanced significance
7 determination process.

8 I had mentioned the part 73
9 implementation, number of changes that have to occur
10 at the site based on the rule. For example, you have
11 to have uninterruptible power supplies for some of
12 your lighting. So those changes are going on.

13 And, by the way, I mentioned that
14 compliance was March of this year. Compliance
15 included providing the NRC with a schedule of when you
16 would have changes made. So it wasn't that you had to
17 have everything in place by March.

18 Cyber Security, of course, is -- I'm
19 sorry?

20 MEMBER POWERS: Go ahead. You can finish
21 your sentence.

22 MR. WALTERS: Cyber Security, of course,
23 is a big issue. What we're dealing with there, you
24 may be aware that FERC has some jurisdictional
25 authority for cyber protection of assets that could

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1 cause a disturbance to the grid.

2 They and the NRC believe that there is
3 either an overlap in the gap or requirements. And so
4 we're trying to sort out which assets belong in which
5 bin and who is going to do what inspection. It's
6 pretty complicated. Again, we could give you a more
7 detailed presentation on that.

8 I will tell you that the industry's view
9 on that is we believe all of the digital assets,
10 including those in the balance of plant, that should
11 there be a cyber attack on them could cause a
12 disturbance on the grid, do screen in under the NRC
13 Cyber Security regulation.

14 We have written a letter to Chairman
15 Jaczko and Chairman Wellinghoff of FERC outlining that
16 position. And we're waiting for the response back.
17 But there is a lot of work being done in this area.

18 Security for dry cask storage, that is an
19 active issue because the NRC is looking at a separate
20 rulemaking for the security you would need at an
21 ISFSI. And that's in the early stages.

22 MEMBER POWERS: If I might come back to
23 your force-on-force, I think you're aware that the
24 Department of Energy has a great deal of interest in
25 -- well, a great deal -- some interest in moving

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1 forward on small modular reactors. And they recently
2 held a workshop to discuss what research would be
3 needed. And, of course, if you're in the business of
4 building small modular reactors, you're in the
5 business of trying to find ways to reduce your
6 workforce because otherwise they're a little
7 expensive.

8 And one of the areas was exactly this
9 force-on-force and the topic of could we replace
10 exercises with technology in that area of research.
11 Has NEI given any consideration to doing that sort of
12 thing?

13 MR. WALTERS: The answer is yes. We now
14 have a task force that is looking at a number of
15 issues related to small modular reactors. And
16 security is one of those.

17 MEMBER POWERS: Well, I was thinking of
18 using technology for our big reactors and --

19 MR. WALTERS: Well, yes. And an example
20 of that -- with regard to small reactors, the answer
21 is yes. And as that task force moves forward, they'll
22 look at how you could integrate technology into the
23 design to perhaps reduce number of security officers
24 or whatever the issue may be.

25 On the big plants, for example, one of the

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1 discussions that we have is what about if you used
2 remotely operated weapons. So you have a clamshell on
3 the corner, the side of the building, and you remotely
4 operate those. Some sites do have that.

5 MEMBER POWERS: One of the issues that we
6 encounter in protecting military bases and we run
7 exercises, of course, an exercise is a unit in time.
8 Lots of stochastic things happen in exercises. And so
9 you are left with okay. Is this particular group of
10 guards lucky? Is this group of guards particularly
11 unlucky or what happens if we change the scenario?
12 And, of course, those are unanswerable questions when
13 you are looking at an exercise.

14 I don't know. I mean, maybe things would
15 be different or are some of these technological
16 capabilities now you can go through and say okay.
17 Change the scenario. We've got a predictive thing
18 that comes out. And it says, well, verily this group
19 of guards was just lucky because small perturbations
20 is everything goes to heck or the other way around.
21 And we find that quite frequently.

22 My thought was, gee, if we did a few of
23 these things and found some reliability, maybe we
24 could get rid of some of these force-on-force
25 exercises and look at the physical layout and the

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1 manpower capabilities and things like that. And then
2 you could run literally hundreds of scenarios and see
3 where they marshaled or met the requirements.

4 MR. WALTERS: Right.

5 MEMBER POWERS: And certainly that in
6 protecting Air Force bases and things like that,
7 exactly what gets done nowadays is because you can run
8 exercises necessarily or large integral experiments.
9 And they have all of the defects and virtues of large
10 integral experiments. You just can't explore the
11 primer of space to the extent that you would like to.

12 MR. WALTERS: I think, yes, the concept I
13 think is a good one. We're not there yet. I'm not
14 sure we'll get there, I mean, but to your point, we
15 are looking at ways -- we have a technology task force
16 that is looking at it. And through NRC, actually, and
17 DHS, we have been able to plug into some of the
18 government groups that look at --

19 MEMBER POWERS: Yes. I mean, the
20 government has been --

21 MR. WALTERS: -- and say, "Okay. What
22 could we use?"

23 MEMBER POWERS: I know at least one
24 organization --

25 MR. WALTERS: Yes.

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1 MEMBER POWERS: -- that spent 25 years
2 developing these things for military applications.

3 MR. WALTERS: Right.

4 MEMBER POWERS: And especially when we
5 start talking about small modular reactors, if they
6 have any viability, you're going to have to reduce --

7 MR. WALTERS: Absolutely.

8 MEMBER POWERS: -- something about the
9 manpower about it because it's --

10 MR. WALTERS: Absolutely.

11 MEMBER POWERS: Otherwise they are just
12 economically infeasible.

13 MR. WALTERS: You are right.

14 I wanted to close. And I'll do so --

15 MEMBER POWERS: Yes.

16 MR. WALTERS: -- pretty rapidly to just
17 make you aware that we do work with the Department of
18 Homeland Security under what we call the Nuclear
19 Sector Coordinating Council. This actually came out
20 of a homeland security presidential directive 7 that
21 suggested DHS work with the private sector and, in
22 particular, the 17 or 18 sectors that exist and work
23 on them with the sectors on issues that in our case
24 would be beyond NRC's statutory requirement.

25 So we do have this Nuclear Sector

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1 Coordinating Council up and running. It gives us a
2 seat at the table with not only the Department of
3 Homeland Security but the FBI, DOE, the Coast Guard,
4 and others.

5 VICE CHAIRMAN ARMIJO: That's an NEI
6 standing committee?

7 MR. WALTERS: Yes. It meets quarterly.

8 VICE CHAIRMAN ARMIJO: And it's composed
9 of utility executives or NEI employees?

10 MR. WALTERS: Well, it's chaired by Mike
11 Wallace from Constellation. We facilitate. I think
12 we have somebody that's the secretariat for that
13 group. And then we have representatives from all the
14 -- from the entire nuclear sector. So the operating
15 reactors, we have research and test reactors
16 represented. We have the radiopharmaceutical group
17 represented.

18 VICE CHAIRMAN ARMIJO: Fuel cycle
19 facilities? Do you have any --

20 MR. WALTERS: Fuel cycle facilities, yeah,
21 transportation. And they meet quarterly.

22 There is a corresponding Government
23 Coordinating Council. And that is DHS, the NRC, and
24 others. And on the next slide, it just gives you a
25 sample of some of the initiatives, which I know don't

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1 mean much when you just see the words, but I would
2 point out, for example, we work on guidance for how we
3 would respond should we have a pandemic influenza.

4 So we have a guidance document we have
5 given to the licensees, gives them things to think
6 about should you be faced with a pandemic. What do
7 you do if you are in an outage? What do you do with
8 your suppliers, those kinds of things?

9 So the other thing I would point out and I
10 will conclude is that through the council, we do get
11 routine threat briefings. So DHS brings their threat
12 assessment folks over. And at the conclusion of our
13 quarterly meetings, we get a threat briefing from the
14 DHS folks. And that's extremely beneficial.

15 And with that, I thank you. And I guess
16 --

17 MEMBER POWERS: Before you run away, let
18 me ask you just one question. You have right now an
19 ongoing disaster on hazardous material taking place in
20 the southeastern part of the United States. And we
21 have had substantial public reaction to that. It's,
22 of course, outside the domain and control of NEI or
23 interests, but are there lessons to be learned from
24 what is going on there that are pertinent to the
25 nuclear enterprise?

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1 MR. WALTERS: Yes. In fact, we are right
2 now reviewing nine lessons learned from what is going
3 on down in the Gulf, specifically bringing it back to
4 nuclear. Most of it is focused on readiness for
5 communications, emergency preparedness, but it is
6 really -- and is the industry ready to respond in
7 terms of helping. So if my neighbor to the north --

8 MEMBER POWERS: Yes, yes.

9 MR. WALTERS: -- has the event, how can we
10 marshall the resources, like we do with linemen and
11 other things when there is an outage? You know,
12 companies will send.

13 So the answer is yes. We have nine
14 lessons learned we are looking at and --

15 MR. MARION: I might add our Executive
16 Committee is meeting on the 29th of July in Atlanta.
17 And this is one of the topics of discussion with them
18 in terms of what we picked up as lessons learned and
19 get their feedback and then try to figure out okay.
20 What is our next step?

21 And I think our next step is going to try
22 to do a couple of tabletop exercises. At least that
23 is our preliminary thinking at this particular point.

24 MEMBER POWERS: Well, it strikes me you
25 hit kind of the nail on the head when we say

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1 "cooperation within the industry."

2 MR. MARION: Yes.

3 MEMBER POWERS: I mean, you may have some
4 advantages in that you could have better spokesmen. I
5 mean, you guys have had your Gulf oil spill up in
6 Harrisburg. So maybe you have learned a lesson there
7 as far as the communications issue, if nothing else,
8 but the cooperation and I think it's --

9 MR. MARION: One interesting aspect of
10 this is social media and the impact that that has on
11 public perception. So the environment in terms of
12 communication and interaction is entirely different
13 today --

14 MEMBER POWERS: Yes.

15 MR. MARION: -- than it was in '79 with
16 Three Mile Island.

17 MEMBER POWERS: Absolutely. It couldn't
18 have been any worse.

19 MR. MARION: It will be a completely
20 different ball game, but that is something we are
21 looking at. We would be more than happy to brief you
22 on that topic sometime in the future if you would be
23 interested.

24 MEMBER POWERS: Yes. I think that would
25 be a worthwhile thing.

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1 MR. WALTERS: We are all getting Facebook
2 accounts and Twitter accounts.

3 (Laughter.)

4 MEMBER POWERS: You probably don't want to
5 do that. That may not be a good lesson there.

6 MR. WALTERS: Thank you very much.

7 MR. ANDERSEN: Good afternoon. What I
8 would like to do is give you a brief description of
9 the liquid energy, groundwater protection initiative.
10 As an initiative, as mentioned previously, this was
11 for our chief nuclear officers. Actually, it was
12 passed unanimously. And we implemented this program.

13 So I want to give you a little bit of the
14 overview and background and current state of affairs.

15 But I will also spend a couple of minutes reminding
16 both the Committee and others of the robust regulatory
17 framework that has always existed because I think that
18 context is often lost. And I read newspaper accounts
19 that imply that everything we do to protect public
20 health and safety is voluntary and that the NRC
21 doesn't have requirements. So I would like to touch
22 on that slightly as well.

23 The next slide. The true overall goal of
24 the initiative is to build stakeholder confidence
25 through early detection, prompt response, and timely

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1 factual communication.

2 Next slide. Briefly, the initiative
3 itself was born out of the very public stakeholder
4 concerns that were expressed surrounding events in
5 2005, primarily at Braidwood and Indian Point. And
6 although both events were thoroughly scrutinized by
7 the NRC with actually rather minimal regulatory
8 implications with one exception. And NRC formed its
9 own task force to look at this effort.

10 What we learned from it is that we really
11 had much to do to improve the interface with our
12 public so that they had a much better understanding of
13 context in which these events occur and better facts
14 with which to assess the significance and to reach
15 their own conclusions about whether these were issues
16 that they should truly be concerned about or not.

17 The way that we flowed from this is that
18 we actually interacted with the NRC and determined
19 that we should have a very public process that would
20 involve a broad range of stakeholders in developing
21 the details of the initiative.

22 We welcomed input from any and all
23 quarters. And many of the people who have provided
24 very constructive input frequently are seen more often
25 as among the usual suspects that generally oppose our

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1 industry, but we tried to create opportunities. And
2 they seized upon those to get their input and to try
3 to come out with an approach that at least would be
4 responsive to the range of concerns that people had.

5 Next slide, please. I will just mentioned
6 parenthetically that we actually had some 11 public
7 meetings on this subject. We now have in place our
8 detailed technical guidance for implementing the
9 groundwater protection initiatives. Both of these
10 documents, NEI 07-07 and the EPRI guideline technical
11 report 101-5118, are actually available through the
12 Public Document Room. We made sure that everything we
13 generated, to go to a point that you raised earlier,
14 including even our own white papers or technical
15 papers or other things, were pushed into the public
16 via the public meeting process. So they became
17 attachments to the records of the public meetings.
18 The goal, of course, was full disclosure.

19 The implementation of the process was
20 really twofold. We had initially an interim guideline
21 document we wanted to move rapidly to address the
22 issue. That was implemented as of July 31st, 2006.

23 Then we took the lessons learned out of
24 that experience. We actually had a couple of large
25 public workshops. And that's where we developed our

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1 final technical guidelines and then had a final
2 implementation date in 2008.

3 Next slide, please. So I am going to turn
4 for a moment to the extensive robust and well-proven
5 framework that NRC has always had in place for
6 regulating public health and safety. I list here a
7 number of the regulations that are in place. They're
8 old and ancient with some technical updating, but we
9 have lived by them. And most of them arise directly
10 out of Atomic Energy Commission requirements. So they
11 predate some of us at the table, if not all of us, in
12 their origins.

13 The thing that I would point out is the
14 last bullet of NRC regulations refers to appendix I
15 numeric guidance to mete as low as reasonable
16 achievable or ALARA.

17 The criteria that we work to are not the
18 radiation safety limit of 100 millirem per year, which
19 is established by the NRC to protect public health and
20 safety. The criteria that we work to actually
21 demonstrating that we are maintaining exposures are
22 below that at levels that are as low as reasonably
23 achievable.

24 These aren't numbers that were picked out
25 of the air. They were developed with some great

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1 amount of sophistication at their time. But in
2 general, one could say that they are reflective of the
3 Environmental Protection Agency concepts of use of
4 best available technology. That was kind of the
5 underlying philosophy, such that the numerical
6 criteria that we actually meet for our liquid
7 effluents inclusive of leaks or inadvertent discharges
8 of radioactive liquids actually is three millirem a
9 year. That is the criteria we are required to meet
10 before we get into an elevated interaction with the
11 NRC.

12 Compare that, for instance, to the safe
13 drinking water standard of the Environmental
14 Protection Agency. That is the standard for water
15 that can come out of your tap in your kitchen, which
16 actually is a level that is equivalent to four
17 millirem a year. So I would contend that we are held
18 to a higher standard than your local drinking water
19 company.

20 MEMBER RAY: Ralph, sorry to interrupt
21 you.

22 MR. ANDERSEN: Yes?

23 MEMBER RAY: I don't know the one
24 exception you are going to talk about that you
25 mentioned a long time ago, and I have been waiting to

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1 see. But you just now mentioned the word "leaks."

2 MR. ANDERSEN: Yes.

3 MEMBER RAY: Unmonitored leak path is
4 another thing you might call a leak, although a vacuum
5 breaker on the discharge line is obviously going to
6 leak. So whether that is by design or not, I don't
7 know, but isn't that the real issue here? I'm just
8 trying to feed back to your point about inclusive of
9 leaks is what you said. Well, talk about leaks.

10 MR. ANDERSEN: No. It's inclusive of.

11 MEMBER RAY: I thought you said exclusive
12 of leaks.

13 MR. ANDERSEN: If I did, I apologize. No.
14 The standard applies to routine operations, including
15 anticipated abnormal occurrences, which is inclusive
16 of leaks and so forth, anything short of a major
17 nuclear --

18 MEMBER RAY: Right. Maybe I
19 misunderstood, but --

20 MR. ANDERSEN: I apologize for that.

21 MEMBER RAY: No. That's all right.

22 MR. ANDERSEN: All of these releases,
23 whether it's "unmanaged," but I question even the use
24 of that phrase, I would say releases that are not
25 planned that are not specifically controlled.

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1 MEMBER RAY: It sounded like you were
2 trying to indicate that even those were safe enough
3 for drinking water standards.

4 MR. ANDERSEN: That's correct. They are.

5 MEMBER RAY: Right, but is that relevant,
6 really?

7 MEMBER SIEBER: It is not.

8 MR. ANDERSEN: When you say is it
9 "relevant," relevant to what, relevant to assuring
10 public health and safety?

11 MEMBER RAY: No. I mean relevant to what
12 our respective jobs are; in other words, to simply
13 demonstrate that an unmonitored release didn't result
14 in excessive radiation exposure to somebody.

15 MR. ANDERSEN: No.

16 MEMBER RAY: Are you really suggesting
17 that that's --

18 MR. ANDERSEN: No, not in any way.
19 Obviously our objective is to control and monitor
20 radioactivity at all times.

21 MEMBER RAY: Right.

22 MR. ANDERSEN: And you should --

23 MEMBER RAY: So, I mean, that ought to be
24 the focus I think of the discussion, shouldn't it,
25 rather than -- I mean, we all understand how low the

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1 exposures are that result from these sorts of things,
2 but that doesn't diminish the significance of them, it
3 doesn't seem like to me.

