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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS)

525TH MEETING

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FRIDAY,

SEPTEMBER 9, 2005

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The meeting was convened in Room T-2B3 of Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, at 8:30 a.m., Dr. Graham B. Wallis, Chairman, presiding.

MEMBERS PRESENT:

- GRAHAM B. WALLIS Chairman
- WILLIAM J. SHACK Vice-Chairman
- GEORGE E. APOSTOLAKIS ACRS Member
- RICHARD S. DENNING ACRS Member
- THOMAS S. KRESS ACRS Member
- MARIO V. BONACA ACRS Member
- DANA A. POWERS ACRS Member
- JOHN D. SIEBER ACRS Member-at-Large

1 ACRS STAFF PRESENT:

2 SAM DURAISWAMY ACRS Staff, Designated Federal
3 Official

4 JOHN T. LARKINS Executive Director, ACRS/ACNW

5 CAYETANO SANTOS, JR. ACRS Staff

6 MICHAEL L. SCOTT ACRS/ACNW Staff

7 ASHOK C. THADANI Deputy Executive Director,
8 ACRS/ACNW

9
10 NRC STAFF PRESENT:

11 TOM ALEXION NRR

12 KIRSI ALM-LYTZ NRR/IPSB

13 HANS ASHAR NRR/DE/EMEB

14 RAMIN ASSA RES

15 RAJENDER AULUCK NRR/DRIP/RLEP/RL

16 DAN BARSS NSIR/DPR/EPD

17 TOM BLOUNT NSIR/DPR/EPD

18 BRUCE BOGER NRR/DIPM

19 BILL BORCHARDT NRR

20 KEN CHANG NRR/DRIP/RLEP

21 YOIRA DIAZ NRR/RLEP

22 RICHARD DIPERT NRR/DSSA/SPLB

23 JENNIFER DIXON-HERRITY EDO/OEDO

24 JERRY DOZIER NRR/DRIP/RLEPB

25 MARY DROUIN RES/DRAA/PRAB

| | | |
|----|--------------------------|-----------------|
| 1 | NRC STAFF PRESENT: | |
| 2 | BARRY ELLIOT | NRR/DE/EMCB |
| 3 | GREGG GALLETTI | NRR/DIPM/IPSB |
| 4 | GEORGE GEORGIEV | NRR/DE/EMCB |
| 5 | FRANK GILLESPIE | NRR |
| 6 | ANTHONY GODY | OEDO |
| 7 | CHRIS GRIMES | NRR/DE |
| 8 | JOHN HANNON | NRR |
| 9 | JON HOPKINS | NRR |
| 10 | KAIHWA HSU | NRR/DRIP/RLEP |
| 11 | AMY HULL | NRR/DRIP/RLEP-B |
| 12 | RONALDO V. JENKINS | NRR/DE/EEIB |
| 13 | PETER J. KANG | RES/MEB |
| 14 | ANDREA KEIM | NRR/DE/EMCB |
| 15 | SAMSON LEE | NRR/DRIP/RLEP |
| 16 | MARK LINTZ | NRR/DRIP/RLEP |
| 17 | TILDA LIU | NRR |
| 18 | LOUISE LUND | NRR/DE/EMEB |
| 19 | EILEEN MCKENNA | NRR |
| 20 | DUC NGUYEN | NRR/DE/EEIB |
| 21 | AMAR PAL | NRR/DE/EEIB |
| 22 | CARL J. PAPERIELLO | RES |
| 23 | VERONICA RODRIGUEZ | NRR/RLEP |
| 24 | THOMAS SCARBROUGH | NRR/DE/EMEB |
| 25 | RAMACHANDRAN SUBBARATNAM | NRR/DRIP/RLEP |

1 NRC STAFF PRESENT:

2 GREGORY SUBER NRR
3 DAVID TERAQ NRR/DLPM/PD41
4 LINH TRAN NRR/DRIP/RLEP-B
5 SUNIL WEERAKKODY NRR/DSSA/SPLB
6 JARED WERMIEL NRR/DSSA/SRXB
7 J.T. WIGGINS RES
8 ADAM WILSON RES/DET/MEB
9 JAKE ZIMMERMAN NRR/DRIP/RLEP

10

11 ALSO PRESENT:

12 AL BAIONE Parallax
13 MICHAEL B. DETAMORE PPL Susquehanna, LLC
14 MICHAEL HEATH Progress Energy
15 JONATHAN HINZE International Access Corp.
16 DONALD C. KOSLOFF FENOC-Beaver Valley
17 DAVID KUNSEMILLER FENOC-Beaver Valley
18 ALEX MARION NEI
19 CHALMER MYER Southern Nuclear
20 VIJAY NILEKANI IAC
21 ERACH PATEL Parallax
22 JAMES ROSS NEI
23 ROGER RUCKER First Energy
24 KAZUNOBU SAKAMOTO JNES
25 CHARLES WILLBANKS ATL International

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 Renewal Guidance Documents

Meeting with the EDO, Deputy EDOs, 47

 and NRC Program Office Directors

Adjourn

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

8:32 a.m.

CHAIRPERSON WALLIS: Good morning. The meeting will now come to order. This is the second day of the 525th Meeting of the Advisory Committee on Reactor Safeguards.

During today's meeting the Committee will consider the following. Draft final updates to license renewal guidance documents. Meeting with the EDO, Deputy EDOs and NRC Program Office Directors.

Interims results of the quality assessment of selected NRC research projects. Future ACRS activities. Report of the Planning and Procedures Subcommittee.