4 MR. ANDERSEN: I don't think it diminishes
5 the significance of them, Harold, but what I do think
6 that it does is it allows us to put that significance
7 in a proper context because in this room and in this
8 agency, when we use the word "significance," it is
9 typically directly related to risk and safety and to
10 the Atomic Energy Act.

11 MEMBER RAY: Right. Go ahead, but it just
12 seems to me like we're not focusing on what needs to
13 be focused on, which I think industry has done. I'm
14 not questioning that. But, I mean, you know, the real
15 issue is, like I said, unmonitored releases to the
16 environment seem to be another error to deal with a
17 problem.

18 MR. ANDERSEN: I guess the reason I
19 mentioned what I had mentioned earlier is the use of
20 the word "unmonitored" releases to the environment --

21 MEMBER RAY: Stuff that gets where it's
22 not supposed to be.

23 MR. ANDERSEN: And that I feel much more
24 comfortable with. The implication that these are
25 unmonitored I think is technically incorrect in most

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1 cases. We have actually had --

2 MEMBER RAY: But you said Braidwood
3 doesn't fall in that category?

4 MR. ANDERSEN: No. They monitored it
5 fully. They just did not utilize the information that
6 they had available to them to follow through and do
7 the assessments that they should have done.

8 MEMBER RAY: They didn't know their vacuum
9 breakers were leaking, did they?

10 MR. ANDERSEN: I beg your pardon?

11 MEMBER RAY: They didn't know the vacuum
12 breakers were leaking?

13 MEMBER SIEBER: That's right.

14 MR. ANDERSEN: In fact, they did.

15 MEMBER RAY: Well, then that's not what
16 they told us. But okay.

17 MR. ANDERSEN: In fact, they precisely
18 quantified the amount of leakage at the time. And
19 they precisely quantified --

20 MEMBER SIEBER: The very first time the
21 vacuum breaker operated and leaked, they knew it?

22 MR. ANDERSEN: I'm sorry?

23 MEMBER SIEBER: The very first time the
24 vacuum breaker operated and leaked, they knew it?

25 MR. ANDERSEN: I'm not saying that, no.

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1 MEMBER SIEBER: Okay.

2 MR. ANDERSEN: What I'm saying is --

3 MEMBER SIEBER: So it's an unmonitored
4 release. We should move on.

5 MEMBER RAY: Yes. We should move on.
6 Sorry about --

7 MR. ANDERSEN: The other point I would
8 make is that, in fact, we are required to monitor and
9 control our releases. And that includes releases that
10 occur. Even though that assessment may occur after
11 the fact, the point is we are required to have in
12 place the means to conduct that assessment where we
13 are finding that it is not available.

14 I'm not trying to mince words. I'm just
15 trying to say that the controls that we put in place
16 allow for the fact that such inadvertent releases may
17 occur. And we have two obligations. One is via our
18 control of inventory and systems is to assure
19 ourselves that should those leaks occur, that they
20 would not exceed our criteria; and, secondly, to be
21 able to reconstruct the necessary information to prove
22 that, even though after the fact.

23 And that's where I was really trying to go
24 with the issue of Braidwood, that they did have the
25 sufficient information to construct after the fact

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1 what occurred. What they didn't do was follow through
2 with that information and understand the implications
3 of the events that occurred. And, in fact, annually
4 we are required to report any of those inadvertent
5 releases that occur, including the assessment of
6 impact on the public for those releases.

7 Next slide, please. The point here really
8 is that what the initiative does is it doesn't
9 introduce something that is new. What it really does
10 is build upon the existing NRC requirements for
11 monitoring and controlling the radioactivity by
12 increasing the scope of monitoring that we do and the
13 sensitivity of monitoring that we do, informed by a
14 geohydrological assessment of the site and a risk
15 assessment of our systems, structures, and components,
16 and our work practices to understand where such leaks
17 might occur and where the strategic points would be
18 for monitoring, primarily monitoring wells to identify
19 such leakage early. That's in addition to looking at
20 opportunities for improving leak detection on the
21 systems themselves.

22 That then allows us to identify these
23 leaks before they are discharged off the site and to
24 take action to prevent them from being released off
25 the site and to put in place the appropriate

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1 responsive actions, not only to fix the leak but to
2 determine the appropriate remedies for addressing any
3 contamination of the groundwater or of the soil.

4 The additional component, of course,
5 throughout this entire process is to ensure full
6 friendly disclosure of what has occurred and what we
7 are doing about it such that within one business day
8 of identifying an elevated sample result, we
9 communicate with our stakeholders and we communicate
10 with the NRC to make them aware that we have an
11 anomaly that we're investigating.

12 Our initiative calls for a formal report
13 at the end of 30 days that describes all of the
14 actions taken and plans for further action. And, of
15 course, updates actually typically occur much more
16 frequently in between those two milestones. And then
17 annually we disclose a full evaluation of the event,
18 actions taken, and impact in our required public
19 annual effluent reports.

20 The last slide. Looking forward into the
21 future, in essence, it's a process of continuous
22 improvement, but probably the largest new extension if
23 you wish to look at it by way of the program is much
24 more aimed at the issue of prevention through the
25 buried piping integrity initiative.

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1 But, in addition to that, we continue to
2 look at how we can improve our monitoring processes
3 and, additionally, how we might need to make
4 additional changes to NRC policy or the regulatory
5 framework to address the issue. We have completed our
6 first peer assessment process. That is a requirement
7 within our initiative. Every five years we conduct a
8 peer assessment of all of the plants using people from
9 other plants to review the performance of their peers.

10 We, in fact, will be submitting a summary report of
11 that peer assessment to the NRC a little later this
12 year.

13 I didn't want to stifle the previous
14 conversation. And, in fact, I am quite happy or
15 willing to return to that. But that, in essence, is
16 the groundwater protection initiative.

17 CHAIRMAN ABDEL-KHALIK: I was actually
18 surprised by your very first slide in terms of your
19 overall objectives, that you didn't list prevention as
20 one of your overall objectives.

21 MR. ANDERSEN: Although prevention is an
22 element of the groundwater protection initiative,
23 quite frankly, the very first action that we thought
24 we needed to take was prevention at the level of
25 preventing the material from getting off site into the

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2 CHAIRMAN ABDEL-KHALIK: But your
3 objectives there are essentially PR objectives.

4 MEMBER SIEBER: Not particularly good
5 ones.

6 MR. ANDERSEN: I hope that \$150 million
7 later, that that is not all that --

8 CHAIRMAN ABDEL-KHALIK: Well, that's what
9 they came across to me as.

10 MR. ANDERSEN: I appreciate that. I would
11 like to just go back to that slide.

12 MEMBER RAY: That was, in essence, what I
13 was trying to say, but I thought he was going to get
14 to the other part.

15 MEMBER SIEBER: Well, from a PR
16 standpoint, it is not particularly good because you
17 are saying we had this leak, but you aren't going to
18 get sick from it. We don't think from a PR
19 standpoint, that doesn't go very well.

20 MR. ANDERSEN: Yes. And I think that we
21 are learning a lot in that regard. So I appreciate
22 that point. Item number one was the wording that was
23 selected at the time. Item number one actually
24 describes the technical program that was put in place
25 for prompt identification and responses to leaks

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1 should they occur as well as evaluating opportunities
2 for improved leak detection within the system.

3 So if item number one appears to be a PR
4 objective, that is a deficiency in the wording that we
5 selected but not in the substance of the program that
6 we implemented.

7 CHAIRMAN ABDEL-KHALIK: It may very well
8 be, but that's the way it came across.

9 MR. ANDERSEN: I can appreciate that.

10 VICE CHAIRMAN ARMIJO: I guess I saw
11 improve the management of the situation as broader
12 than just PR. It's, you know, identifying what is
13 going on, fixing what is going on. And then item two
14 is communicating what is going on.

15 MR. ANDERSEN: Yes.

16 VICE CHAIRMAN ARMIJO: So it depends how
17 one is reading it, I guess.

18 MR. ANDERSEN: Yes. It is intended that
19 way, but I can't dispute that. But that isn't the way
20 I read it. So I'll have to take that back and ponder
21 that.

22 MEMBER RAY: Go ahead, Mike.

23 MEMBER RYAN: I guess one of the things
24 that comes across to me, I have taken a hard look at
25 this issue, as you know, Ralph. I have taken note of

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1 the fact that many utilities have done very extensive
2 studies at their sites, geohydrologic and surface
3 monitoring and all the rest, to really come up with a
4 baseline assessment.

5 MR. ANDERSEN: Yes.

6 MEMBER RYAN: Where are we right now? I
7 think that to me, at least in part, addresses what the
8 Chairman has asked about, that there is I think a
9 pretty serious and important initiative to understand
10 where things sit today at power plants and then if
11 problems are identified, to address them
12 appropriately, --

13 MR. ANDERSEN: Right.

14 MEMBER RYAN: -- point the specific --

15 MR. ANDERSEN: Yes. There was a slide --

16 MEMBER RYAN: -- with issues they have
17 addressed.

18 MR. ANDERSEN: In fact, there was a slide
19 in the packet there that describes that. Again,
20 trying to stay at a fairly high level, I didn't burrow
21 into those details, but, rather, the process of
22 implementing this was actually very exhaustive in
23 terms of both doing the geohydrological surveys, doing
24 the very detailed evaluations of the systems,
25 structures, and components, and then implementing in

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1 many cases a very extensive network of monitoring.

2 MEMBER RYAN: The one second point I would
3 offer and leave you with is that now that we have
4 these baseline studies, I think we are in good shape
5 to address releases to groundwater, either through
6 pipes or pipes that don't work properly or other sorts
7 of releases of material sitting on the surface that
8 leach over time. Those things happen for lots of
9 reasons.

10 To me, it is the inadvertent
11 identification of material you didn't expect that
12 really creates this public relations problem. It's
13 not the quantity. It's the fact that we've got an
14 environmental sample where we expected nothing and
15 then something important there to follow up on.

16 So I think the idea to me that needs to
17 get captured is it needs to be a very proactive kind
18 of monitoring program that puts you in front of
19 anything happening, you know, where you can have these
20 problems or you can identify them as early as possible
21 so they get out ahead and it's not a 10 or a
22 20-year-old problem when you're trying to --

23 MEMBER BLEY: I would like to go back to
24 Said's original question because we slipped into the
25 PR side of it in a hurry. I mean, you don't have

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1 reducing the likelihood of an objective. And he asked
2 you why that was, and I don't recall what you said
3 because I got drifting off in this other --

4 MEMBER RAY: Well, they have done a lot.

5 MEMBER BLEY: I know they have done a lot.

6 MEMBER RAY: And that's where I raise --

7 MEMBER BLEY: Are you saying they have
8 done enough?

9 MEMBER RAY: Well, I don't know. I'd like
10 to hear that.

11 MR. ANDERSEN: I was going towards that
12 distinction. And, again, for candor and full
13 disclosure, reducing the likelihood of such
14 occurrences in the first place was not the primary
15 initial objective of the initiative because what we
16 were dealing with on the front end was monitoring the
17 release via results in an off-site drinking water well
18 in Illinois.

19 Now, it sort of takes us back to our
20 previous discussion. That monitoring result was not a
21 fluke. It was part of a required regulatory program
22 for conducting such monitoring in a pathway to human
23 beings to ensure that we were maintaining those doses
24 within those criteria.

25 To that extent, that was a successful

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1 monitoring result. To the extent of any timely action
2 or knowing that the vacuum breakers leaked in the
3 first place and so forth was completely inadequate.

4 So the emphasis in the groundwater
5 protection initiative primarily was to put in place a
6 monitoring program that would identify such problems
7 before they ever left the site and became a problem
8 for our neighbors.

9 Buried within the initiative -- and I do
10 say "buried." It is in -- that's a wrong word to use.

11 (Laughter.)

12 MEMBER RAY: Embedded. How about
13 embedded?

14 MR. ANDERSEN: -- was a long-range goal to
15 look at enhancing prevention. That long-range goal
16 really is what is morphed into the buried piping
17 initiative. The systems that --

18 MEMBER BLEY: Thanks. I was hoping to get
19 that.

20 MR. ANDERSEN: Yes. And in that sense, it
21 became an outgrowth of the groundwater protection
22 initiative, but, you know, I've got to be honest to
23 tell you that, although prevention was completely
24 recognized as essential in the long term, our initial
25 activity and investment, which was very intensive, I

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1 didn't pull the number \$250 million out of the air.
2 That's fairly accurate as of about the end of last
3 year as to what we have invested as an industry in
4 just this initiative, not the buried piping
5 initiative.

6 So let's say that we have done \$250
7 million of monitoring enhancements if you want to
8 think of it that way and leak detection enhancements.

9 I suspect that before it is done -- and done may be
10 some point in the future -- the buried piping
11 initiative will make that seem like packaging. It is
12 going to be a substantial capital investment by the
13 time we carry to the goal and the standard of leak
14 prevention in the way that we would understand it in
15 our nuclear contracts.

16 Yes?

17 MEMBER RYAN: Ralph, I have just one more
18 point to round out the discussion. And I appreciate
19 what you just said. But it seems, too, that we have
20 to address the fact that we have got a couple of
21 different numerical goals that we target based on what
22 we're talking about. Groundwater is one standard.
23 Those calculate the theoretical receptor is a higher
24 number and so on. Do you have any insights as to what
25 we do with this disparity of numbers --

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1 MEMBER SIEBER: Between? Sure.

2 MEMBER RYAN: Groundwater standard and --

3 MEMBER SIEBER: Title 10 and title 40.

4 MEMBER RYAN: That's not standard for a
5 licensee and so forth.

6 MEMBER SIEBER: Yes.

7 MR. ANDERSEN: Yes. We had this
8 discussion at the regulatory information conference.
9 And as a result of working with one of our task forces
10 at one of our working groups, I put forward our
11 promise that we really ought to have a single number.

12 Give the licensee, then, the -- we have a
13 single overall dose number, which is unlikely to
14 change with our upcoming revision to radiation
15 protection regulations. But in terms of the appendix
16 I criteria that were developed quite some time ago
17 with different underlying technical methodologies,
18 which gives rise to the different numbers, as Mike is
19 aware, the opportunity exists today really to boil
20 those down to a single number, which we would rather
21 see, than allowing the licensee the flexibility to
22 decide how to parse that number out within their
23 operational issues. The desire would be to strive
24 towards a single overall number that represents as low
25 as reasonably achievable.

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1 MEMBER SIEBER: Thank you.

2 MR. MARION: If I may just offer one last
3 thought? This initiative and all of the activities
4 associated with it are continuing and will continue.
5 And we will be doing peer assessments every five
6 years. Utilities are required to do annual
7 assessments.

8 We will be incorporating some of the
9 lessons learned from our peer assessment activity into
10 changes in the guidance document to provide further
11 clarification. And we talked about buried piping very
12 briefly. And sometime in the future, I suspect
13 towards the end of the year, maybe the beginning part
14 of 2011, we may integrate these two initiatives
15 because we are finding that that is probably extremely
16 important to make sure that we are all dealing with
17 the same thing with the same understanding, the same
18 acceptance criteria, et cetera, et cetera. So you
19 will be hearing more about this in the future.

20 Okay.

21 MR. ANDERSEN: Can I just make --

22 MR. MARION: Sure.

23 MR. ANDERSEN: -- one last closing
24 comment? When I look back, probably our largest
25 lesson learned is our failure to recognize that by

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1 greatly increasing our monitoring and greatly
2 increasing our notification of the public, that
3 obviously we would create the impression of a large
4 number of events occurring.

5 Since Braidwood and Indian Point, there
6 has not been one event that has occurred that would
7 have required reporting to the NRC under its current
8 regulations. And there are a number of events which
9 would not have been detected that early in the process
10 with our previous required monitoring methods because
11 we have reduced the sensitivities to such a low level.

12 They still would have assured meeting dose
13 requirements.

14 But we really failed to account for that
15 in moving forward. And so in a sense, we're in kind
16 of a reactive mode to try to come around for the fact
17 that obviously we are going to identify a lot more
18 issues and need to have a better thought process in
19 not only how we communicate them, in how we gather
20 that information, gather to determine what the
21 implications are either for monitoring or leak
22 prevention. And that's the process for him right now.

23 MEMBER SIEBER: Okay.

24 MR. MARION: All right. Thanks, Ralph.
25 John?

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1 MEMBER SIEBER: We have two more subjects
2 to go?

3 MR. BUTLER: The next two topics, fire
4 protection and GSI-191, this Committee has had some
5 involvement through the years in these topics. My
6 intention is not to go into a lot of detail but
7 primarily just to whet your appetite. And I say that
8 in that I think on both of these topics, there will be
9 opportunities hopefully in the coming months for us to
10 give you a little bit more detailed briefing of our
11 activities and at least our views on certain
12 activities.

13 In the fire protection area, there are two
14 main areas of tension: NFPA 805 and in fire-induced
15 circuit failures. Eight-o-five is important to
16 approximately half of the industry with fire-induced
17 circuit failures and the activities to resolve that
18 important to the other half of the industry, NEI's
19 involvement in both areas of activity, especially with
20 working with the staff to come to a level of agreement
21 on how we need to resolve these two issues.

22 With 805, the regulation that allows us to
23 utilize a risk-informed performance-based regulation
24 came into effect in 2004. Since then, we have two
25 pilot stations that have been implementing NFPA 805 as

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1 part of their fire protection program. The Harris
2 Station actually received their safety evaluation in
3 June of this year.