The reconciliation on ACRS comments and recommendations. And the preparation of ACRS reports. This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act.

Mr. Sam Duraiswamy is the Designated Federal Official of the initial portion of the meeting. We have received no written comments from members of the public regarding today's session.

We have received a request from Mr. Marion, at NEI, to make oral statements regarding the license renewal guidance documents. A transcript of

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1 portions of the meeting is being kept, and it is
2 requested that the speakers use one of the
3 microphones, identify themselves and speak with
4 sufficient clarity and volume, so that they can be
5 readily heard.

6 I would like to remind the members about
7 the interview of candidates during lunchtime today.
8 We'll turn immediately to the first item. Dr. Bonaca
9 is our expert on the subject of license renewal
10 guidance documents, and Mario, would you please lead
11 us.

12 MEMBER BONACA: Yes, good morning. When we
13 reviewed the first time, the guidance documents for
14 license renewal it was a few years ago now, we
15 commented on the importance that we have these
16 documents.

17 I mean we, I believe we used the words, a
18 remarkable compendium of information in the GALL
19 Report that it's, I think it's fundamental to support
20 license renewal, as well as support good pressure on
21 the plants, good maintenance, insightful, and most of
22 all, the distribution of information from unit-to-
23 unit, which I believe is responsible for improvements
24 in the Agency performance in the past ten years.

25 Now we have, since that time, a large

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1 number of license renewals, and of course there has
2 been an accumulation of exemptions, ACR precedence
3 situations, as well as a need to reorganize the
4 information inside the GALL Report.

5 And that's what the staff has really been
6 doing now. They have upgraded, significantly, the
7 guidance documents and they're here to talk to us
8 about that.

9 You may remember that in last March we met
10 to review this effort and before the document would go
11 out for comment. I believe the comments have been
12 received, have been addressed.

13 I believe there is some comments still
14 that will be provided by NEI today about a couple of
15 issues. But, in general, they've all been
16 incorporated, and so we're here to listen to the final
17 presentation of the final update of these documents.
18 With that, I'll turn to Mr. Gillespie.

19 MR. GILLESPIE: Mario, thanks, Frank
20 Gillespie, NRR. This document, actually, I'm going to
21 say it's even more important than what Mario said.

22 This is a major mid-course correction at
23 about the six-year point in about a 12-year program,
24 if you look at the number of plants we've done and the
25 number of plants we still have to do.

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1 We've actually had an organizational
2 change based on this document. Section B, which is
3 the Audit, or basically a technical support section
4 self-contained in renewal, was developed with the idea
5 that anything that was consistent with GALL, this
6 dedicated group would become the experts in it.

7 And the expansion of GALL now, has allowed
8 the Audit Program to expand, so that we're not
9 remaking the same decisions over and over, but we're
10 actually looking at applicability.

11 So it actually has changed, significantly,
12 the distribution of work within NRR, relative to
13 what's in the self-contained, technical support group
14 or the Audit Group, in what was formally being
15 actually re-reviewed time after time after time, down
16 in the Engineering Group.

17 So this is, this is not just a guidance
18 document, the guidance document has already had an
19 impact on organization, how we do it.

20 You heard from Millstone yesterday, where
21 they extensively used past precedence. So we used
22 them as a practice plant on kind of the expanded GALL-
23 kind of concept.

24 And I don't think we're going to do it
25 again. We've got a set here, and I'm only saying that

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1 in that it was so hard to do it this time, it was very
2 tedious.

3 I could recognize the technical support
4 contractor was a company, Parallax, and Al Baione was
5 our Project Manager there, he did a bang up job in
6 supporting Jerry as the leader.

7 Amy Hull. Amy is on loan to us from
8 Argonne. Plus the staff that helped. So this became
9 a very important document. There is a disagreement.
10 And I was quite pleased.

11 This is probably not what you'd normally
12 hear. Quite pleased to see that us and industry
13 actually didn't agree on the whole document. There's
14 a couple of areas in the electrical area I think
15 you're going to hear from NEI.

16 And I think the importance of saying there
17 are some minor disagreements is, in the end, this is
18 an NRC document. This is an expression of what the
19 NRC staff has found acceptable.

20 It's very nice to have a consensus with
21 industry, but I think each Licensee needs to know what
22 the baseline the staff is thinking from, as a minimum,
23 and then each utility can then decide what they want
24 to do that's different.

25 It's not a rule, it's a guidance document.

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1 And relative to at least putting that information out,
2 it's probably kind of nice to say that the staff
3 didn't fold every place.

4 And those points are still under
5 discussion. I think we will, you'll see a more active
6 program in the future, relative to keeping it up-to-
7 date. But, right now, GALL covers, with this new
8 publication, about 90 percent of those kinds of
9 decisions we've been making over and over and over
10 again.

11 And there's about a ten percent increment
12 that we'll be looking at in the future. That's also
13 why I don't think you'll see this major before. It
14 was kind of a midpoint.

15 It had input from about 25 renewals that
16 had been done. And we're actually seeing a lot of
17 repetition. When you break a plant down into
18 components and pieces, all of a sudden they actually
19 start looking very much more alike than what you might
20 think.

21 Traditionally, we say every one is unique.
22 The other think I'll say is the same team has input to
23 an international program that I chair with IAEA, that
24 has a first draft of an international GALL,
25 interestingly enough.

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1 There's four working groups. P.T. Kuo
2 heads one, which is the Regulatory Group. Then
3 there's a Mechanical Group, which is headed by the
4 Russians.

5 The EC actually provided the working group
6 chair for the Electrical INC Group, and Hungary and
7 Romania, Hungary and Bulgaria chair the Structural
8 Group.

9 So there's actually been some spin off
10 applications on what other countries have been seeing.
11 because we put everything on our page, it's had a very
12 favorable influence.

13 To have a document that both the regulator
14 and operator can use and know what a general baseline
15 of acceptable practice from operating experience, this
16 is really what this document is from. It's from
17 operating experience.

18 MEMBER APOSTOLAKIS: Are the Germans and
19 French participating in this?

20 MR. GILLESPIE: Because of the Germans
21 having officially declared that they're no longer
22 going to have nuclear power, they are observing.

23 And until the political situation in
24 Germany would change, the German government actually
25 cannot participate. And the French have not.

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1 It's interesting that the French have not.
2 And that has a lot to do with the fact that the entire
3 Eastern Block, Spain, Sweden, Finland and Japan, are
4 in, but the Eastern Block piece, there was some
5 initial discussion of the idea that this is countries
6 with the old VVR-440 designs. That this is applicable
7 to them also.

8 And that created some friction two years
9 ago when we started the project. The project ends in
10 July. We're looking at a first draft, the Steering
11 Committee is, this January.

12 It won't be as refined as what we have
13 nationally, because it's a consensus document, but
14 it's a tabular form, it looks very much like it. And
15 so it's a first start.

16 It's like, internationally, it's GALL 1,
17 which we had five years ago. Yeah, so it's had a
18 significantly influence in sharing this kind of
19 operational experience internationally.

20 So, the effort has been just, just, been
21 a horrendous one, on tight schedules and we made it.
22 But it's in a bigger context. This is actually a
23 guidance document that's had a significant influence
24 both internationally and domestically.

25 And on us, organizationally and process-

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1 wise on how we do a license renewal. So with that,
2 Gary, I'll turn it over to you.

3 MR. DOZIER: Okay, thank you very much.
4 Dr. Hull and myself actually are up here as leaders of
5 this effort. However, I have to thank tons of people
6 for making this actually happen.

7 If you get the GALL Report and open it up,
8 you'll see pages of contributors to this effort. From
9 all of the affected organizations. The NRC, the
10 contractors, the national labs and Argonne, a lot of
11 effort.

12 So we're just standing here to represent
13 an effort that was a lot of sweat of a lot of people.
14 So thank you for those, those people. Actually, to
15 address your question a little bit on, before I start,
16 on the international effort.

17 We did have international participation
18 and in this we also took this information to Paris.
19 Bill Borchardt at the Nuclear Conference in Paris,
20 presented a paper that was given to the French and
21 also about this effort.

22 There were two conferences in China that
23 representatives from RLF went to. And also we did
24 make local presentations. An international GALL group
25 came in the NIST. They were there and we gave a

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1 presentation there. So there has been international
2 interest and somewhat participation.

3 As Dr. Bonaca indicated, in March we came
4 to basically show some of the types of changes that we
5 had made to the GALL Report. In June, June of 2004,
6 that's basically, that was one of the earlier ACRS
7 presentations.

8 And we said that that's what, you know, we
9 shared with ACRS what we had planned to do. So with
10 this presentation, basically, I'm carrying forward
11 from the March time period into today.

12 And I'm going to focus on the changes that
13 occurred. If you said, well, what are all the
14 changes, we could show you a basis document and of
15 course we delivered our stack of paper and I think it
16 was about, it was probably about this thick.

17 So I appreciate you guys looking at that
18 information. So in this presentation I'll also share
19 the remaining schedule that we have, and of course
20 we'll be focusing on the license renewal documents.

21 First of all, the documents that we
22 already had and basically we revived, of course, was
23 GALL, SRP and Reg Guide. We have two new documents.

24 One is basically, when we put out the
25 information for public comments, in the February/March

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1 time frame, we captured those comments. We placed
2 them in a document. We addressed the comments. If we
3 incorporated the comment, we told them that we
4 incorporated it and where.

5 If we didn't, we explained why we didn't
6 incorporate that comment, and provided a
7 justification. I'll talk about that document a little
8 more in a few minutes.

9 Also the Technical Basis Document. This
10 is new and actually it shows the changes from 2001.
11 So if you say, well what are the changes from 2001?
12 And why did you do it? That's what's contained in New
13 Reg 1833, and that's, that's our Basis Document.

14 Remaining activities, we have a CRGR
15 meeting on the 13th. We hope to issue this document
16 September 30th, 2005. We'll have everything but the
17 Basis Document available on GALL and the website.

18 About a month later we should have the
19 hard copies, the official, bound copies. If you
20 notice the Basis Document is lagging about one month.
21 That was intentional. And what that's really doing is
22 actually giving even a second QA check to, you know,
23 the staff has to look at it again.

24 Are you sure this is the, does this
25 accurately reflect our staff position? And from this

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1 second QA check we got very positive results out of
2 that. So the Basis Document is coming soon, soon
3 after the other documents, one month later.

4 So back to the analysis of public comments
5 on New Reg 1832. We have various appendices in here.
6 We have a special section for ACRS. We break it up,
7 also, into the NEI comments.

8 We had, also during the workshop we
9 solicited comments. A lot of, and we got some comments
10 from that. We also got written comments that came in,
11 and a lot of those comments dealt with, most of them
12 weren't specific to our documents but they related
13 more to specific Licensees or considerations of other
14 things in license renewal, such as security and off-
15 site response and terrorism and things of that nature.