4 MEMBER SIEBER: Right.

5 MR. BUTLER: Ocone Station is expected to
6 receive their SE in the fourth quarter of this year.
7 There are 32 stations that are transitioning to 805 or
8 have committed to transition to 805. They have been
9 very closely following the Harris and Ocone pilot
10 processes. What drives them to follow this very
11 closely is the fact that the enforcement discretion
12 period for any issues in their fire protection
13 programs, enforcement discretion that comes with
14 transition to 805 actually only extends to six months
15 after the Ocone SE is issued. So the process of
16 transitioning to 805 is a little bit more than a
17 six-month process. So they have been very closely
18 following this and actually shadow piloting the
19 transition process along with Harris and Ocone.

20 So this issue is not unlike a number of
21 other issues, where we have situations where firm
22 schedules are in place and they seem to drive a lot
23 more of our activities than I would think would be
24 necessary in some communications, but schedules have
25 been set. And people are trying to meet those

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1 schedules.

2 Next slide.

3 MEMBER BLEY: Can you say a few things
4 about that? I mean, two areas I am primarily
5 interested in, one is I have heard those numbers may
6 be shifting, the number of people who are going
7 forward with this.

8 And the other one, we have heard some
9 folks talking about how expensive this was for Harris
10 and Ocone and that it didn't look like a payoff.
11 And, yet, the Harris people, as I recall, maybe
12 Ocone, too, told us they thought on a net basis, they
13 got a net savings out of this because of things they
14 were able to do, despite the expensive of it. Can you
15 say anything about either of those?

16 MR. BUTLER: Well, this is an expensive
17 transition process. The cost of doing all of the
18 evaluations and preparing the fire PRA modeling --
19 other than saying it is expensive. It is expensive.
20 There is no doubt in that part of the process.

21 In Harris' case, I don't know, you know,
22 what the final result will be. I'm not sure that
23 Harris actually knows what the final result is.

24 One of the situations we are dealing with
25 right now is a number of plants want to get through

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1 this process. They're not looking to have any delays
2 in this process at all because the longer you keep
3 contractors working, the more it costs.

4 So the only way to minimize the cost and
5 control the cost is to get through the process. So
6 that's playing into everybody's efforts to try to get
7 a clear guidance developed and finalized so that they
8 can get their LARs submitted and get on with it.

9 But there are other challenges we're
10 dealing with.

11 MEMBER BLEY: Okay.

12 MR. BUTLER: So the next slide actually
13 gets into those challenges.

14 MEMBER SIEBER: I might say that the cost
15 is sort of irrelevant because it's voluntary whether
16 you take this course or that course. So they decided
17 to make that investment.

18 MR. BUTLER: Well, it does go to the point
19 that this is voluntary.

20 MEMBER SIEBER: It's their decision.

21 MR. BUTLER: So if the cost, part of that,
22 which there are other factors that play into a
23 decision whether you go with 805 or not. But cost is
24 naturally a factor.

25 MEMBER SIEBER: It's a business decision.

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1 MR. BUTLER: In fact becomes an
2 overwhelming part of the decision process. There is a
3 possibility to withdraw from 805.

4 MEMBER SIEBER: Right.

5 MR. BUTLER: Now I don't anticipate at
6 this point that there's going to be a mass withdrawal
7 from 805.

8 MEMBER STETKAR: There's been at least one
9 site though that was announced that they're
10 withdrawing. It's not --

11 MR. BUTLER: There's been one site, yes.

12 MEMBER STETKAR: Do you know? Was that
13 cost related or other?

14 MR. MARION: I spoke with their chief
15 nuclear officer last week about it as a matter of fact
16 and I think they jumped into this transition
17 prematurely without really evaluating what their value
18 proposition was. And they concluded that they're
19 finally in compliance with Appendix R.

20 MEMBER STETKAR: Okay.

21 MR. MARION: And don't envision any kind
22 of potential issues arising either out of the circuits
23 or the operator manual action.

24 MEMBER STETKAR: Okay. Activities.

25 MR. BUTLER: The original decision was

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1 made as part of a fleet transition effort and because
2 of the way some plants are no longer a part of that
3 fleet.

4 MEMBER STETKAR: Okay.

5 MR. BUTLER: So that no longer bears to
6 the decision.

7 MEMBER SIEBER: Right. Okay.

8 MR. BUTLER: Two of the challenges we're
9 dealing with with 805 the fire PRA modeling is a
10 challenge. I think it's fair to say that the fire PRA
11 models are not to the level of maturity that we've
12 become accustomed to in the internal events PRA. So
13 that's presenting some challenges where the fire PRA
14 results are clearly conservative or at least not
15 consistent with our own experience with fire
16 initiation rates and --

17 MEMBER SIEBER: Real fires.

18 MR. BUTLER: Real fires. So how do you
19 deal with those PRA results in a risk-informed process
20 because it does use those PRA results to tell you what
21 needs to change in the plant design. So we're dealing
22 with that.

23 Obviously, the one thing we need to do is
24 improve the PRA models. So there's a separate
25 activity that's underway at least on the industry

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1 side. I know that NRC Research has a very active
2 process to continue to improve the models. So we just
3 need to find a way to do that as expeditiously as
4 possible.

5 Resources, both on the industry side and
6 the NRC side, it's continued to be a challenge. PRA
7 resources you know there's only a limited number of
8 PRA resources right now. So you've got to find the
9 best way to utilize those resources across the
10 industry. Fires PRA is not the only place that PRA
11 analysts are paying attention to right now. So we
12 just need to find a way to best utilize those
13 resources and still meet the schedules that have been
14 established.

15 And you mentioned the significant cost.
16 That is something that was recognized going into this.
17 It just continues to surprise us. Next slide.

18 Circuit failures. This is kind of the
19 main focus area for all the plants that are not
20 transitioning to 805 right now which is approximately
21 half the industry. The guidance that was put together
22 to provide the methodology for identifying multiple
23 spurious operations and how to deal with those circuit
24 failures was put together in close consultation with
25 NRC on the process that they would find acceptable.

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1 That guidance document came out, finalized last year,
2 with the NRC reg. guide, Reg. Guide 189, endorsing
3 with relatively few exceptions the NEI guidance
4 document.

5 The industry has been implementing that
6 guidance. Again, we're in a process where there is a
7 set schedule for getting things accomplished in order
8 to take full advantage of the endorsement discretion
9 period. Plants utilizing this process had until May
10 2nd of this year to identify their non compliances and
11 now they have another 30 months from that period to
12 make any plant design changes to correct those non
13 compliances. Next slide.

14 So some of the challenges we're dealing
15 with other than this is a new process and there's
16 always a learning process with anything new. One
17 thing I guess we had not fully appreciated going into
18 this was we developed a process where we had a generic
19 list of multiple spurious operations that each plant
20 would go in and evaluate whether it's adaptable to
21 their design and go through that process to identify
22 any other plant-specific MSOs that they needed to
23 address. So they went through that.

24 In the process of doing that, there have
25 been new generic MSOs that have been identified and

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1 we're trying to figure out the best way to deal with
2 those in that the enforcement discretion period said
3 you will have identified all your MSOs by May 2nd. So
4 if you identified something on May 3rd, is there an
5 expectation that you have that in your corrective
6 action program immediately or is there a time lag, you
7 know, an allowance for making sure it's truly a
8 generic MSOs and applicable to your plant? So we're
9 kind of working through the best way to deal with that
10 inevitability.

11 I think the biggest challenge is going to
12 be once you've identified the non compliances, getting
13 those corrected within a relatively short time period
14 when you take into account that you need to go through
15 all the engineering work to evaluate the best way to
16 correct your design or to change your design and to
17 get that in your process to be addressed at your next
18 available outage which for the most part these are
19 changes that need to be addressed during the outages.

20 It becomes challenging because you do need
21 a significant amount of lead time to do the
22 engineering work. And then there's a lead time
23 associated with getting something scheduled for an
24 outage. So it's going to be challenge for a number of
25 plants. We'll just have a way, the best way, to deal

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1 with it. Next slide.

2 If you'll allow me, I'll move into GSI-
3 191, but.

4 MEMBER SIEBER: This should take no time
5 at all, right?

6 (Off the record comments.)

7 MR. BUTLER: Before I leave the fire
8 protection area, I know that there was an SRM that
9 this Committee received to take a look at 805 and
10 probably fire PRAs in particular. We're willing and
11 hoping that you'll look to us to come in and brief
12 this Committee at the appropriate time or at the
13 appropriate subcommittees. It's a topic that I think
14 I would hope that you would provide a sufficient
15 amount of time. I think we could probably take a full
16 day on fire PRA alone.

17 MEMBER STETKAR: We're just even as we
18 speak in the process of sort of formulating our
19 approach on how we're going to address that SRM. And
20 what I can say right now is we hope to involve you.
21 Precisely how we do that and form that, we're going to
22 have subcommittee meetings.

23 MR. BUTLER: We're already moving in the
24 direction and I hope that you'll let us brief you.

25 MEMBER STETKAR: You'll be contacted.

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1 (Laughter.)

2 MR. BUTLER: We're prepared for that day.

3 MEMBER STETKAR: Okay.

4 MEMBER POWERS: Let me toss my vote in.
5 If you want to spend a day on fire PRA, I'm willing to
6 listen because I don't -- I just continuously do not
7 believe that fire risk poses the risk the current PRAs
8 give to us. I just cannot believe that.

9 The other question I have for you is on
10 circuit analysis. Is there any reason we can't
11 computerize the circuit analysis through the routing
12 of cables?

13 MR. BUTLER: I don't know the answer to
14 that.

15 MEMBER POWERS: I mean if there's anything
16 that should be subject to computerization it would
17 seem circuit analysis is if you know which cables go
18 through the fire areas.

19 MR. MARION: You mean location wise.

20 MEMBER POWERS: Yes.

21 MR. MARION: And maybe --

22 MEMBER SIEBER: Yes, if you have pull
23 tickets, you're okay. If you don't, it's a hunt and
24 search.

25 MR. MARION: Yes. Some utilities have

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1 that system or that capability computerized in a
2 database.

3 MEMBER SIEBER: Yes, we had it.

4 MR. MARION: Others do not. They have
5 hard copy documents that they have to go through
6 manually.

7 MEMBER POWERS: I mean it seems to me we
8 ought to be able to do end, failure, shorts and things
9 like that with a computer in a twinkling of an eyeball
10 if we knew where the cables went.

11 MEMBER SIEBER: Yes, it's very easy.

12 MEMBER BROWN: Dana, that technology, I
13 think people use it in ships. They run the cables in
14 the new ships by --

15 MEMBER POWERS: Well, you tend to be
16 shunned to find out most of these plants don't float.

17 (Laughter.)

18 MEMBER BROWN: Well, cable doesn't care
19 whether it floats or not, Dana. If they go through a
20 bulkhead or a wall or a float.

21 MEMBER SIEBER: Okay. Your point is
22 taken.

23 MR. MARION: We look forward to future
24 discussion on this topic.

25 MEMBER POWERS: I hope you can discuss

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1 this fire PRA and just understand -- I mean, it seems
2 to me that this is an area where it serves both the
3 NRC's interest and the industry's interest to get
4 state-of-the-art capabilities that do match what we
5 expect in internal events because this has been going
6 on for as long as I've been on the Committee. And I
7 just don't believe the results we're getting.

8 MR. BUTLER: Speaking of longstanding
9 issues, GSI-191, we'll just very briefly touch on
10 this. Again, I think we'll have an opportunity. I
11 hope to have an opportunity to brief this Committee in
12 a little more detail on all our activities in this
13 area or, at least, our views in this area.

14 But it's a longstanding issue. Let me
15 make it clear that as for the issue as how it
16 addresses PRAs the industry has been very proactive in
17 trying to address the safety significance of GSI-191.

18 We applied a very conservative, deterministic
19 methodology, made numerous plant modifications. Every
20 plant, every PWR, has installed a significantly larger
21 strainer, orders of magnitude larger than what they
22 originally had in their designs. And there are number
23 of other modifications that the plants have made.
24 Next slide.

25 The actions in the last couple years are

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1 primarily focused on trying to reach resolution on
2 questions that have been raised on the actions and
3 methodologies that have been used by each plant in
4 resolving this, well over a couple of thousands RAIs
5 that have been asked on the individual plant
6 submittals that have been made on GSI-191.

7 Our difficulty and there have been a
8 number of difficulties. I won't say it's a
9 difficulty. But you know a lot of it can be
10 attributed to the fact that the resolution methodology
11 that has been applied by a number of plants has been
12 applied in a very conservative fashion to divide this
13 issue into 13 different areas and each one
14 conservatively. The combined impact of that
15 conservatism treatment while individually would not
16 have been perceived as an overly conservative
17 assumption for a particular area, the combined impact
18 of that treatment on all areas give you a result
19 that's very difficult to deal with.

20 So when a particular question comes up on
21 a particular area that you're having difficulty
22 reaching resolution it's difficult to say the overall
23 treatment is clearly conservative because it's just
24 been a trying process.

25 We do know that we've addressed the safety

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1 significance of the issue. We probably don't have any
2 issues with the breaks that are less than 12 inches.
3 But this issue becomes very difficult for the full
4 double-ended large breaks and that's what we're trying
5 to resolve. But that's the breaks that have the least
6 risk significance. So that's where we stand.

7 MEMBER SIEBER: The least probability of
8 occurrence.

9 MR. BUTLER: Yes.

10 MEMBER SIEBER: As opposed to risk
11 significance.

12 MR. BUTLER: Well, I can get back to that
13 point. No, I said what I said deliberately. I'm not
14 just looking at the frequency.

15 But where do we stand right now? There's
16 a Commission briefing on April 15th where we pointed
17 out the current situation that I tried to lay out for
18 you where we've done what we can and to go further
19 will require a lot of actions that have probably
20 greater risk significance than what we're dealing with
21 right now with the issues.

22 The Commission has requested the NRC staff
23 to prepare an option paper as a result of that April
24 15th briefing. That option paper is due to the
25 Commission August 27th. I believe there is a

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1 subcommittee meeting scheduled for September 7th. Now
2 I'm hoping that Dr. Banerjee will provide some
3 opportunity for us to come in and speak at that
4 subcommittee meeting if possible.

5 MEMBER BANERJEE: Would you like to?

6 MR. BUTLER: I would love to.

7 (Off the record comments.)

8 MEMBER BANERJEE: I think we can schedule
9 it.

10 MR. BUTLER: All right. So we'll be
11 prepared on September 7th to speak to whatever options
12 the staff put forward in that paper. And there's a
13 Commission briefing on this topic scheduled for
14 September 28th, I guess, to take into account ACRS
15 views and industry views and staff views on the
16 various options remaining on this issue.

17 That may be the last slide.

18 MR. MARION: That completes what we wanted
19 to cover and we look forward to any future
20 interactions on these topics. There are 34 other
21 issues that we're managing within the Nuclear
22 Generation Division.

23 So that completes our session for this
24 afternoon. Thank you very much.

25 MEMBER SIEBER: Thank you very much and I

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1 personally appreciate your coming here and I think we
2 need to know more about your thoughts and what it is
3 you're doing. And, in particular, I have already
4 asked you for one document that when we review
5 documents from the staff to reference NEI documents,
6 it's good for us to have access to that so that we do
7 get the full picture of what's going on. That doesn't
8 always occur.

9 So I'm encouraging NEI and the staff that
10 when we review documents that the staff references in
11 a reg. guide or ISG or something like that we have a
12 copy of the NEI document also. And I consider this of
13 great value and I encourage from time to time further
14 opportunities to discuss issues with you as we go
15 forward on things.

16 And so, with that, Mr. Chairman, I turn it
17 back to you.

18 CHAIRMAN ABDEL-KHALIK: Thank you. Again,
19 let me add my thanks to those expressed by Jack. Thank
20 you very much for your presentation. It was very
21 informative and we look forward to your participation
22 in the two issues that you have identified. We will
23 see how we can work that into our schedules. Thank
24 you very much.

25 MR. MARION: Thank you.

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1 CHAIRMAN ABDEL-KHALIK: Okay. At this
2 time, we will take a break for 15 minutes until 3:15
3 p.m.

4 (Whereupon, a short recess was taken.)

5 CHAIRMAN ABDEL-KHALIK: We are back in
6 session. We're very pleased to have with us a member
7 of the public, Mr. Marty Malsch, who has expressed an
8 interest in making a presentation to the Committee
9 regarding the closure of DAC/ITAAC items for new
10 reactors.

11 Mr. Malsch, we are very pleased to have
12 you here.

13 MR. MALSCH: Yes. And thank you.

14 CHAIRMAN ABDEL-KHALIK: Please go ahead.

15 MR. MALSCH: Thank you for allowing me to
16 make a presentation here today.

17 Let me introduce myself briefly. I'm a
18 partner with a law firm called Eagin, Fitzpatrick,
19 Malsch & Lawrence which focuses on nuclear energy and
20 nuclear waste matters. I've practiced nuclear energy
21 law for about 40 years.

22 During most of that time, I was the NRC's
23 Deputy General Counsel. I've been in private practice
24 since 1997. As it turns out, I was the supervising
25 attorney in the drafting of Part 52 and I was also the

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1 supervising attorney in working on the first round of
2 design certifications for CE ABWR or the Combustion
3 Engineering System 80-plus in the Westinghouse AP600.

4 Just as a matter of curiosity, I was
5 reading today in the *Wall Street Journal* of a proposal
6 by Bechtel and another company to develop a small
7 modular reactor that would be transported to sites
8 perhaps by railcar and reminded me that I was
9 actually, when I was a junior lawyer, the lead lawyer
10 on a Westinghouse concept for floating nuclear power
11 plants what would be built in a manufacturing facility
12 and then floated to the site. So this is not quite a
13 new idea.