16 We also addressed those types of things
17 generally in that Appendix D. One other thing we did
18 to make it easy for the stakeholder to see how their
19 comment was addressed, was we did a side-by-side
20 comparison of, for example, the aging management
21 review line items.

22 We showed what it looked like in January
23 and right below it would be how it looks today. So
24 they could, without flipping to a bunch of different
25 documents, they could see how their changes were

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1 incorporated.

2 One of the items that we asked for in the,
3 we felt like GALL was complete but it could, we also
4 wanted to do one other thing. And that was in GALL,
5 and in a lot of the, in several of the aging
6 management review line items, we didn't specify a
7 particular generic program.

8 We would use the term plant-specific and
9 we would evaluate it on a, on a plant-specific basis.
10 We wanted to give a specific aging management program
11 for some of those if, you know, a generic program
12 could be applied for, to that AMR line item.

13 And so we asked for that. And we,
14 actually in it we even got new AMPs and that will kind
15 of the topic that I'm later talking about. NEI
16 proposed a couple of AMPs. We also found some
17 additional AMPs that we could write to do, so that we
18 could provide some specific guidance on these AMR line
19 items.

20 So that gives one reason why we had some
21 of these new AMPs. We also were, we have interim
22 staff guidance. And interim staff guidance program is
23 a program that's in place so that, for example, when
24 GALL 2001 was written, there were some things that
25 still needed to be worked out, some things that needed

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1 to be changed.

2 We have a process in place that kind of
3 makes the document living. That we can adjust. We
4 can provide our stakeholders with our current staff
5 positions. And if things change a little bit, we can
6 reflect it in this interim staff guidance process.

7 Also in these, some of the reasons for
8 providing these new AMPs, was we had some emerging
9 issues, and we wanted to address those. With that,
10 for example, on an emerging issue, nickel-alloy in the
11 heads.

12 That's a, you guys have seen the bulletins
13 and high attention that this has been given. We
14 address that in this. We have a new AMP, M11A, on the
15 closures heads. It basically reflects the, our
16 precedence on what we have found acceptable, and we
17 included it in this version.

18 M35 was a one-time inspection. We had,
19 this one came out of a, we had interim staff guidance.
20 Basically, this was just an incorporation of that
21 internal staff guidance.

22 M36, external surfaces monitoring. This
23 was an AMP that was proposed by NEI, and we, after
24 rigorously reviewing that and we made a few changes,
25 we incorporated that AMP. Another one proposed by NEI

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1 was flux thimble tube inspection. That was also
2 modified slightly and incorporated.

3 Since we had the external surfaces monitoring
4 AMP and we, we could also say we had, based on past
5 precedent, we could also say that, well, we've
6 accepted the PM Program for some of the inspections.

7 Now this is primarily focusing on the carbon steel
8 and general corrosion within these internal surfaces.

9 But, basically, we had a program that we
10 would accept that, when you go into your PM and you're
11 looking inside and you can perform the inspection.
12 Look for general corrosion, and we would accept that.
13 That's primarily what this new M38 is out.

14 Another one that we have accepted many
15 times and had been reflected in several of the
16 applications, was the lube oil analysis AMP, so we
17 also added that in.

18 VICE CHAIR SHACK: Jerry, just one, when
19 you pick this document up we all have our different
20 ways of approaching it. Of course what I did was to
21 leap to the aging management programs and leaf through
22 them.

23 And I come to one for PWR internals and I
24 find out it's been deleted. I'm sitting there
25 shocked. You know, you're not going age management of

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1 PWR internals anymore? And then of course I run back
2 to the tables to find out, look for components in PWR
3 internals and I find out they are being managed, it's
4 just that it's a commitment to the industry program
5 that's going to be developed.

6 It would seem to me to be better to
7 capture that sort of thing back in the aging
8 management description of the internals, rather than
9 just say deleted. Say that, you know, an aging
10 management program doesn't exist, but you know, why
11 since these are committed to following research in
12 this area, you know.

13 Whatever you say for the components really
14 should be reflected back in the aging management
15 program, rather than, you know, as I say, my first
16 shock is it's deleted?

17 MR. DOZIER: A more accurate word should
18 have been replaced. Because we do have -

19 VICE CHAIR SHACK: Right.

20 MR. DOZIER: - the new, you're referring
21 to M11. M11 was replaced by M11A.

22 VICE CHAIR SHACK: No, it's M16. I know,
23 M15. PWR Vessel Internals, deleted.

24 MR. DOZIER: Oh, I'm sorry, that is a
25 separate issue. I was, my thought processes was on

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1 the nickel-alloy, I'm sorry.

2 Yes, that was deleted and just as you've
3 summarized there, we've said that you, you still
4 follow the bulletins, generic letters and the industry
5 programs to do it.

6 It is an emerging issue. It is being
7 addressed.

8 VICE CHAIR SHACK: I'm just saying it would
9 be helpful to have that flagged or something.

10 MEMBER BONACA: I think Mr. Elliot would
11 like to make a statement.

12 MR. ELLIOT: Barry Elliot. I want to tell
13 you our thought process on that. We originally had a
14 PWR internals AMP. And it was generated from the
15 first two reviews we did, which was Calvert Cliffs and
16 Oconee.

17 And at the time, we had a lot of muscle
18 and we were forcing them to do a lot of stuff. And
19 during the process of review of other plants, we
20 decided there were a lot more issues that needed to be
21 addressed within the internals for PWRs.

22 Then, that we were initially talking
23 about. So what happened was the material, the PWR
24 owners groups got together and formed an MRP and
25 started developing a specific PWR internals program.

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1 And hopefully it will be comparable to the BWR VIP
2 Program.

3 And so we decided that designating a
4 program at this time, for PWRs, was not the right
5 thing to do. It would be much better if we just had
6 a placeholder which said that we will fill in the rest
7 of this when the MRP finishes their work and develops
8 a program similar to the BWRs.

9 VICE CHAIR SHACK: I agree absolutely.

10 MR. ELLIOT: And that's why we deleted the
11 program, because nobody was following the guidance
12 there. They were all saying we'll do whatever the MRP
13 wants to do.

14 VICE CHAIR SHACK: It's just at the moment
15 your placeholder says deleted.

16 MR. GILLESPIE: I understand. Let me, we
17 have a nomenclature issue and we can deal with the
18 nomenclature issue.

19 VICE CHAIR SHACK: I mean I realize the,
20 you haven't lost the problem.

21 MR. GILLESPIE: Let me throw something out
22 for the Committee, which actually might be interesting
23 as we proceed with further plant-specific reviews.
24 And this is a good example and there are several of
25 these in the whole thing. Is that we got some

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1 Licensees who's licenses actually could, they'll hit
2 the period of their first license.

3 And generally what we've done is put a
4 license condition on people that says you either have
5 to do what the MRP-approved program was, or, and it
6 has to be submitted and approved to the NRC 24 months
7 in advance.

8 We actually have some older licensees, who
9 likely will hit the 24-month point, before an approved
10 program exists. And the interesting question for the
11 Committee, as those happen to come up, and for example
12 Oyster Creek and some of these facilities will be that
13 close.

14 Is we're actually going to have to make a
15 judgement on a plant-specific program that meets, that
16 answers the mail. And so we're going to have, with
17 some of the older, real older plants coming in, some
18 real unique problems where we haven't got the generic
19 program that exists.

20 And the generic program might actually
21 have to come out of the plant-specific ones by
22 necessity. And I say that only because Oyster Creek
23 is in, and that's one of those older plants that
24 actually might have to do something plant-specific on
25 some of these references. So this thing is actually

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1 going to get us in kind of a box with some Licensees
2 that you're going to see over the course in the next
3 24 months.

4 MR. ELLIOT: Recent BWRs have exactly that
5 condition for PWR in terms that within, either give us
6 a program before license renewal, or two years before
7 license renewal, or give us your own program.

8 You know, give us an MRP program or give
9 us your own program within two years of anything in
10 the period. I think the first plant that really has
11 a significant problem there is probably Ginna, because
12 they're running pretty close.

13 But most PWRs were, you know, they have
14 plenty of time. And the PWR internals program will be
15 developed in time.

16 MEMBER BONACA: Still this is a good
17 comment. The question I have is, I haven't seen it
18 and think it's very, very significant. I think this
19 is a comment that can be addressed.

20 MR. GILLESPIE: It's a parenthetical we can
21 get, it is misleading to just say delete, because it
22 gives the idea that we're ignoring the issue, when in
23 fact there's major efforts going on throughout the
24 industry on the issue.

25 VICE CHAIR SHACK: I mean, and that's clear

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1 when you look at the rest of the document.

2 MR. GILLESPIE: Yeah.

3 VICE CHAIR SHACK: And as I say, for the
4 guy who does it like me and just starts to go through
5 the -

6 MR. GILLESPIE: Good comment.

7 MEMBER BONACA: We realize that these are
8 examples where you would need additional updates in
9 the future. At some point you said that never do it
10 again.

11 MR. GILLESPIE: No, no, but we're going to
12 have that ten percent and this is part of that ten
13 percent that's going to need careful attention. And
14 if the industry doesn't make it with the generic
15 answer soon enough, they may find us needing to just
16 fill something in based on what we approved plant-
17 specifically.

18 MEMBER BONACA: Okay.

19 MR. GILLESPIE: So there's actually kind of
20 a race going on.

21 VICE CHAIR SHACK: Presumably you'll be
22 more conservative because you'll have less
23 information.

24 MR. GILLESPIE: Remember, I always tell the
25 Licensees, remember, you're asking us for the license.

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1 MR. DOZIER: We will remove that word
2 deleted and we want to think about the best way of
3 doing it, but basically, I think, we would probably
4 say that it's addressed in the specific AMR line items
5 for the components.

6 We also had new electrical AMPs in the
7 electrical area. All of these AMPs were in the
8 January version. And we've had comments on these
9 AMPs. Metal-enclosed bus, actually, one of the areas
10 that NEI had told us in a public meeting a while back,
11 there was an issue there.

12 An actually, you don't have this slide,
13 but I have a hidden slide I can show you for E-4, and
14 also in this if Amar Pal would be prepared to also
15 speak.

16 This AMP E-4, basically what's
17 controversial a little in this, was that it had a
18 testing requirement in there to do thermography or
19 connection resistance every ten years.

20 We listen to that comment and we provided
21 an alternative. This alternative was visual
22 inspection. We also placed a frequency on this visual
23 inspection. We said that, you know, our real desire
24 was for them to continue with the testing using the
25 thermography or connection resistance, but for those

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1 who may choose another way, we said visual inspection.

2 And, like I said, we felt like that it was
3 not as an effective of an inspection technique. And so
4 the frequency of five years was chosen. If you say,
5 well, why wasn't it ten years?