14 I also assisted in successfully defending
15 Part 52 in the U.S. Court of Appeals in the D.C.
16 Circuit.

17 When I was here, I worked closely with
18 Steve Crockett and Geary Mizuno in the General
19 Counsel's Office and also Jerry Wilson in the
20 technical staff as well as lots of other people in the
21 technical staff who were working on both the rule and
22 the first round of design certifications.

23 I'd like to talk a little bit about DAC or
24 design acceptance criteria. I don't have any clients
25 with any interest in this area or subject. The views

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1 are entirely my own. I hope what I have to say will
2 be helpful background information. But what I have to
3 say is largely at the conceptual level. I've done no
4 particular research on any specific issues that may be
5 before. So while I hope I can be a little helpful it
6 may be that what I have to say will be so general it's
7 of no use whatsoever.

8 But any event with that in mind, let me
9 begin. The basic concept in Part 52 was to advance
10 standardization of nuclear power reactors and I think
11 more importantly to minimize the effects of regulatory
12 uncertainty. Part 52 doesn't remove uncertainty, but
13 its purpose was to reallocate it to the beginning of
14 the review stages especially the yearly site permit
15 stage and the design certification stage, at least, to
16 the extent that would be possible.

17 Originally, the intent in Part 52 was
18 actually quite ambitious. Only complete designs would
19 be certified with complete defined as all structures,
20 systems and components that would affect safety except
21 site-specific elements. And then only final designs
22 could be certified with final being here sufficiently
23 complete to allow development of procurement and
24 installation specifications.

25 But at the NRC we all knew that there

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1 would be glitches and much to learn as we actually
2 tried to apply Part 52 to the first round of design
3 certification applications. And that was certainly
4 the case.

5 We knew that the vendors had no actual
6 live customers for a variety of reasons. And we also
7 knew that there was going to be evolving technology,
8 cost issues, uncertain customer preferences. And it
9 turned out also that the designs as originally
10 submitted were somewhat incomplete contrary to what
11 the theory in Part 52 had been in the first instance.

12 In theory, the Commission could have
13 rejected the first round of design certification
14 applications as incomplete. But, in Part 52, the
15 Commission said that it wanted and hoped that its
16 efforts to develop a new licensing framework would not
17 be wasted because its new processes would never be
18 used. And the Commission was very interested in
19 demonstrating success here. So it swallowed hard a
20 little bit and accepted the first round of
21 applications even though the design was somewhat
22 incomplete.

23 The Commission also realized that if every
24 element of a design, final design, were certified
25 there would be a lost flexibility to make design

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1 changes. That is to say that flexibility one sees in
2 50.59 might be lost.

3 At the same time though if all the design
4 was not approved the result would be that it could be
5 re-reviewed and relitigated in COL licensing. And
6 that was contrary to the goal of eliminating
7 uncertainty in the later stages.

8 And so both these considerations led to
9 the development of both the DAC concept as well as the
10 development of a design control document with three
11 tiers. You know, if you look at Part 52, there is no
12 such thing as three tiers. Originally, it proceeded
13 as if there was just one tier for certified design.
14 And the three tiers were each subject to a different
15 kind of design control process.

16 The Commission clearly approved of these
17 new concepts, the concept of a three tier design
18 control document and the concept of a DAC when signed
19 off on the proposed rulemaking for the first round for
20 design certifications and then again when it signed
21 off on the final design certification rule for the
22 first round of design certifications.

23 Now originally DACs were limited to I&C,
24 human factors engineering, radiation protection and I
25 think piping. The theory was that DACs were necessary

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1 to accommodate future technical developments, the
2 Commission didn't want to freeze an obsolete design or
3 because the level of design detail that was necessary
4 and required to approve of that design at the design
5 certification stage could not be provided until the
6 plant was constructed or at least construction was
7 somewhat well along or maybe until components were
8 procured.

9 But the reality is that Part 52 is a rule
10 and a design certification is a rule. So you can
11 pretty much do whatever you want in a design
12 certification rulemaking. You don't have to adhere
13 strictly speaking to every single part in Part 52.
14 And so really the limits on what should be in a design
15 certification and in particular what DACs should look
16 like or what their limits might be in terms of scope
17 present more of a policy question than a legal
18 question.

19 But the effect of a DAC is to increase
20 regulatory uncertainty. The design is not actually
21 approved. Merely there is an approval of design
22 acceptance criteria and perhaps some subsidiary
23 criteria for assessing compliance. The DAC are a kind
24 of ITAAC and ITAAC are in theory resolved during
25 construction or before operation under a combined

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1 license at a stage when, in fact, the adverse effects
2 of uncertainty impose the greatest burdens on an
3 applicant. So DACs are not actually desirable from
4 anyone's standpoint.

5 But in developing Part 52 the Commission
6 rejected the idea that all ITAAC including DACs must
7 be so exquisitely detailed that compliance with them
8 would be a matter of pure objective testing and
9 inspection and recognized very early on that in terms
10 of compliance with ITAAC -- and I think that means
11 also compliance with DAC -- some judgment and analysis
12 might also be required.

13 So are there any limits on what a DAC can
14 address? I think the answer is no. But obviously if
15 you go so far the fundamental purpose of Part 52 to
16 eliminate uncertainty as the safety of the design to
17 the extent possible pushing to earlier review stages
18 you so compromise and you end up with something that
19 looks like the old Stage 2 licensing process which is
20 very bad policy and highly undesirable.

21 Now, compliance with DAC, there's not a
22 whole lot said about that subject in the original
23 rulemaking except as I indicated. The Commission was
24 satisfied and that it was not necessary that all DAC
25 be so exquisitely well defined that nothing would be

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1 left except objective inspection and testing.
2 Compliance must be met before operation commences.
3 That's required by both Part 52 and Section 185(B) of
4 the Atomic Energy Act.

5 But here I think there is a fundamental
6 concept in Part 52 that has to be kept in mind and a
7 concept that was very critical in defending Part 52 in
8 the Court of Appeals because we were before the Court
9 of Appeals defending Part 52 before the Atomic Energy
10 Act was amended to include the COL licensing concepts.

11 MEMBER BLEY: Was that due to a challenge
12 in some way?

13 MR. MALSCH: Due to a challenge by a
14 number of people including NIRS. NIRS was the
15 principal petitioner challenging the rule.

16 MEMBER BLEY: NIRS is? I should --

17 MR. MALSCH: Nuclear Information and
18 Resource Service I think. It's a common intervenor
19 group.

20 MEMBER BLEY: Okay.

21 MR. MALSCH: They argued that without
22 legislation you couldn't completely replace the two
23 step licensing process and they were particularly
24 concerned that we were eliminating to a great extent
25 hearings at the OL stage. Actually, there wasn't an

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1 OL stage, although it amounted to that. But it was
2 very limited in terms of its scope.

3 The D.C. Circuit rejected that challenge
4 based upon the representations by the Commission and
5 the brief and in the rule that no material issue of
6 safety would ever go unreviewed and that the only
7 effect of Part 52 was to simply push the resolution of
8 the material safety issues to a point earlier in the
9 review process.

10 The concept was that no one lost any right
11 to a hearing or some participation on any material
12 safety issue. And there was no material safety issues
13 that would be omitted. Instead they would be pushed
14 to earlier stages in the licensing process hopefully
15 at the design certification stage or the early site
16 permit stage or the combined licensing stage or
17 failing those at least at the ITAAC compliance stage.

18 But that when all was said and done, you added up the
19 sum total of issues in all the stages and you ended up
20 with a complete set of material safety issues.

21 The concept here was -- The purpose of the
22 Part 52 was not to eliminate issues, not to create
23 holes in the licensing review process, but instead to
24 simply push the resolution of issues to points earlier
25 in the process to the maximum extent possible. So the

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1 concept here was simple and that's how it was
2 defended.

3 It turned out that implementing it was
4 more complicated than we thought it might be. But
5 then we knew things wouldn't work out perfectly. We
6 had to improvise as we went along and that resulted in
7 the concept of DAC, the concept of the three tier
8 design control document, in fact, the concept of a
9 design control document. And I have no doubt there
10 will be some further improvisations as we go along.

11 I just think that you need to keep in mind
12 the two basic concepts. One is no issues were to be
13 eliminated. The sum total and the end were to equal
14 to a complete collection of reviews. And, two, the
15 objective was to push the resolution of issues to as
16 early a point in the review process as possible
17 recognizing that this may not be feasible or possible
18 in all cases.

19 MEMBER RAY: Marty, reconcile what you've
20 said with our interest being that for those things
21 that can't be addressed early as we would like them to
22 be. Let's take digital I&C for example. How does it
23 come back to us for assessment given that as you said
24 the DAC need not be so exquisitely defined that no
25 judgment is required later on? Who exercises this

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1 judgment? There's no way for us to exercise it
2 because the thing is gone.

3 MR. MALSCH: Well, I mean -- I'm not sure
4 what you mean by thing gone.

5 MEMBER RAY: Well, the DAC, we have no,
6 right now in process, way of assessing -- at least, we
7 believe that's to be the case -- whether the
8 implementation ultimately as the design has been
9 completed and the procurement has been satisfy some
10 basic requirements that may not be expressed
11 exquisitely in the DAC when they are written.

12 MR. MALSCH: Well, they may not be
13 expressed exquisitely. But if the DAC had been
14 properly drafted in the first place they should at
15 least be complete.

16 MEMBER RAY: Yes. All right. Which I
17 think is -- I'm making this argument now because it's
18 been a part of what we've been discussing here which
19 is I'm trying to differentiate between what I would
20 consider to be an adequate expression of the DAC and
21 yet something that doesn't violate your proposition
22 that it not be so exquisitely detailed a judgment
23 later on by somebody -- who knows who -- wouldn't be
24 required to assess its adequacy.

25 MR. MALSCH: I think the difficulty you

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1 may be facing is you're confronted with DAC that have
2 already been approved and drafted. I don't know what
3 you could do about that. I mean the whole idea was
4 these things are fixed by rulemaking and they really
5 shouldn't be reexamined except unless there's a very
6 good reason.

7 I'd be surprised if -- If I could be
8 surprised -- there are DACs that are drafted in a way
9 that somehow material safety issue was left
10 unexplored.

11 MEMBER RAY: Well, that's -- I mean that
12 is at least one of the issues we're debating. Is the
13 design adequate? There is nothing but an expression
14 of principle and digital I&C seems to be a prominent
15 example here. Can you adequately define the
16 requirements at the stage that we have an opportunity
17 to review them or do you need to see it in its
18 implemented form and still have some opportunity to
19 say, "No, that's not acceptable"? And that's a
20 dilemma that we're trying to understand better
21 ourselves.

22 MR. MALSCH: I don't know how to answer
23 that except in very general terms.

24 MEMBER RAY: Right. I understand.

25 MR. MALSCH: The more broadly that's

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1 drafted, the more leeway you have for making judgments
2 as to what's required. The more narrowly it's drafted
3 the easier I guess the judgments are. But that takes
4 a lot more foresight to make sure that you've not
5 omitted some material safety issue.

6 MEMBER RAY: Well, who exercises this
7 subsequent judgment you referred to? You talked about
8 the DAC wouldn't be so prescriptive that there
9 wouldn't be some judgment required later and Part 52
10 doesn't forego in the aggregate the exercise of the
11 same judgment that Part 50 allows. How does that
12 later judgment get implemented?

13 MR. MALSCH: Well, someone has to find
14 compliance with the ITAAC which includes the DAC.

15 MEMBER RAY: But if the -- Okay. And what
16 that presumes then is that that's sufficient. We've
17 had lawyers stand over here and say, "This is your one
18 and only shot at this" and "if it satisfies the
19 literal reading of the DAC as certified that's it."
20 Well, that's a --

21 MR. MALSCH: I think that's you know --

22 MEMBER RAY: So I'm trying to understand
23 this later judgment that you referred to.

24 MR. MALSCH: That is strictly speaking
25 correct.

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1 MEMBER RAY: That's what I --

2 MR. MALSCH: The whole idea of the DAC is
3 that they are defined in advance and that their
4 satisfied safety is reasonably assured. If there's a
5 problem with the way -- I mean what I would say is
6 that safety is the principal consideration. If
7 there's a safety problem that seems apparent on the
8 face the way the DAC is drafted you have to struggle
9 with all your might to construe the DAC in the way
10 that there's no safety problem presented. If that's
11 impossible, then there's always an out and that is if
12 there's a question of adequate protection of public
13 health and safety, you almost always can ask for
14 additional requirements.

15 MEMBER RAY: But what was the distinction
16 then that you were trying to make about that it's
17 understood and like I said I noted down that you were
18 rejecting the idea that you would have a very
19 exquisitely defined, prescriptive DAC and that it was
20 understood that judgment later on would be required.
21 And it was really merely a matter of trying to advance
22 as much as possible without eliminating the
23 opportunity to review things at whatever stage is
24 necessary. I guess maybe you're answering the
25 question by saying "Well, you know you just really

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1 have to" -- Well, I'm not sure what you're saying
2 because we can't understand what the opportunity is
3 that we have to review something at the point at which
4 we could exercise the judgment that you seem to refer
5 to.

6 MR. MALSCH: The issue arose in terms of
7 the amount of detail in an ITAAC which includes DAC
8 early on. Because there was an argument that they
9 should be so exquisitely detailed that compliance as a
10 pure matter of inspection and objective judgment. No
11 analysis, no evaluation, would really be required.
12 You'd look at this and say, "Well, of course, it
13 satisfied."

14 MEMBER RAY: Sure.

15 MR. MALSCH: And that was driven by a kind
16 of misguided effort by some to take advantage of an
17 exception from the hearing requirements in the
18 Administrative Procedure Act that applied to the
19 results of inspections and tests. So the effort here
20 was to avoid a hearing on ITAAC compliance.

21 MEMBER RAY: Right.

22 MR. MALSCH: A kind of, I think,
23 artificial issue. When the Commission said that it
24 wasn't insisting that ITAAC and DAC be physically
25 detailed it was rejecting that argument on the basis

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1 that it was simply unrealistic. It was unrealistic to
2 expect that ITAACs would be drafted in such a detailed
3 fashion that compliance with them would be purely an
4 objective testing matter.

5 Now that means that the Commission must
6 have contemplated that compliance with some kinds of
7 ITAACs including DACs would take some considerable
8 judgments and analysis. But the final result is
9 you're still looking at DAC compliance.

10 MEMBER RAY: Okay. But understood. But
11 we are trying to understand how that judgment -- You
12 just used the word yourself -- gets exercised and is
13 it impossible to exercise it under the process that we
14 are currently looking at taking place. In other
15 words, can somebody say, NO, this is not good enough
16 at this downstream point" when it finally is revealed
17 what the heck it is that we're looking at?

18 MR. MALSCH: Well, I think -- I mean the
19 Committee's job is to give the Commission safety
20 advice. You know it seems to me that if you see a DAC
21 compliance with which may be necessary but doesn't
22 appear to be sufficient to protect public health and
23 safety you simply call the Commission's attention to
24 that.

25 Now I think it is strictly correct that if

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1 the DAC were approved by rulemaking as both necessary
2 and sufficient with the expectation that this issue
3 would not arise. But if it arises, call the
4 Commission's attention to it and they can deal with it
5 as best.

6 MEMBER RAY: But it seemed like you were
7 saying in your first comments though that it had been
8 understood that this later judgment should be made
9 possible or was necessary or something like that. And
10 yet what you just now said is contrary to that in my
11 opinion. It sounds like it says, "You'd better say up
12 front what you need or forever hold your peace."

13 MR. MALSCH: What I meant judgment in
14 terms of ITAAC compliance.

15 MEMBER CORRADINI: Can I --

16 MEMBER RAY: Well, I'm done.

17 MEMBER CORRADINI: I just want to clarify.
18 I think Harold's got two -- His concern has two
19 things wrapped intertwined. One is who makes the
20 judgment and you said it pretty clearly. We make it a
21 the DCD stage or the COL stage and then we're out of
22 it. We might not like it, but we're out of it process
23 wise unless we see some sort of concern about adequate
24 protection to the public.

25 And the second part is let's say somebody

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1 makes the judgment later on about the DAC or the
2 ITAAC. I think the second part of what Harold's
3 concern is if it's vague enough it puts everybody at
4 risk as to what is there to judge upon because some of
5 these DACs that have been approved are a bit broad.

6 MR. MALSCH: Yes. I've not looked at all
7 of them. I've seen some.

8 MEMBER RAY: But let me add this. There's
9 also at least --

10 MEMBER CORRADINI: But I want to make sure
11 I -- Did I --

12 MEMBER RAY: That's one way to express it.
13 But let's go on without my trying to refine.

14 MEMBER CORRADINI: Okay. That's what I
15 was thinking he was asking, the two different things.

16 MR. MALSCH: Yes. I don't know what this
17 Committee's role is in ITAAC compliance. I mean
18 there's no --

19 MEMBER BROWN: That's one of the problems.
20 I'm a digital I&C guy. I'm Charlie Brown if you
21 don't know who.

22 MR. MALSCH: I don't know why --

23 MEMBER BROWN: Let me make my point.

24 MR. MALSCH: Sure.

25 MEMBER BROWN: One point here in that it's

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1 the who does it. If you've got a DAC and it says
2 something nice and vague and general like "a report
3 will be issued that shows you comply that the
4 protection system is independent," that is very vague,
5 very general, high level. And you say, "Well, that
6 sounds good." But now where does that -- Now that the
7 COL is issued. People build stuff. Who looks at
8 that? Is that a site inspector?

9 And to be just a little bit on the fringe
10 a guy that's used to looking at "Hey, I'm running
11 cables this way and they're going up that way and they
12 got connected to this place and to that place" who?
13 That's a design issue.

14 That's a looking at the whole system
15 design and saying, "Are my channels truly independent
16 or not?" And it's all this complicated data flow back
17 and forth between the channels. They're clueless.
18 There's no attributes, no criteria, no nothing
19 specified to allow that guidance.

20 So who is doing -- That's one point. Who
21 is doing that and at what stage is it done? If you
22 don't have enough attributes, for example, on the
23 independent saying, "A test will be identified and
24 shown to say here's the test we're going to do to
25 identify this independence for whatever it is with all

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1 this data you've got to prove to us that it's adequate
2 based on this set of criteria" they aren't in there.
3 But if you put those in there, it may be satisfactory.

4 That's where I'm having trouble to draw
5 the line because fundamentally the DAC for I&C -- and
6 I'm going to say this again -- is based on the idea
7 that you can't functionally depict the system and its
8 data interchange because of the evolving technology
9 which is flat wrong. Okay.

10 And because of that we're now involved in
11 this thing where we should have had DACs thrown out
12 initially from the I&C. It just shouldn't have been
13 done. You can define that up front. But now we're
14 trapped.

15 Now some of these projects that we're
16 looking at, in fact, have made changes to that I&C
17 system that was in the original certification. So
18 they are open for discussion again because they've had
19 to rewrite the DAC or ITAAC to meet their new system.

20 MR. MALSCH: Well, the analogy I would
21 draw would be that if there's a DAC and it says
22 something along the lines of demonstrate independence
23 of the system something which obviously requires some
24 judgment and analysis.

25 MEMBER BROWN: Well, it requires

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1 engineering expertise.

2 MR. MALSCH: Right.

3 MEMBER BROWN: A lot of it.

4 MR. MALSCH: And whoever is reviewing
5 compliance ought to possess the requisite engineering
6 expertise and, in terms of this Committee's role, I
7 mean to my mind that issue harkens back to what this
8 Committee used to do years ago in reviewing operating
9 license applications. I think it's a classic
10 operating license application review issue even though
11 it's disguised as a DAC compliance question.

12 MEMBER RAY: That's an interesting point.

13 MEMBER BROWN: And that's true. But
14 therefore what?

15 MR. MALSCH: Therefore that suggest that
16 you ought have a role. But precisely what the role is
17 and how should you come out is another question.

18 MEMBER BROWN: Yes, exactly.

19 MR. MALSCH: You should have a role. But
20 to the extent that judgment and analysis is required,
21 I don't see why guys shouldn't be involved in that at
22 least to some extent.

23 MEMBER BROWN: What we are discussing,
24 Marty, is how to make that happen.

25 MR. MALSCH: Yes, I think you just have to

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1 discuss that with the Commission because the rule has
2 been circumspect.

3 MEMBER BROWN: But that -- And that
4 entered that exact point as it may. But we've been
5 told here to --

6 MEMBER RAY: Let's just stop right there.

7 MEMBER BROWN: I'm just saying -- Go
8 ahead.

9 MEMBER RAY: Let's just stop right there.
10 He's made the point. I think it's clear enough. It's
11 something we have to take up with the Commission if
12 we're going to do anything.

13 MEMBER BROWN: I agree. The end result
14 will be that whatever the requisite membership of this
15 Committee is in four years would then have been
16 requested to be involved in seeing how that design
17 when reviewed by the staff, the Headquarters staff,
18 and that it met the requisite independence and
19 whatever the other requirements are that generally
20 apply to I&C.

21 (Simultaneous comments.)

22 MEMBER BLEY: The way you put it though
23 that's back to the Part 50 kind of licensing with two
24 step.

25 MEMBER BROWN: Yes.

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1 MEMBER BLEY: The operating licenses right
2 at the end and that's what you're drawing the
3 comparison to.

4 MEMBER POWERS: That would be the fuel.

5 MR. MALSCH: Right. I think in this
6 hypothetical kind of DAC it would be a revolution
7 versus the FSAR stages of review.

8 MEMBER BROWN: Been there, done that.

9 VICE CHAIRMAN ARMIJO: Marty, I'd like to
10 ask a question.

11 MR. MALSCH: Sure.

12 VICE CHAIRMAN ARMIJO: In the DAC process
13 -- I'll make a statement and then ask a question -- I
14 don't see the point at which a proper design review of
15 the I&C system for example, particularly that one, is
16 done by either the staff or by the ACRS. But it's
17 left to be some sort of inspection that verifies a
18 requirements document.

19 And so, if that's the case, how can we,
20 how can anyone, assure health and safety without doing
21 the same level of design review as we do on a pump or
22 a steam generator or the fuel? So that's the problem
23 I have.

24 I think there's some things where DAC is
25 very straightforward and appropriate, a high beam,

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1 whether you put hangars or snubbers. But I&C is so
2 involved in the entire system that I don't know how it
3 can be -- Maybe it's inappropriate for DAC. That's my
4 personal opinion. But what was the thinking that made
5 I&C a DAC-able item?

6 MR. MALSCH: I think it was simply that
7 wasn't available. The detailed design information
8 simply wasn't available. The Commission wanted to
9 proceed with a demonstration of success in the first
10 round of the design certifications.

11 VICE CHAIRMAN ARMIJO: Okay.

12 MR. MALSCH: I think the Commission would
13 have thought that really the only risk here is really
14 to the licensees in the industry because we're
15 increasing uncertainty.

16 VICE CHAIRMAN ARMIJO: And it is.

17 MR. MALSCH: But we're not eliminating the
18 review of the safety question.

19 VICE CHAIRMAN ARMIJO: That's my second
20 question on that. If let's say digital I&C is DAC and
21 all its requirements are assured by an inspection
22 process, is the closure of that DAC item subject to a
23 hearing?

24 MEMBER CORRADINI: Yes.

25 MR. MALSCH: Yes, it's subject to --

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1 VICE CHAIRMAN ARMIJO: That's a lot of
2 risk.

3 MR. MALSCH: And there are lots. Oh yeah.

4 VICE CHAIRMAN ARMIJO: So I don't
5 understand why anybody would want to do it.

6 MR. MALSCH: The Commission had its eyes
7 wide open in recognizing that what we are doing is
8 retreating to the old two-step licensing process for
9 subset of design questions. I mean that's basically
10 what it amounted to.

11 VICE CHAIRMAN ARMIJO: Okay. Thank you
12 very much.

13 MEMBER RAY: Hold on just a second, Sam.
14 Let me follow up on because it's subject to it. But
15 process wise it's far from automatic.

16 VICE CHAIRMAN ARMIJO: But you can't close
17 the -- Harold, even if you have COL and a certified
18 design, what can you do?

19 MEMBER RAY: Well, my point, what I'm
20 trying to say, Sam, and I think it's important to be
21 clear about it is you don't automatically have an
22 opportunity to conduct a review that you said. It's
23 only if you contest the closure that it would generate
24 a review. So you've got to find some way to get a
25 hold of it.

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1 MR. MALSCH: But anybody within the agency
2 can initiate a review of anything.

3 MEMBER RAY: Understood.

4 MR. MALSCH: You don't need to be in
5 contest.

6 MEMBER RAY: But from a process standpoint
7 it's not part of the plan now to have a review at the
8 time you're talking about.

9 VICE CHAIRMAN ARMIJO: No, Harold. What
10 I'm interested in -- What I was talking about not only
11 the regulatory risk but the business risk to close an
12 ITAAC. That is subject to a hearing, public hearing.

13 MEMBER BLEY: If someone challenges it.

14 VICE CHAIRMAN ARMIJO: If someone
15 challenges it.

16 MEMBER RAY: But you're going to challenge
17 it. You're going to go hire Marty and I'm going to
18 force you to back off.

19 MEMBER BLEY: There was another place back
20 in the beginning Marty was talking about when they
21 actually did this. The Commission kind of realized
22 this was moving in this direction. They also accepted
23 that there would have to be some judgment and the
24 Commission can decide what should be done to clear
25 these things. That's clearly in their prerogative.

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1 MEMBER RAY: It is. But I think we're
2 trying to get an orderly process lined up ahead of
3 time and that's why I asked him about the judgment,
4 the use of the judgment word, a number of times. How
5 is that judgment to be exercised? I think that's what
6 we're talking about. What is the process that allows
7 the judgment to take place? Is it that somebody goes
8 out on their own and --

9 MEMBER BLEY: And it's not predefined,
10 right? Does that mean --

11 MEMBER RAY: It's not and that's the
12 problem I think that I'm simply trying to make clear
13 with the benefit of Marty's expertise here because
14 it's very helpful to have you come and share with us
15 what you have and sort of affirm what the original
16 intents were which I think we understood. But we
17 still have this dilemma of at the point in time when
18 it becomes possible to make an assessment of adequacy
19 are we any longer absent laying down in front of the
20 bus able to exercise that judgment.

21 MEMBER BROWN: But I didn't know that --

22 MEMBER RAY: Let me answer.

23 MEMBER BROWN: -- you were asking a
24 question. I'm sorry. I'll wait.

25 CHAIRMAN ABDEL-KHALIK: Please.

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1 MR. MALSCH: Well, I mean that clearly the
2 Commission as an agency has to make a judgment of
3 compliance with DAC before the plant goes into
4 operation and that involves reading the DAC in the
5 most sensible way that promotes public health and
6 safety, now maybe also reading underlying acceptance
7 criteria in the same manner. And to the extent that
8 involves judgment, then it should be exercised in the
9 course of determining DAC compliance or noncompliance.

10 There is also I guess -- I'm sure -- that
11 some judgment that anybody can exercise as to whether
12 looking back on the process and the DAC and the
13 acceptance criteria as draft that there is some safety
14 problem here that the Commission ought to look at.

15 MEMBER BROWN: You understand we're just
16 trying to --

17 MR. MALSCH: And bring it to the
18 Commission's attention and say, "Hey, Commission, deal
19 with this stuff."

20 (Off the record comments.)

21 MEMBER RAY: We would just like to know
22 that there was a process in place to do that rather
23 than have it be reactive or ad hoc and it sounds to me
24 like there isn't at this point in time. That's what
25 we're talking about. Okay.

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1 MEMBER BROWN: I guess to follow up on
2 your point what I've gotten out of this -- and correct
3 me if I'm wrong -- one of our responsibilities would
4 be to identify to the Commission at this stage
5 whatever we do that we think that the DAC for some
6 particular systems, whether it be I&C or whatever the
7 other ones are, need to be readdressed once they are
8 brought forth for closure, in other words, once the
9 design is developed. And there needs to be a process
10 put in place to bring that through the agency and/or
11 the Committee again when they get to that point.

12 And that would be a recommendation that
13 could be rejected or could not be rejected. But at
14 least that's a path, a process. That's what I've
15 gotten out of this discussion.

16 MEMBER RAY: That's right. Possibly
17 that's the case.

18 MEMBER BROWN: Yes. I didn't say
19 absolutely. I said that we'd make a recommendation,
20 advise, and see what comes out.

21 MEMBER SHACK: Since we are clearly
22 involved that this is reconciled at the COL stage, it
23 would seem absolutely illogical that we would not be
24 involved whenever it was resolved whether it's at the
25 COL stage or a second. I mean no one seems to contest

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1 our role at the COL stage why our judgment is valuable
2 if you resolved it at the COL stage and it's not
3 valuable if you resolve it later.

4 Now if that's in question, I think we need
5 to have the Commission settle that. But it just seems
6 to me since no one contests that we should be involved
7 at the COL level how we get ruled out at the next
8 level --

9 MEMBER BROWN: Because there is nothing at
10 the next level right now. There is no clearly defined
11 --

12 MEMBER SHACK: Well, there is a process.

13 (Simultaneous comments.)

14 MEMBER BROWN: Well, it's not
15 hypothetical.

16 MEMBER RAY: I think the answer could well
17 be because that's what you guys agreed to as a way of
18 reducing the risk. I mean the risk is huge if you
19 disapprove of my I&C design at a time when you finally
20 decide --

21 MEMBER SHACK: That's their problem if
22 they don't want to resolve it to that stage.

23 MEMBER RAY: Well, I tried to answer the
24 question why did they not and I think that's the
25 answer.

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1 CHAIRMAN ABDEL-KHALIK: We ought to try to
2 take advantage of Mr. Malsch's generosity by trying to
3 direct --

4 (Simultaneous comments.)

5 MEMBER CORRADINI: We can debate that at a
6 time when you're not here.

7 CHAIRMAN ABDEL-KHALIK: Right. So I would
8 appreciate it if you'd try to do that rather than
9 debating internally which may sort of shed light on
10 your answers to our questions. But nevertheless we
11 ought to try to direct the questions to Mr. Malsch.

12 MEMBER BLEY: Marty, at the time this was
13 all put together -- and I see some people who were
14 around besides yourself -- were there clear or maybe
15 not so clear expectations on behalf of the people in
16 that development process of how this would actually
17 come to pass? You know we're just now for the first
18 time getting to the COLs that aren't clearing the DAC
19 as they go through. So it's finally come to a head.
20 But were there expectations back in the time?

21 MR. MALSCH: I don't recall any particular
22 expectations. I think clearly this was a compromise.

23 And the theory was we're not giving up the right to
24 review an important safety question. This is not a
25 desirable policy, but it seems to be the only policy

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1 at the time that let us certify some designs.

2 And it would certainly be in keeping with
3 Part 52 to get DACs cleared at the COL stage if not
4 before. I mean if I was an applicant I would be very
5 interested in doing that because otherwise --

6 MEMBER BROWN: Trust me. They are.

7 MR. MALSCH: -- I could see some very
8 nasty surprises during construction.

9 There is though if you look at a DAC and
10 an ITAAC and conclude that there's an insufficiency,
11 there is a fairly high threshold for changing it which
12 is a matter of attack for public health and safety.
13 But that said it's not completely immune from
14 questioning.

15 As to what the review processes are, I
16 think that's an internal matter between the Commission
17 and the Committee. All I can say is to the extent
18 that there is a DAC that looks like something along
19 the lines of make sure something is independent, that
20 looks like a PSAR stage kind of approval, to be
21 resolved at the FSAR stage which looks like the old
22 two-step licensing process in the past this Committee
23 was involved in both steps.

24 MEMBER BROWN: That's right. Well, we're
25 at the FSAR stage right now in several, a couple, of

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1 the projects and it's --

2 MEMBER RAY: It's not the OL FSAR that
3 Marty's referring to. It's the COL FSAR.

4 MEMBER BROWN: Excuse me. I thought we
5 heard that one.

6 CHAIRMAN ABDEL-KHALIK: If you would just
7 pardon the double negatives because those are exactly
8 the terms that you used in your presentation is that
9 the overarching objective was that no material issues
10 of safety significance will not be reviewed.

11 MR. MALSCH: Would go unreviewed.

12 CHAIRMAN ABDEL-KHALIK: Will go
13 unreviewed.

14 MR. MALSCH: Yes. The idea here was that
15 you have let's say a proposed nuclear power plant. It
16 presents a large collection of safety questions. In
17 promulgated Part 52 it was never the Commission's
18 intent to simply eliminate them or pretend they don't
19 exist.

20 The only purpose was to take that same
21 collection and reallocate them to earlier review
22 stages to the extent possible. So in the end the
23 theory was that when all was said and done and you've
24 found compliance with ITAAC and the plant is ready for
25 operate you would have reviewed the same collection of

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1 safety questions as would have been the case had there
2 never been a site permit or design certification or
3 combined license.

4 CHAIRMAN ABDEL-KHALIK: So if in our view
5 an assessment of the process as it is currently
6 interpreted by the staff is in violation of the
7 overarching guidance the only avenue we have is to
8 make that observation known to the Commission.

9 MR. MALSCH: I think that that's a fair
10 comment because I mean those things could fall into
11 two categories. They could fall into a useful
12 category, a helpful category, whereby you could simply
13 interpret the DAC in a way that resolved your issue so
14 that there was no safety problem.

15 But if in the final analysis after you
16 look at the DAC very careful and find that there's
17 simply no way around the proposition that there's an
18 unresolved safety question, now we're talking about
19 undercutting the design certification rule. That can
20 be done. There's a high threshold. But that's really
21 a Commission matter.

22 CHAIRMAN ABDEL-KHALIK: Thank you. Are
23 there any other questions for Mr. Malsch?

24 (No verbal response.)

25 Well, thank you very much. We appreciate

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1 you taking the time to come and present this
2 information to us.