6 Well, if you, like I said, we felt it was
7 less effective, and, if you put it at the same
8 frequency and you had a choice between visual
9 inspection and the testing, you would probably do
10 really what we prefer, not what we preferred.

11 So we placed it at a five year frequency.
12 That was one of the comments made at a public meeting
13 regarding this. Realize that this addition of -

14 CHAIRPERSON WALLIS: What can you tell by
15 visual inspection of the bolt? You can about tell
16 it's still there, aren't you? What else can you tell?

17 MR. DOZIER: There's, I'll refer to the,
18 Amar Pal, actually, if he can come up. But my
19 understanding is discoloration, you know, could be
20 seen. It is a less effective technique but, to give,
21 let me just give it to the expert and let him answer.

22 MR. PAL: Amar Pal, NRRDE. Yes, this
23 bolted connection, they are covered with something
24 like a tape or sleeves or some insulating material.
25 Then visual inspection would, may identify if there's

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1 some hardening going on, some discoloration, chipping
2 or something, you can see.

3 So that's the reason why we included that
4 option. But since visual inspection may not be as
5 effective as the testing, that's why we wanted a more
6 frequently distributed.

7 MR. DOZIER: But actually the contention,
8 I mean the area that's controversial actually is it,
9 that industry didn't like that we added the visual
10 inspection at five years. That was really the
11 criticism.

12 But really the staff's primary desire was
13 having the testing at ten. So we tried to respond to
14 a comment, but they didn't like the, actually, the
15 alternative that we had provided.

16 Another, E-5 dealt with fuse holders and
17 their, it was basically we had an interim staff
18 guidance for the fuse holders and we incorporated
19 that. No controversy, I do not believe, on that
20 issue.

21 E-6 was another new AMP. We provided it
22 for public comment, and realized that actually, in our
23 interim staff guidance position, that's really how we
24 get stakeholder input.

25 We come up with the guidance. We put it

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1 out for public comment. They comment on it, and then
2 we come up with a final position. So that's really,
3 and there is some dialogue in there along the way.

4 This parallels that type of process. So
5 this was new. It does address one of their emerging
6 issues and it dealt with connections and it, it also
7 supplements, we already had an AMP called E-1, that
8 dealt with some connections, but it only looked at the
9 localized environments.

10 It didn't look at some other environments.
11 One of the criticisms of this was that it was
12 increasing scope. But actually, all it does is, you
13 know, GALL is not a scoping document. All GALL says
14 is that if you have a situation that you, a particular
15 situation, you can point to certain AMPs.

16 And that's what this is. It's not an
17 attempt to increase scope. Scoping is done a lot
18 earlier in the process. If you have the situation
19 that this AMP talks about, then you can point to the
20 AMP.

21 Otherwise, the AMP wouldn't apply. So it
22 does not increase scope. And what, another concern of
23 it was that it had wording in it that, well, even if
24 it goes, you know, whether or not it goes to an active
25 or passive component. But we're talking about the

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1 piece of wire and the connection. It's not the active
2 piece of equipment.

3 Okay, so I'm getting back to -

4 VICE CHAIR SHACK: Jerry, one more question
5 on those Aging Management Programs. One of the nice
6 things I like now was that the references came back on
7 the Aging Management Program.

8 But what was the rationale for selecting
9 the references? First I thought it was only NRC-
10 approved documents, and every once in a while I would
11 find a literature reference, and every once in a while
12 I'd find, you know, a New Reg CR, which, again, is not
13 an approved document.

14 So, was there, you know, you just picked
15 what you thought were the best documents and if you
16 didn't have approved documents then you fell back to
17 journals and CRS?

18 MR. DOZIER: Amy, do you want to address
19 that?

20 DR. HULL: That was sort of a consensus
21 decision on the basis of different people who were
22 developing different Aging Management Programs. So,
23 it was what they found and thought what provided the
24 most comprehensive information.

25 In the 2001 version of GALL also there

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1 were some documents and EPRI documents that were
2 referenced that are not normally publicly available.

3 But if they contain the most succinct or
4 useful information they were referenced. In some
5 cases, for example, there may have been some
6 controversy and so an additional literature reference
7 might have been included to try to help substantiate
8 the staff's claims and intentions.

9 MEMBER APOSTOLAKIS: Isn't that the way it
10 should be done, Bill? I'm surprised what you're
11 saying?

12 VICE CHAIR SHACK: I'm pleasantly
13 surprised.

14 MR. GILLESPIE: Let me say that the staff's
15 job in this case was to come up with the right safety
16 answer. And GALL is an approved document. So once we
17 put it in GALL, it's there.

18 MEMBER APOSTOLAKIS: Wait, wait, wait a
19 minute. Just because GALL is approved, that doesn't
20 mean you approve all the references.

21 MR. GILLESPIE: No, but in pulling it in it
22 was, where's the best information that the staff would
23 accept, based on the staff's position. And it was
24 unprejudiced by the fact that we hadn't written it
25 down before or claimed ownership.

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1 MEMBER APOSTOLAKIS: I think what Dr. Hull
2 said makes perfect sense. And what Dr. Shack said
3 explains something to me, that over the years we were
4 always wondering out there why do Sandia documents
5 only reference Sandia reports?

6 And why do Argonne documents reference
7 Argonne reports? Now I understand that.

8 (Laughter.)

9 MEMBER APOSTOLAKIS: Nobody else has
10 anything to say.

11 MR. DOZIER: Okay, so that was the
12 electrical. Also we did, we did, we were very
13 transparent in this process. We, the ACRS may
14 remember that we started this project, the contract to
15 Parallax actually started in June.

16 We started and we had, even an initial
17 draft, a work-in-progress, in the September time
18 frame. And we placed it on our website that you see
19 before you.

20 That, you know, that was kind of different
21 because we were show them, okay, this is where we're
22 at at this point. That set the frame work for
23 dialogue with stakeholders, you know, from September
24 until the January time frame.

25 January we, of course, again published the

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1 information based on some of the, based on the
2 interaction that we got from the September version.
3 And that was the January version.

4 We again, as you see here on, when we gave
5 this information to ACRS we again provided it to
6 stakeholders so that they could see, you know, what
7 the works-in-progress were.

8 On this website we have, not only, we have
9 our meeting announcements and our meeting notes. This
10 is kind of like a one-stop area that shows what we've
11 done and where we've gone with information that we
12 had.

13 We also had some ACRS issues. They're
14 addressed in the public comment New Reg. I can
15 quickly go over some of those. ACRS asked for a link
16 for the interim staff guidance and the revised
17 documents. That is now in the public comment New Reg.

18 They also wanted to, us to assure them
19 that we have not lost any of the GALL '01 AMR line
20 items. We have a table in Appendix C that provides
21 that.

22 In one of the ACRS reviews of the ACRS, of
23 the, let me back up a little. In one of the ACRS
24 reviews of the SER, one of the ACRS members said that
25 the GALL report should clarify under what

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1 circumstances aging effects would be expected from
2 halon/carbon dioxide in the fire suppression system.

3 We worked very closely with DSSA to look
4 at that issue and make sure that the documents
5 reflected that, I mean, or was complete. On risk-
6 informed ISI, that was also made another one of the
7 ACRS reviews of the ISI.

8 So that wasn't specific to this, but we
9 captured them in a document anyway. Risk-informed
10 ISI, we, actually on that, what we did do, was we
11 updated the reports to reflect what's currently in 10
12 CFR 50.55(a), and that is the 2001 edition of the Code
13 through the 2003 Addenda.

14 However, based on, and naturally on risk-
15 informed ISI we have had plants and successfully
16 reviewed those applications. However, based on the
17 time constraints and the money and all these things,
18 we were not able to incorporate that comment in this
19 edition.

20 We had two exceptions to NEI 95-10.
21 Basically we presented those in the March time frame.
22 One dealt with exposure duration criteria, which we
23 didn't agree with, and they took it out in revision
24 six.

25 And they also had some criteria for

1 scoping of non-safety-related piping and supports.
2 We, they provided some additional clarification where
3 it did incorporate the staff's comments, and so
4 basically now Reg Guide 1.188 fully endorses NEI 95-10
5 Rev. 6.

6 So endnote, basically this is a work of
7 numerous staff, contractors and stakeholders. A lot
8 of hard work. We believe that the collection of these
9 inter-related documents reflect the staff's current
10 position and considers stakeholders' comments and
11 interactions.

12 We completed this in about 14 months and
13 we, just like the risk-informed ISI, everything is not
14 solved, and everything is not complete in this. But
15 we've got a much better document.

16 That we've had feedback, that it gives us
17 a more efficient, effective process and consistency.
18 We're getting the 90 percent matches in GALL, and I
19 think the important thing is that we intend to
20 continue the dialogue on the issues that we need to,
21 to go with, and would like for the ACRS endorsement of
22 these documents to be published in September.

23 MR. GILLESPIE: Mario, let me add one other
24 comment because this is a key word and Jerry didn't
25 say it. And that's capturing the information for the

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1 future.

2 And one of the things we added this time
3 which I think was one of the most important things
4 that we add to the whole thing was the basis document.

5 Actually something that explains how we
6 got from 2001 to now, and, because it was difficult in
7 2001. I asked the guys, I said where did the
8 information in the 2001 version come from?

9 And I actually made them go find 150 or so
10 research reports that were the basis for them. And we
11 found out they were hidden in closets at various
12 national laboratories.

13 But we did get a complete collection, and
14 you'll find those also on the web page. And so I
15 thought it was important for this idea of leaving it
16 for the next guys who come along, to have that string.

17 And that's something you, I think this is
18 one of the first times, other tech specs, which has a
19 basis document, that you see an attempt, at least, to
20 put the rationale down so people actually know where
21 the criteria came from in some sense.

22 MEMBER BONACA: By the way, for my review,
23 was a string useful.

24 MR. GILLESPIE: Yeah, I'm hoping it was.
25 Before you disagree with a criteria, understand where

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1 the criteria came from and disagree with where it came
2 from and now we can talk.

3 Give me some new information. And it
4 provides a better way to evolve the document.
5 Knowledge management, that was the word I needed, and
6 this is part of knowledge management.

7 CHAIRPERSON WALLIS: If someone wants to
8 disagree can they find these documents that are in
9 closets, or have you made an effort to -

10 MR. GILLESPIE: They're all on the web page
11 now.

12 CHAIRPERSON WALLIS: - electronic?

13 MR. GILLESPIE: Yeah, they are all on the
14 web page electronically.

15 CHAIRPERSON WALLIS: Oh, good.

16 MR. GILLESPIE: Yeah, that was a major, we
17 literally found them in closets and places because
18 people had forgot about them. They're really very
19 important research reports that were put together
20 through the 1980s.