3 MR. MALSCH: Thank you.

4 CHAIRMAN ABDEL-KHALIK: Thank you. If we
5 can keep a copy of your notes, I would appreciate it.

6 MR. MALSCH: Sure.

7 CHAIRMAN ABDEL-KHALIK: Thank you.

8 At this time we are off the record.

9 (Whereupon, at 3:58 p.m., the proceedings
10 went off the record.)
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Presentation of Staff SER

Tekia Govan, Project Manager – Chapters 4 and 5

Adrian Muniz, Project Manager – Chapters 7, 8, and 15

Stacy Joseph, Project Manager – Chapters 6, 14, 16, and 10

Raj Anand, Project Manager – Chapters 1, 11, 12, and 17

Rocky Foster, Project Manager – Chapters 13, 18, and 19

Chapter 4

Reactor

- **Downstream Fuel Effects (GSI-191)**
 - STP agreed to a COL License condition requiring testing of the fuel loaded in the initial core for downstream effects
 - Staff is reviewing the acceptance criteria for the license condition test and the test plan
 - RAI 04.04-3 remains open pending approval of the proposed license condition
- **ACRS Action item**

Chapter 5

Rx Coolant Systems and Connected Systems

- Rx Vessel Materials – staff finds acceptable – no open items
- P-T Limits
- Preservice/Inservice Inspection - staff finds acceptable – no open items
- Rx Coolant Pressure Boundary Leakage - staff finds acceptable – no open items
- Compliance with 10 CFR Part 50 Section 50.55 and Applicable Code Cases - staff finds acceptable – no open items
- RCIC Turbine Design Change

Pressure-Temperature Limits (5.3.2)

- ABWR DCD COL Item 5.6
 - COL applicant will submit plant-specific P-T limits curves
- STP Response
 - Submitted a generic Pressure and Temperature Limits Report (PTLR), following guidelines of GL 96-03
 - Plant specific P/T limits will be submitted prior to receipt of fuels on site (COM 5.3-3)
- The applicant will also be submitting their updated P-T Limits (developed using the ANSYS Code for finite element analysis) by the end of July.

Rx Core Isolation Cooling System (5.4.6)

- **Open Item 05.04.06-1**
 - Audit follow-up items:
 - Revise topical report to specify functional qualification provisions for RCIC turbine pump
 - Specify surveillance testing for RCIC standby lubrication pump
 - Applicant provided revised technical report that specifies use of ASME Standard QME-1-2007 for functional qualification of RCIC turbine pump. Also, applicant clarified nonsafety-related use of RCIC leak-off drain pump. Open Item 05.04.06-1 is resolved.
- **Open Item 05.04.06-2**
 - RAI requests STP to submit results of pump calculations showing available NPSH margin when head loss for new ECCS suction strainer is determined.
 - Applicant has committed to responding to this open item by 7/15.

Chapter 7

Instrumentation and Control

- STD DEP 3.4-1
 - Changes the I&C architecture & related nomenclatures to address obsolete data communication technology and digital I&C platform selection
- Instrument Setpoint Methodology
 - Technical report to resolve bracketed items in the Technical Specifications
- Open Item
 - Instrument Setpoint Methodology lacks OPRM setpoints.
 - Applicant will submit information at the end of July.
- ACRS Action Items
 - No Staff ACRS action items identified

Chapter 8

Electric Power

- STD DEP 8.3-1
 - Changed Medium Voltage ratings from 6.9 kV to 13.8 kV and 4.16 kV
 - Changed DGs and CTG ratings
 - Additional RAT added
 - Departure was found to be acceptable
- Open Items
 - Diesel room temperature – Closed
 - Equipment to be installed in DG room is being specified and procured to be suitable for DG room environmental conditions

Chapter 8 (cont'd)

- Open Items (cont'd)
 - Inaccessible/Underground Cable testing program
 - STP will provide supplemental response to RAI to implement an acceptable program
- ACRS Action Item
 - How SBO rule requirements will be met considering operator action time to shed/load buses?
 - Staff issued RAI requesting the applicant to demonstrate that the 10-minute criterion is met or provide coping analysis

Chapter 15

Accident Analysis

- Departures are evaluated in other Chapters
- COL Information items are satisfied based on information found in the ABWR DCD
- Supplemental Information was found to be acceptable
- Open Item related to TSC Dose Calculation
 - Response to staff RAI provided radiological consequence analyses for the TSC under postulated DBAs
 - Results are within dose acceptance criterion of 5 rem TEDE for the duration of an accident
 - Staff audited calculation on June 25, 2010.
 - Calculations were performed using an NRC computer code.
 - Calculations were found to to be performed in accordance with SRP 15.0.3.
- No ACRS Action items identified

Chapter 6

Engineered Safety Features

- Containment Analysis: The P/T and Pool Swell licensing parameters are within plant safety margins and the analysis methodologies (using GOTHIC) are conservative
- ECCS Suction Strainers: Chapter 6 evaluation of ECCS Suction Strainers complete with one remaining open item on Chemical Effects.

Chapter 6 Open Items

- Section 6.4 – Control Room Toxic Gas Monitors
 - Staff evaluating:
 - Justification for 100 m maximum puddle radius for Acetic Acid (Offsite Storage)
 - Justification for 1-hr ALOHA limit to the gas release duration
 - Sensitivity of the Chlorine release from Sodium Hypochlorite to ambient temperature
- Section 6.2.1 – Vacuum Breaker Protection
 - CLOSED - RAI response on “V” shaped plate to protect vacuum breakers from pool swell loads is acceptable
- Section 6.C – Chemical Effects
 - Staff evaluating the applicant’s conclusion that no aluminum precipitates will form based on WCAP-16530 methodology and solubility data
 - Staff evaluating the applicant’s conclusion that any zinc corrosion products are in particulate form

ACRS Action Items from Ch. 6

- **Downstream Effects on Fuel**
 - Staff evaluating RAI response and performing audit of fuel calculations
 - Will be presented to ACRS during Phase 5 presentation of Chapter 4

Chapter 14

Verification Systems

- SER Evaluated:
 - Startup Administrative Manual
 - Departures to Preoperational and Startup Test Abstracts
 - Design Certification and Site Specific ITAAC

Chapter 14 Open Items and License Conditions

- (2) Open Items for Preoperational and Start-up tests related to flow induced vibration – Report to be submitted in Dec 2010
- License Conditions for Initial Plant Testing
 - Preoperational and Startup Test Specification and Test Procedures
 - Startup Administration Manual
 - Startup and Power Ascension Test Phase Results
 - Test Program Schedule
 - Test Changes

Chapter 16

Technical Specifications

1. Verified that plant-specific technical specifications (PTS) and bases incorporate by reference (IBR) the ABWR generic technical specifications (GTS) and bases
2. Verified that departures from GTS and bases are warranted and justified
3. Verified that PTS and bases incorporate acceptable site-specific COL information to complete COL License Information Item 16.1
 - DC/COL-ISG-8, “Necessary Content of Plant-Specific Technical Specifications When a Combined License Is Issued.”

Chapter 16 SER Open Items

- Instrument Setpoint Methodology
 - Tied to acceptance review in SER section 7.1.5 which is currently under review
- RCS P-T Limits
 - Tied to acceptance review in SER section 5.3.2 which is currently under review

Chapter 10

Steam and Power Conversion System

- Turbine Overspeed – D-EHC System
 - Modified the design of the overspeed protection device
- Turbine Rotor Integrity
 - Tier 2 departure STP DEP 10.2-1 replaces turbine with Toshiba design
- Turbine Missile
 - Maintenance program and analysis available three (3) years after the license. Chapter 3.5.1.3 issue.
- Condensate Feedwater System
 - Tier 2 departure STP DEP 10.4-5 adds components

Chapter 10 Outstanding Issues

- **Significant Open Items:**
 - 10.02-3 (Turbine Overspeed) – supplemental RAI issued
 - 10.02-4 (ITAAC for two E-overspeed) – supplemental RAI issued
- **Action Items**
 - Documentation of the adequacy of the material pertaining to rotor integrity

Chapter 1- Introduction and General Description of plant

- Chapter 1 provides over view of the application
- Qualification of alternate vendor
- Review of STPNOC due diligence report
- Open Items are largely non-technical in nature
- No ACRS Action Items

Chapter 11- Radioactive Waste Management

- Redesign of LWMS, SWMS; Mod to GWMS and PERIS
- Tier 1 Change
- Tier 2 Changes
- Three (3) Open Items related to CST. Open items were closed and supplemental RAIs were written in Section 12.2 Radiation Sources
- SER for Chapter 11 is complete with no open items
- No ACRS Open Items

Chapter 12- Radiation Protection

- No Tier 1 changes
- Tier 2 changes
- Four (4) Open Items in Chapter 12
 1. Gaseous effluent data, input parameters, and resulting gaseous effluent dose info.
 2. Dose rate from spent fuel pool area
 3. CST as a radiation source
 4. Criticality monitoring compliance with Part 70.24
- No ACRS Action Items

Chapter 17- Quality Assurance

- STP submitted “STP 3&4 Quality Assurance Program Description,” to address COL Information Item 17.1
- STP is committed to incorporate NEI 06-14A to QAPD to address RG 1.33 for operational program requirements

Chapter 17- Quality Assurance

- STP submitted FSAR Section 17.4S, “Reliability Assurance Program,” to address COL Information Items 17.2, 17.3, and 17.4
- ACRS Action Item related to the DRAP and population of the DRAP SSC list

Chapter 17- Quality Assurance

- STP submitted FSAR Section 17.6S, “Maintenance Rule Program”
 - Incorporates by reference NEI 07-02A, “Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed Under 10 CFR Part 52”
- No open items in the Chapter 17 SER

Chapter 13.1 – 13.5

Conduct of Operations

- **No Open Items**
 - RAI 13.03-73 – TSC Habitability – Confirmatory
- **Remaining Chapter 13 sections will be presented at a future date**
- **ACRS action item on cyber security ITAAC will be presented at a future date**

Chapter 18

Human Factors Engineering

- **No Open Items**
- **Chapter is IBR**
- **ACRS Action Items on human factor engineering will be presented at a future date**

Chapter 19

Response to Severe Accident Policy Statement

- **Significant Open Items**
 - MCR Breach (19-12)
 - STP will close water tight doors and provide supplemental RAI response
 - Shared Fire Protection System and Hydrogen Combustion Impact During SD (19-9 and 19-8)
 - STP will provide supplemental RAI response
- **No ACRS Action Items Identified**

Summary of COLA Review

Technical issues to be resolved

- Downstream fuel effects
- P-T Limits
- Setpoint methodology
- Flow-induced vibration
- Source term issues
- PRA

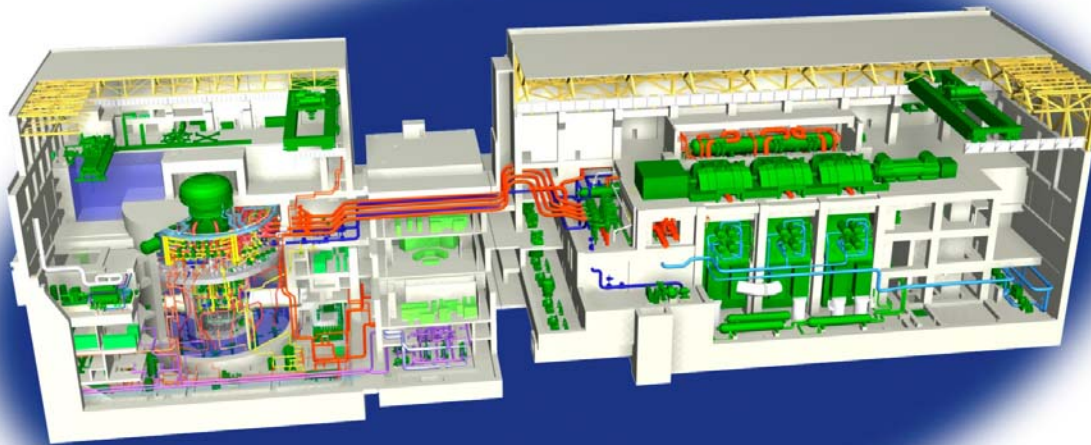
Chapters with no remaining technical issues

- Chapters 11, 13, 15, 17 and 18 have no Open Items
- Chapter 13 has no Open Items in sections presented
- Chapter 16 Open Items related to other chapters

South Texas Project Units 3 & 4

Significant Departures and Supplements

Presentation to
Advisory Committee on Reactor Safeguards



July 14, 2010

Agenda

- Introduction
- Overview of STP 3 & 4
- Chapter Summaries
 - Significant Departure Information
 - Significant Site-Specific Information
- Conclusion

Attendees

STPNOC, STP 3 & 4

Scott Head

Evans Heacock

Coley Chappell

Regulatory Affairs Manager

Design Engineering Manager

Regulatory Affairs

MPR/TANE

Caroline Schlaseman

Site Characteristics

Near the Gulf of Mexico



- Large site, 12,200 acres
- Main Cooling Reservoir sized for four units, 7000 acres
- Infrastructure in place
 - ✓ Road, rail, barge access
 - ✓ Transmission corridor
- Low population density nearby
- Existing State, County and Site Emergency Plans
- Strong community support

History of STP 3 & 4 COLA

- Sep '07 STP 3&4 COLA submitted referencing Appendix A to 10 CFR 52, U.S. ABWR Design Certification
- Nov '07 NRC accepted COLA for docketing (52-012 and 52-013)
- Aug '08 STP letter to NRC regarding Due Diligence Report finding Toshiba is qualified as Alternate Vendor
- Sep '08 COLA Revision 2 submitted to NRC
- Aug '09 NRC completed independent assessment that finds Toshiba Qualified as vendor to supply certified design for ABWR
- Sep '09 COLA Revision 3 submitted to NRC
NRC completed Safety Review Phase I (RAIs issued)
- Mar-Jun 16 of 19 FSAR Chapters from STP 3&4 COLA presented to ABWR Subcommittee of ACRS

Ch 1 Introduction

The STP 3 & 4 COLA:

- Reference-COLA (R-COLA) for the ABWR standard design.
- Incorporates (Part 2) the ABWR DCD, as applicable, by reference without repeating the DCD information.
- Basically identical to the U.S. ABWR Certified Design with a limited number (13) of Tier 1 departures.

Primarily contains two types of new information:

- **Departures from the DCD** – most are suitable for use in subsequent COLAs, some are applicable only to STP 3 & 4.
- **Supplements to the DCD** – to address COL Items, replace conceptual design information, provide information on the site and site-specific systems, organization and programs.

Tier 1 Departures

- Safety-Related I&C Architecture
- RCIC Water-lubricated Turbine/Pump
- Add Class 1E Power Supply to the 4th Division of I&C
- Add Spent Fuel Pool Cooling Mode to 'A' RHR System
- Elimination of Hydrogen Recombiner
- Elimination of High Radiation MSIV Closure and Scram
- Reactor Internal Pumps (RIP) Motor Casing Cladding
- Re-classification of Radwaste Building to Non-Seismic
- Feedwater Line Break Mitigation
- Control Systems Inputs, Tests, and Hardware
- Breaker/Fuse Coordination and Low Voltage Testing
- Reactor Building Safety-Related DG HVAC Temperature Limit
- Site Parameters

Alternate Vendor

Toshiba Vendor Capabilities and ABWR Experience:

- ABWR was developed in Japan, under the cooperation of Toshiba, Hitachi, and GE, and supported by TEPCO and other utilities.
- Toshiba has ABWR design documents as a result of the above process and actual construction in Japan.

STP Due Diligence review was performed:

- STP Concluded Toshiba is qualified to supply the U.S. ABWR.
- Confidence in the ability of the EPC Team to build the Certified ABWR Design and support the STP 3 & 4 COLA.

Ch 4 Reactor

- STP 3&4 COLA does not depart from the certified fuel design.
- COL amendment to be submitted approximately two years prior to fuel load.
- Westinghouse Topical Reports are being submitted to expand the safety analysis methodology to ABWR design.

Ch 5 RCS and Connected Systems

RCIC Turbine/Pump (STD DEP T1 2.4-3)

- Pump and turbine within same casing, system simplifications removes requirements for:
 - Oil lubrication/oil cooling (totally water lubricated)
 - Startup steam bypass line
 - Shaft seal, barometric condenser, vacuum pump and associated penetration piping or isolation valves
- Meets or exceeds all safety-related performance criteria including start time, flow rate, and low steam pressure operation

Ch 6 Engineered Safety Features

Revised pressure temperature analysis and pool swell analysis:

- Errors identified in DCD Containment Pressure analysis by GE during COLA Rev. 0 (feedwater flow assumptions, vent loss coefficient, and decay heat)
- Pool swell analysis re-performed due to greater mass-energy release to containment

Adopted state-of-the-art cassette type ECCS suction strainers design:

- Committed to RG 1.82 Rev.3, chemical and downstream effects
- Removed all fibrous insulation and aluminum from the design, and instituted suppression pool cleanliness operational program
- License condition to perform fuel downstream debris test with the fuel to be used in the initial cycle (18 months prior to operation)

Ch 7 Instrumentation & Control Systems

- STP 3 & 4 COLA incorporates by reference the functionality and logic of the ABWR DCD I&C systems and components.
- Departures were taken to incorporate advancements in technology and provide clarifications:
 - Updated I&C architecture, *e.g.*, replaced obsolete multiplexer communication technology with current technology.
 - Equipment descriptions changed to functional descriptions to improve standardization, *e.g.*, Trip Logic Unit (TLU) to Trip Logic Function (TLF).

Ch 7 Instrumentation & Control Systems

- **Diversity and Defense-in-Depth (D3)** design is incorporated by reference from ABWR DCD and diverse features have been retained, including:
 - Manual reactor scram
 - HPCF C diverse manual is hard wired
 - Diverse display of specific process parameters
- Diverse hard wired controls go directly to controlled components.

Ch 8 Electric Power

Plant Medium Voltage Electrical System Design (STD DEP 8.3-1)

- Changed to a dual system to better accommodate motor driven feed pumps and other large loads, and to be consistent with typical US practice:
 - Power Generation (PG) bus increased from 6.9 to 13.8 kV
 - Plant Investment Protection (PIP) bus and Class 1E safety bus reduced from 6.9 to 4.16 kV
- Capacity of onsite power sources increased to accommodate increased site loads, e.g., RSW Pumps, HECW, CRHA HVAC:
 - Emergency Diesel Generators (EDG) capacity increased from 5000 kW (6.9 kV) to 7200 kW (4.16 kV)
 - Combustion turbine generator (CTG) capacity increased from 9 MWe to 20 MWe

Ch 10 Steam and Power Conv. System

Turbine Generator, Main Steam and other Steam and Power Conversion System features:

- Total of fifteen Tier 2 departures involving Toshiba turbine and changes for reliability, availability and/or efficiency.
- Added site-specific ITAAC for turbine trip diversity in response to RAI.

Ch 11 Radioactive Waste Management

No fundamentally new equipment or processes – uses current technology with modular components and reduced complexity.

- **Liquid Radwaste Process Equipment** (STD DEP 11.2-1)
Added tanks for liquid segregation and recycle, and back-washable filters to reduce solid waste generation; removed high-maintenance/ high-dose equipment wherever possible, e.g., Concentrators (Evaporators)
- **Gaseous Waste Management System** (STD DEP 11.3-1)
Uses recombiner train design with proven operational experience
- **Radioactive Solid Waste Update** (STD DEP 11.4-1)
Eliminated drumming process and propagation of radwaste, removed Incinerator and Compactor, provides for segregation of resin for re-use where possible, uses High Integrity Containers for offsite disposal

Ch 12 Radiation Protection

- Incorporation of industry template NEI-07-03A, Radiation Protection Program Design and Implementation
- Compliance with 10 CFR 20.1406
 - Design and program/operational improvements to ensure worker dose is ALARA
 - All piping containing contaminated fluids is in tunnels
 - Incorporation of industry template NEI-08-08A, Life Cycle Minimization of Contamination

Ch 13 Conduct of Operations

- Emergency Plan – Modified existing STP 1 & 2 plan for four units
- Operations Training Department – Staffed and developing material and content, building on existing programs:
 - Boiling Water Reactor Training Center (BTC)
 - Tokyo Electric Power Company (K6/7)
 - Tai Power (Lungmen)
 - U.S. Domestic Fleet
 - Experienced Training Staff
- Upcoming milestones:
 - 2011 – INPO Initial Accreditation expected
 - 2012 – Operator training classes start
 - 2013 – Simulator ready for training (January)

Ch 14 Initial Test Program

Flow Induced Vibration

- STP 3 is designated prototype in accordance with RG 1.20, Rev. 3
 - STP-specific predictive analysis
 - Using K-6 test results to inform scope of STP-3 program
 - STP-4 will be “Category I non-prototype”
- Approach similar to dryer qualifications for EPU's at BWR plants
- Deliverables in support of COL will be reports that summarize the analytical models, validation, and predictive analysis results for the steam dryer and the remaining reactor internals, including a summary of the instrumentation and inspection plans

Ch 15 Accident and Analysis

- No departures based in Chapter 15, no departure from fuel, only minor descriptive changes due to departures in other chapters.

Ch 16 Technical Specifications

- All departures affecting Technical Specifications and Bases require prior NRC approval:
 - 6 Tier 1 departures, and 9 Tier 2 design-related departures
 - Remainder supplement, correct, clarify information or provide consistency in Technical Specifications and/or Bases, revise the administrative controls section, or are editorial in nature.
- All bracketed items were completed (COL Item 16.1) in accordance with one of the three available options identified in ISG-08:
 - Plant-specific information – Most items
 - Bounding value – One item (LPRMs per division)
 - Reference to a program using an NRC-approved methodology
 - Instrument Setpoint Methodology
 - RCS Pressure and Temperature Limits Methodology

Ch 17 Quality Assurance

Design Reliability Assurance Program

- The PRA input to D-RAP is included in FSAR Tables 19K-1, 19K-2 and 19K-4, Important SSCs.
- By the third quarter of 2011, the expert panel will (COM 17.4-1) :
 - Complete all of the expert panel system reviews
 - Provide a list of the set of D-RAP SSCs
 - Have the program elements in place to control future activities

Ch 18 Human Factors Engineering

- No departures from the approved human-system interface (HSI) design implementation process.
- Provides HSI design goals and bases, including main control room standard design features and technologies, and the Remote Shutdown System.
- STP 3 & 4 will:
 - Comply with Tier 2* requirements (Appendix 18E) for the ABWR DCD HFE program to fully comply with the HSI design implementation process.
 - Consider the good HFE practices of NUREG-0711 Rev. 2 as appropriate.

Ch 19 Probabilistic Risk Assessment

- The PRA for the ABWR was developed as part of the original Certification effort in the late 1980s and early 1990s.
- The PRA has been reconstituted and updated, while maintaining the original format, to reflect site conditions, COL License Items and selected departures.
- The updated PRA is bound by the results of the original PRA.

Questions and Comments





Regulatory Guide 3.74

Guidance for Fuel Cycle Facility Change Process

July 14, 2010

What is 70.72

- Configuration Management Program
 - Establish and maintain a program for change control
- Change Process Program
 - Evaluation of changes
 - Technical basis
 - Safety impact
 - Changes to Safety Program
 - Need for prior NRC approval
 - Documentation

Guide Overview

- Main focus is on when NRC prior approval of facility changes is needed
- No significant problems\Non-compliances on meeting requirements for NRC prior approval
- No major controversial issues

Reasons for Guide

- Review of annual changes
- Inspections
- Part 70 rulemaking

Guide preparation

- Task force of licensees and NRC staff
 - Implementation of CM Program
 - Interpretation of criteria for NRC pre-approval
 - Prior approval evaluations
- Prepared by the staff
- Public review and comments
- Comment resolution
- OGC Review

What changes need to be evaluated for NRC Prior Approval

- All changes to the:
 - Site
 - Structures
 - Processes
 - Systems
 - Equipment
 - Components
 - Computer programs
 - Activities of personnel

Criteria for NRC Prior Approval 70.72(c)

- New types of accidents not previously described in ISA Summary
 - New hazards
- New processes, technologies, or control systems for which the licensee has no prior experience
 - Can be evaluated at system level

Criteria for Prior Approval (continued)

- Non-equivalent replacement of IROFS needed to meet the performance requirements
 - Considerations for equivalent
 - Accident sequences controlled by IROFS
 - Availability and reliability of IROFS
 - Type of control
- Altering a sole IROFS
 - Positive or negative alteration
 - Based on safety function of IROFS
- Prohibited by license condition or order

Documenting the Need for Prior Approval 70.72(f)

- Part of process safety information
 - Not submitted to NRC annually
- Reasons that changes do not require prior NRC approval

Other Facility Changes and NRC Prior Approval

- Requested by licensees for guide
 - Changes under 70.32
 - MC&A program
 - Physical protection Plan
 - Safeguards contingency plan
 - Emergency plan
 - Changes to the license application/SAR
 - Options under review by OGC

Nuclear Energy Institute Overview

Alexander Marion
Vice President, Nuclear Operations
July 14, 2010

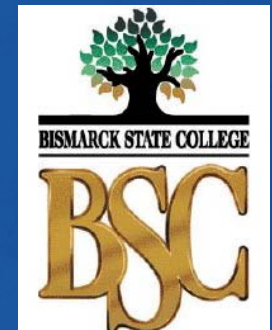
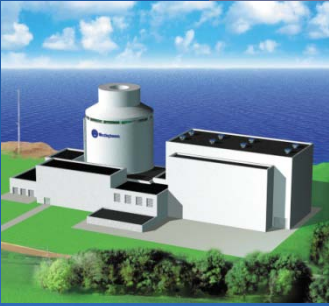
Nuclear Energy Institute

- **The Nuclear Energy Institute is the industry's policy organization. Its broad mission is to foster the beneficial uses of nuclear technology in its many forms.**

Accomplishing the Mission

- **Advocacy and representation before the Congress, Executive Branch agencies, regulatory agencies, the courts, media and state policy agencies**

350 Member Companies in 19 Countries



1,800 Member Representatives Working with NEI on 140 committees

- **Advisory Committees**

- **Nuclear Strategic Issues Advisory Committee**

- Chairman: Chip Pardee (Chairman and CEO, Exelon)

- **Governmental Affairs Advisory Committee**

- Chairman: Beverly Marshall (VP Fed Govt. Affairs, Duke)

- **Communications Advisory Committee**

- Chairman: Tony Earley (Chairman and CEO, DTE Energy)

- **New Plant Oversight Committee**

- Chairman: Jim Miller (President and CEO, Southern Nuclear)

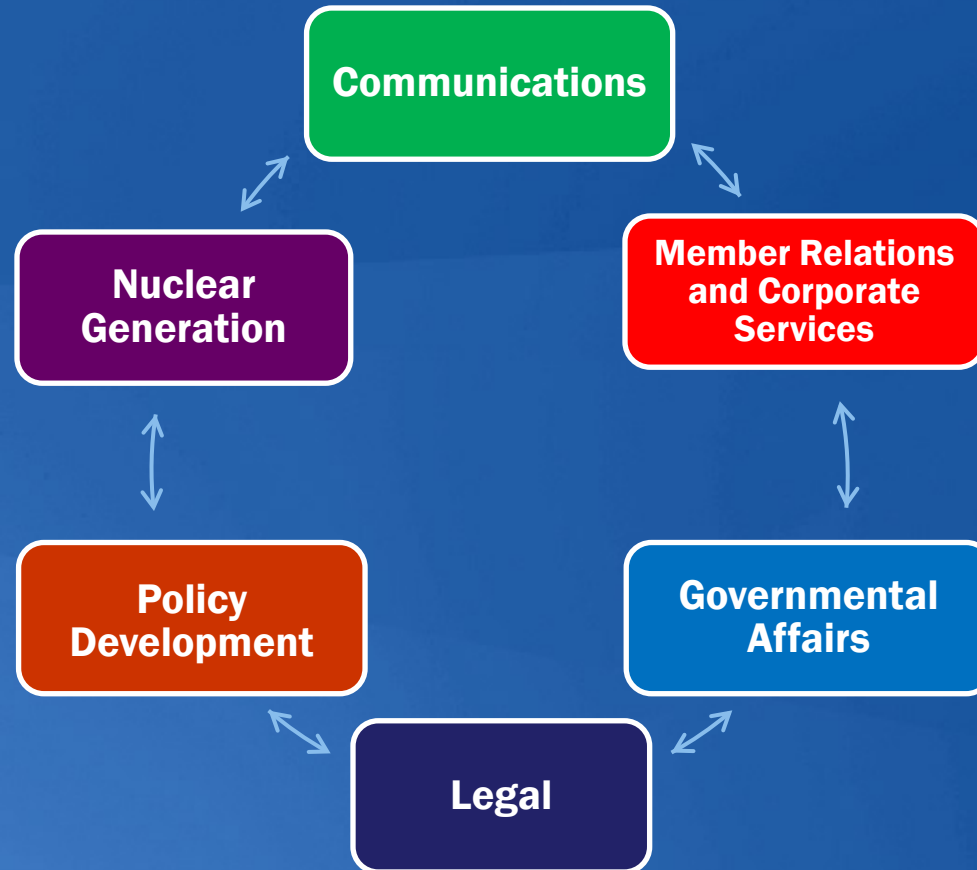
- **Working Groups**

- **Task Forces**

NEI Executive Branch



NEI Divisions



Nuclear Generation Division

Tony Pietrangelo, Sr. VP and CNO



NUCLEAR
ENERGY
INSTITUTE

Scope of Work

- **Facilitate a safety-focused, performance-based regulatory framework**
- **Manage the NRC interface for existing plants on significant generic regulatory issues**
- **Support the licensing and deployment of new nuclear power plants**

Success by Leveraging Industry Resources:

Working Groups

- Security
- New Plant
- Radiation Safety
- Emergency Prep
- Risk-Informed Reg.
- Used Nuclear Fuel
- Fire Protection
- Regulatory Process

Task Forces

- Licensing Action
- Work Hours
- Sump Performance
- NFPA 805
- Dry Cask Storage
- License Renewal
- Reactor Oversight Process
- Construction Inspection
- ... and 32 others

Nuclear Strategic Issues Advisory Committee

- **Advises NEI on Strategic Direction**
- **Full Committee**
 - CNOs, INPO, major vendors and architect engineers
- **Steering Committee**
 - Operating utility CNOs
- **Formal Industry Initiatives**
 - 80% vote of utility CNOs

Governmental Affairs Division

Alex Flint, Sr VP

Scope of Work

- Implement strategies that advocate the nuclear industry's public policy goals
- Represent the industry before the U.S. Congress, state legislatures, and other political and public policy bodies
- Coordinate nuclear energy advocacy with NEI members, business, labor, environmental and other groups
- Develop and coordinate grass-roots support



Government Affairs Priorities

- **Climate Change: The dominant energy issue in coming years**
- **Loan Guarantees and other incentives in the Energy Policy Act of 2005**
- **Waste Confidence**
- **Nominations to the NRC, DOE, and other agencies**
- **Building Alliances**

"To create more of these clean energy jobs, we need more production, more efficiency, more incentives. And that means building a new generation of safe, clean nuclear power plants in this country. It means making tough decisions about opening new offshore areas for oil and gas development. It means continued investment in advanced bio-fuels and clean coal technologies. And, yes, it means passing a comprehensive energy and climate bill with incentives that will finally make clean energy the profitable kind of energy in America."

**President Obama
State of the Union Address
Jan. 27, 2010**



Communications Division

Scott Peterson, VP

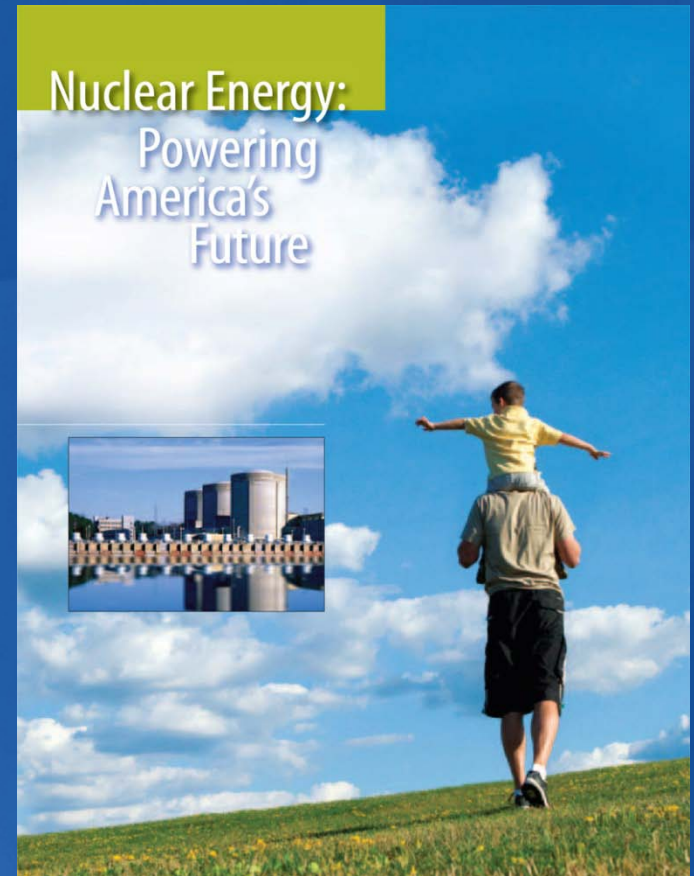
Scope of Work

- **Manage NEI's communications with the industry, media, opinion leaders and the public**
- **Provide strategic communications advice to the industry**
- **Manage NEI's nuclear energy branding program, national coalition building, and public opinion research**

This Is Our Brand:

Nuclear is ...

- **clean-air** energy
- **reliable** and plays a vital role in diverse energy portfolio
- **affordable**



Climate Change Drives New Support

Nuclear Energy Is A Cool Way To Reduce Global Warming

Nuclear power plants generate lots of electricity without emitting greenhouse gases.

Today, more than 100 nuclear power reactors provide more than 70% of our nation's carbon-free electricity.

Nuclear. Clean air energy.



nei.org

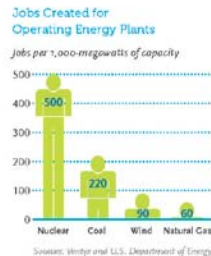


2010 Ad Campaign

15,000

Nuclear Energy Provides Thousands of Needed Jobs, Electricity and Healthy Air.

The nuclear energy industry is investing today to solve our long-term energy challenges. As electric companies prepare to build advanced nuclear energy plants, they have already created more than 15,000 jobs in the last few years. Each new reactor will create between 1,400 and 1,800 construction jobs and up to 700 long-term, permanent jobs to operate and maintain the plant. With more than 22,500 U.S. companies in all 50 states supplying the industry, new reactors also will help jumpstart manufacturing here at home.



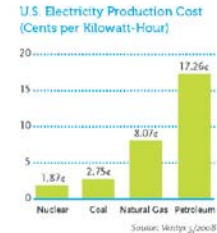
Nuclear. Clean Air Energy.

Visit nei.org/IQ to learn more and take our online quiz.

1.87¢

Nuclear Energy is the Lowest Cost Producer of 24/7 Electricity.

Low-cost electricity is the life blood of economic growth. At just 1.87 cents per kilowatt-hour, nuclear energy is the most affordable electricity that is available 24/7. The U.S. Energy Information Administration projects that America will need 23 percent more electricity by 2030 to meet growing demand. Nuclear energy can help provide that electricity while reducing our over-reliance on foreign sources of energy.



Nuclear. Clean Air Energy.

Visit nei.org/IQ to learn more and take our online quiz.

Polling



Legal Division

**Ellen Ginsberg, VP and General
Counsel**

Scope of Work

- **Develop and implement legal strategies for NEI and the nuclear industry**
- **Litigate before the federal courts and in federal agency proceedings**
- **Coordinate legal advocacy with NEI members and outside groups**
- **Target/resolve generic legal, regulatory and policy matters affecting NEI members**
- **Provide advice and counsel to NEI on internal corporate matters**

Recent Nuclear Litigation

- **Challenge to NRC's design basis threat rule alleging NRC should have considered airborne terrorist attacks**
- **Challenge to application of state-based standard of care in public liability actions (PLA) arising under the Price-Anderson Act.**
- **Challenge to NRC's categorization of impacts of spent fuel pool storage as "insignificant" in license renewal GEIS**
- **Yucca Mountain licensing Proceedings**

Selected Rulemaking/Policy Issues

- **Develop and advocate industry positions on:**
 - ITAAC hearing procedures and ITAAC closure
 - Conduct of environmental reviews associated with new plant licensing and license renewal
 - Emergency planning issues
 - Waste confidence rulemaking
 - Decommissioning funding assurance and planning
 - NRC enforcement policy changes

Policy Development Division

Richard Myers, VP

Scope of Work

- **Defines policies and business conditions necessary to enhance the value of nuclear plants**
- **Identify, analyze and communicate industry priorities on business, economic and environmental issues**

Functions

- **Provides policy and analytical guidance in interactions with governments on financial stimulus for new nuclear power plants**
- **NEI liaison with the financial community, energy-related trade associations, and independent policy organizations**

Member Relations and Corporate Support Division

Phyllis Rich, Sr. VP and CFO



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The Member Relations and Corporate Services Division Has Five Departments

- **Finance and Accounting**
- **Human Resources**
- **Information Technology and Office Services**
- **Member Relations**
- **Training and Development**

Summary

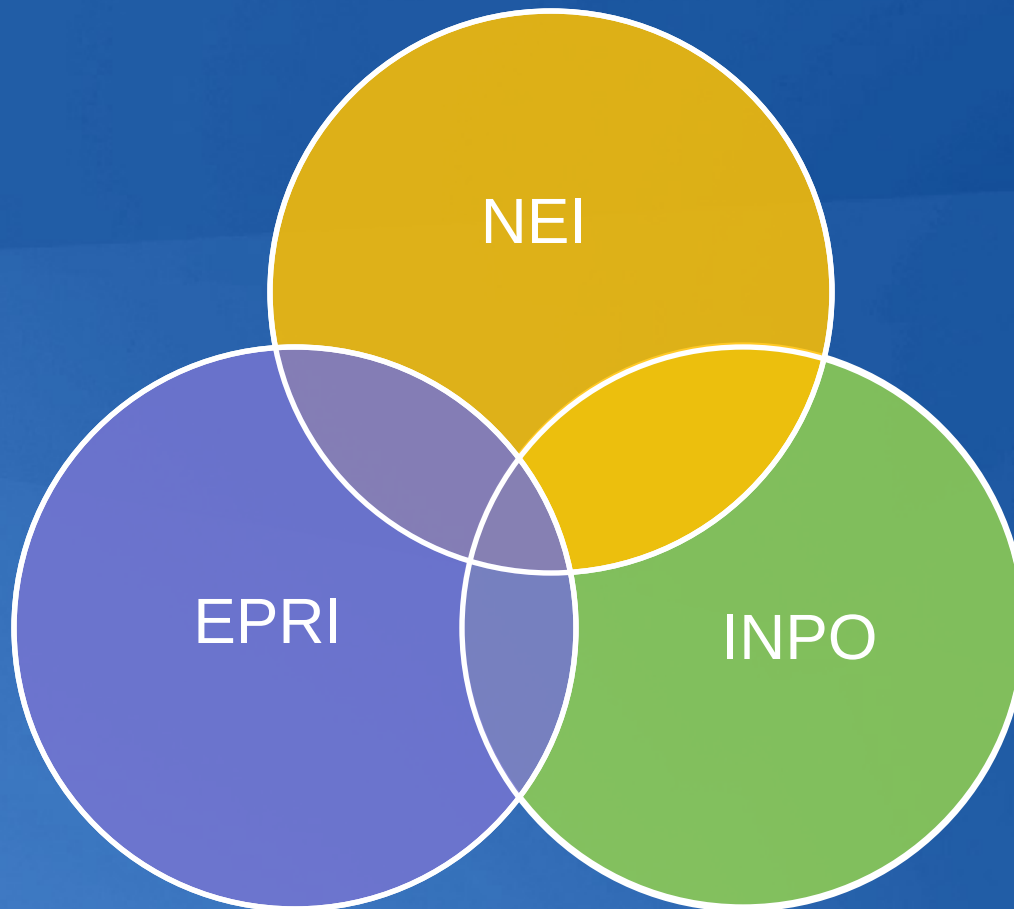


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NEI as a Resource

- **Manage emerging generic regulatory issues**
- **Build relationships with the federal government, agencies, Congress and media**
- **Use matrix team approach to issue resolution**
- **Develop NEI guidance documents**
- **Utilize loaned executives and employees**

Partners in Supporting the Nuclear Industry



Fostering a Strong Nuclear Safety Culture

Doug Walters
Vice President, Regulatory Affairs



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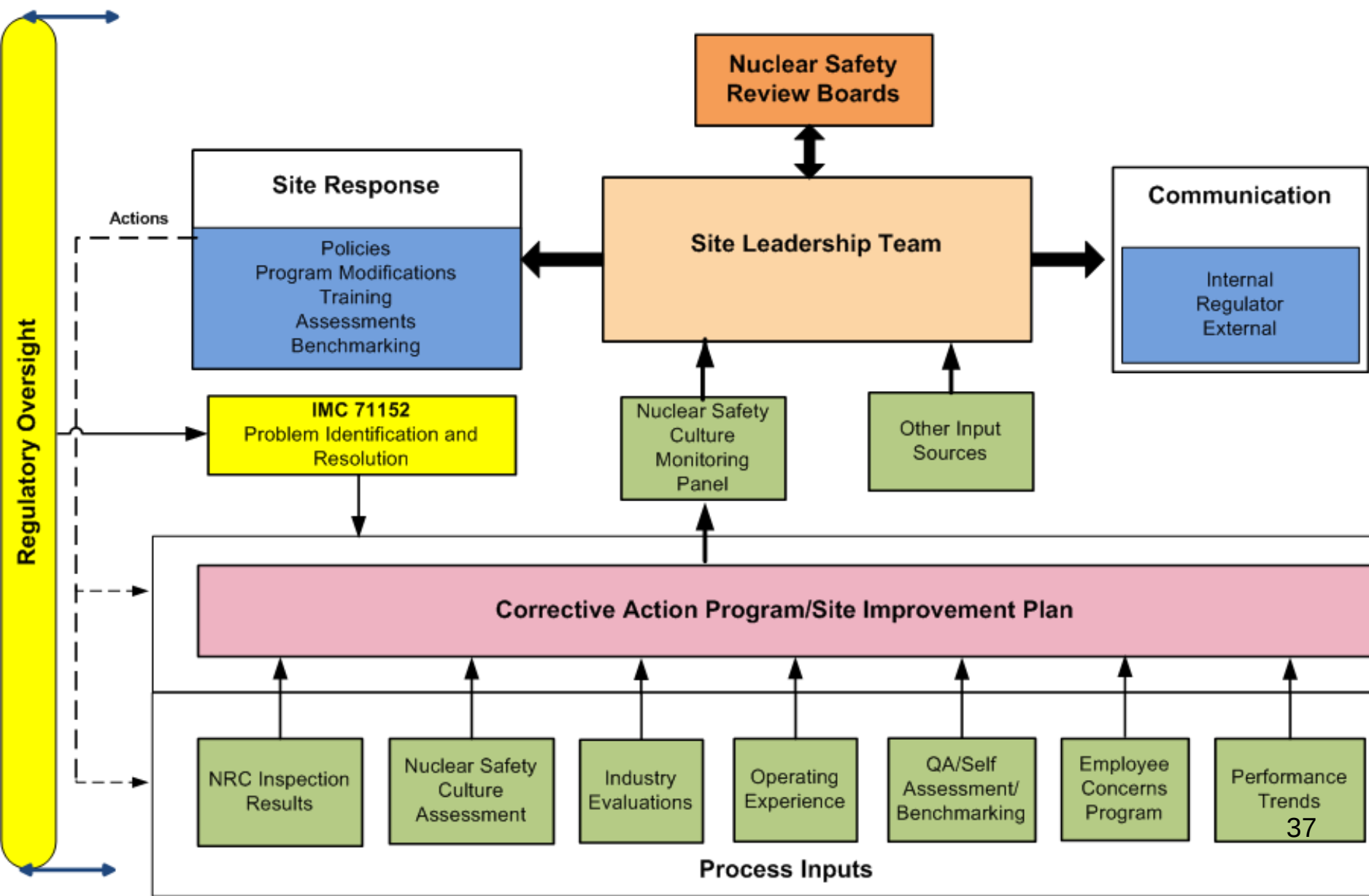
Existing Situation

- **Industry is responsible but has not taken the lead**
- **Inspection findings, with cross-cutting aspects, are a very limited set of data**
- **Industry has not taken full advantage of all the possible indications of safety culture weakness**
- **There is no industry-wide guidance for conducting safety culture assessments**
- **Different NRC/INPO terminology creates confusion**

Industry's Objective: Achieve A Strong Nuclear Safety Culture

- 1. Establish a consistent, holistic approach (NEI 09-07) for sites to use in assessing safety culture on a continuing basis**
 - Integrate all data available
 - NRC provide appropriate and transparent oversight
- 2. Establish a common methodology for conducting surveys and snapshot assessments**
- 3. Work with NRC and other stakeholders to develop a common language of nuclear safety culture**

Site Nuclear Safety Culture Process



Industry Initiative

- NEI 09-07 submitted for NRC endorsement
- Pilot program at four stations with NRC observation
- July 28 meeting scheduled to discuss NRC observation and pilot lessons learned
- NSIAC to consider initiative in August
- With NRC agreement to suspend SCCIs, we will train industry and implement end of 1Q11

Common Methodology

- **NRC and industry dissatisfied with 95003 safety culture assessment at Palo Verde**
- **NEI agreed to develop industry guideline applicable to self, independent and third party assessments**
- **Utilities Service Alliance methodology chosen and upgraded as the Nuclear Safety Culture Assessment**
- **Piloted at three sites with NRC observation**
- **Conducting validation study of survey instrument and will conduct an additional NSCA at Hope Creek**
- **Considerable international interest in USA approach**

Common Language

- Office of Enforcement has been working with stakeholders to develop a policy statement and traits of nuclear safety culture
- Commission review expected in January
- When approved, individual nuclear industry sectors will develop more detailed language to describe the attributes or aspects of culture applicable to their sector
- Power reactors are the lead sector

Nuclear Power Plant Security



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Nuclear Power Plant Security

CURRENT NRC REQUIREMENTS AND INDUSTRY PROGRAMS ARE PREDICATED ON THE NEED TO PROTECT THE PUBLIC FROM THE POSSIBILITY OF EXPOSURE TO RADIOACTIVE RELEASE CAUSED BY ACTS OF SABOTAGE BY THE DESIGN BASIS THREAT

Rulemakings

- **§ 73.1 – Design Basis Threat [October 2008]**
- **§73.21 – Safeguards Information Protection [October 2008]**
- **Part 26 – Fitness-for-Duty & Fatigue Management [March 2008]**
- **§§73.54, 73.55, and 73.56 – Cyber Security, Physical Protection, and Access Authorization [March 2009]**
 - **Codify Orders and Epact 2005 Requirements**
 - **Eight supporting Regulatory Guides**

NEI Structure

Security Working Group
25 Utility Members including NPPD

- **Cyber Security TF**
- **Part 73 Rulemaking TF**
- **PADS Advisory TF**
 - **PADS Audit Oversight Committee**
 - **New Construction FFD FG**
- **Force-on-Force TF**
- **Security Standards TF**
- **Security Response Evaluation Program (SREP) TF**
- **SFAQ Industry Panel**
- **New Plant Security TF**
- **ISFSI Rulemaking TF**
- **New Technology TF**
- **Safety/Security Interface FG**

Active Issues

- **Enhanced force-on-force significance determination process**
- **Part 73 Implementation**
- **Cyber Security** 
- **Security for dry cask storage**

Nuclear Sector Coordinating Council

- Represents the entire nuclear sector to federal government agencies
- Corresponding Government Council – DHS, NRC, DOE, FBI, US Coast Guard
- Establishes “Seat at the Table” for Security and Homeland Defense Issues

Initiatives

- **Risk Analysis and Management for Critical Asset Protection**
- **Comprehensive Reviews**
- **Post attack communications**
- **Routine threat briefings**
- **Emergency Response Initiatives**
- **Pandemic Influenza preparation**

Nuclear Energy Industry Groundwater Protection Initiative

**Ralph Andersen, CHP
Senior Director – Radiation Safety &
Environmental Protection**



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Industry Ground Water Protection Initiative

Objectives:

- 1. Improve management of situations involving inadvertent releases into ground water**
- 2. Improve communication with external stakeholders to enhance trust and confidence**

Enhance stakeholders' confidence that industry monitors and safely controls radioactive materials

History

- **Contributing Events**
 - Braidwood and Indian Point
 - Other sites experienced issue
- **NEI taskforce formed – November 2005**
 - Issued Interim Industry Guidance – May 2006
 - Implementation by July 31, 2006
- **NRC taskforce formed – March 2006**
 - Issued Lessons Learned report in September 2006
- **Licensees submitted questionnaires on historical events – July 2006**

History

- **Final Industry Guidance NEI 07-07 - August 2007**
 - **Implement changes by August 2008**
- **NRC revised significance determination process for effluents – September 2007**
- **EPRI Groundwater Guidelines TR1015118 – November 2007**
- **NRC RIS 2008-03 Return & Reuse of Previously Discharged Radioactive Effluents – February 2008**
- **NRC issued TI 2515/173 – May 2008**
- **Industry peer assessments of initiative implementation in 2009-2010**

NRC Requirements Assure Public Health and Safety

- **10 CFR 20 Subpart D Public dose limits**
- **10 CFR 20 Subpart F Surveys & monitoring**
- **10 CFR 50.34a Design objectives**
- **10 CFR 50.36a Technical Specifications**
- **10 CFR 50.75 Recordkeeping for decommissioning planning**
- **10 CFR 50 Appendix A General Design Criteria**
- **10 CFR 50 Appendix I Numeric Guidance to meet ALARA**

- **40 CFR 190 Environmental radiation protection standards for nuclear power plants**

Required Monitoring and Control of Public Dose

- Gaseous and liquid effluent release points are monitored and controlled
- Direct, ingestion and inhalation exposure pathways are sampled and analyzed
- Inadvertent releases are identified, assessed, and reported
- Public dose is calculated and controlled against quarterly and annual dose standards (ALARA)
- Results are reported annually in public reports

Ground Water Protection Initiative Builds Upon NRC Requirements

- **Applicable to all nuclear power plants**
 - Existing plants: integral to routine monitoring and maintenance
 - Decommissioning plants: improved planning and recordkeeping
 - New plants: incorporated into design and controls
- **NEI 07-07 and EPRI Technical Guidance**
 - Site characterization
 - Risk assessment: SSCs and work practices
 - Monitoring
 - Remediation decision protocol and records
- **Communication with stakeholders**
 - Leaks and spills
 - Ground water connected to drinking water with concentrations at or above the ODCM environmental reporting levels
- **On-going assessment of program's effectiveness**

Ground Water Protection Initiative

Industry Future Actions

- **Evaluate and incorporate lessons learned, NRC Groundwater Contamination task force report, and GAO audit report**
- **Continued improvement in managing potential for inadvertent releases – bolstered by Buried Piping Integrity Initiative**
- **Inform possible changes to NRC policy, regulations, and regulatory guidance**
- **Enhance public confidence that industry safely monitors and controls radiation and radioactive materials**

Fire Protection

John Butler
Director, Engineering & Operations
Support



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NFPA 805

- **Risk-Informed, Performance-Based Fire Protection Program (NEI 04-02)**
- **2 Pilot Stations**
 - **Harris Safety Evaluation - June 28, 2010**
 - **Oconee Safety Evaluation - 4Q 2010**
- **32 Stations (51 Plants) Transitioning**
 - **LAR Submittals – 6 Months after ONS SE**

NFPA 805 (continued)

- **Challenges**
 - **Fire PRA Development**
 - **Resources for Peer Reviews**
 - **NRC Resources for FAQs Response and LAR/SE Template Issuance**
 - **Significant Cost**

Fire-Induced Circuit Failures

- **May 2, 2010 – Non-compliances identified and entered into Corrective Action Program**
- **November 2, 2012 – Non-compliances required to be resolved**
- **Workshop held July 7-9, 2010 to discuss insights and lessons learned**

Fire-Induced Circuit Failures (continued)

■ Challenges

- Identification of New MSOs**
- Resolution on Non-compliances in 30 Month Enforcement Discretion Period**
 - Cost of modifications**
 - Lead time needed for engineering and finalization of design mods**

GSI-191



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GSI-191

- **Long-standing industry issue**
- **Actions taken by PWR plants have addressed safety significance of GSI-191**
 - **A highly conservative, deterministic approach was developed to address GSI-191**
 - **Plant modifications were based on the application of conservative tests and methods**
 - **All PWR licensees have replaced their strainers and implemented numerous design and operational enhancements**