21 MEMBER BONACA: Okay, any other questions
22 for the presenters?

23 (No response.)

24 MEMBER BONACA: If not, I thank you very
25 much for a good presentation and we have some comments

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1 from the Agency, I believe, Mr. Marion.

2 MR. MARION: Good morning, my name is Alex
3 Marion, I'm with NEI, I'm the Senior Director of
4 Engineering, and I do have a couple of comments I'd
5 like to make.

6 First of all, I'd like to thank the ACRS
7 for the opportunity to express a couple of points this
8 morning. Apparently, I'm going to have to hold this
9 microphone. That's all right. Do we have an AMP for
10 this device?

11 (Laughter.)

12 MR. MARION: We should. Okay, I'd like to
13 complement Frank and, Frank Gillespie, P.T. Kuo and
14 his staff because they've done a tremendous job in
15 documenting and incorporating many lessons learned
16 from the past review of license renewal applications.

17 And I'm sure you can appreciate, by the
18 volume of paper that you have, that's been presented
19 to you, for this meeting, it gives you a good sense of
20 the momentous amount of effort put forth by the staff.

21 One thing that has approved tremendously
22 has been the communications and the opportunities for
23 communication and the interactions between the
24 industry and the NRC.

25 But there are two issues that I want to

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1 bring to your attention, and Jerry spoke to them and
2 these are two of the Aging Management Program line
3 items that are in the Gall Report.

4 One dealing with aging management for
5 metal-enclosed bus duct, and this is E-4, as Jerry
6 covered. And the other deals with Item E-6 that
7 refers to bolted connections. And these are
8 electrical circuit connections.

9 The industry has not had an opportunity to
10 really engage the NRC in detailed discussion on the
11 second item. It's not clear to us that there is an
12 aging management effect associated with E-6, that's
13 going to be adequately addressed by an Aging
14 Management Program as proposed by the staff.

15 And we would like to have an opportunity
16 to engage in discussion on that topic. Going back to
17 E-4, the issue, as Jerry indicated in his
18 presentation, was the schedule for the visual
19 examination.

20 We have yet to find any kind of basis for
21 NRC identifying the five-year interval for the visual
22 examination. And quite frankly, we think that there
23 will be a number of exceptions taken by future
24 Applicants to these two areas, that will unnecessarily
25 consume resources in two areas that, quite frankly,

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1 are questionable at this particular point in time.

2 And let me just make a point to follow on
3 with something that Frank Gillespie said about the
4 healthy aspect, if you will, of disagreements within
5 the industry.

6 I do appreciate the fact that we will
7 never agree on everything, and that is healthy, at
8 least from the perspective of having an opportunity to
9 vent your points of view and listen to what the other
10 side has to say.

11 Our objective is never to achieve
12 consensus with the NRC in full agreement, however, our
13 concerns and our objectives are much more fundamental.
14 We would like to see the NRC demonstrate the burden of
15 proof in identifying new positions, if you will,
16 within the GALL Process.

17 Absent the NRC establishing a basis for
18 the new positions, our perception is that that new
19 position appears to be arbitrary, and I'm trying to be
20 as complementary as I possible can.

21 Secondly, we do believe in the public
22 participation process and the opportunity to have
23 these kinds of discussions and to vent these differing
24 opinions and points of view.

25 However, I do want to exercise a note of

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1 caution. We've made a tremendous amount of progress
2 with the license renewal process and the industry
3 overall is very pleased. But it's these small items
4 that keep cropping up that continually raise concern.

5 And I would ask the ACRS to consider the
6 evolution of such items that are integrated into the
7 license renewal process and the fact that there isn't
8 a basis for incorporating those items.

9 There isn't any basis that relies on past
10 operating experience, and there isn't any basis from
11 the standpoint of any known aging effects. And so I
12 go back to the two items that I raised previously.
13 And that's all I have to say this morning. Again, I
14 thank you for the opportunity.

15 MEMBER BONACA: Any comments on that?

16 MR. GILLESPIE: No, and I do appreciate,
17 and I think it is healthy, it's been a great dialogue
18 and it's going to continue. And it's interesting,
19 only yesterday, and this was on a plant-specific issue
20 we were talking about.

21 There's a, there's a comment in 54.21
22 which addresses what's in scope and how much aging
23 management you have to actually have. And I think it
24 gets to the crux of what Alex said and why we need to
25 continue to dialogue on these two points. And in

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1 there it says something to the effect, the Aging
2 Management Program has to be sufficient to ensure the
3 adequacy of the COB function.

4 Which doesn't mean it's as deterministic,
5 there's adequacy says you have a judgement in there.
6 And so there is room, in fact, for staff judgement
7 which GALL tries to document.

8 And that means there is room for continued
9 dialogue. And I think the onus is on the staff to
10 demonstrate. And we're going to have to do it in
11 these cases too. Why the Aging Management Program
12 we're proposing is necessary to ensure the function?

13 And it's interesting that the rule, the
14 way it's worded is an interesting way the way that
15 sentence is worded. It's not quite as deterministic
16 as people would maybe sometimes like to pose it.

17 So there is room for discussion. And, in
18 fact, it's the COB function of the thing. And if
19 there's no known aging mechanism then we should
20 basically acknowledge that.

21 So there is room for dialogue and we're
22 going to keep it up and that is healthy. I don't want
23 it to exhume extraordinary, I agree with Alex, on
24 minor issues that have maybe minimal safety
25 involvement. We shouldn't, we have to be pragmatic

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1 and shouldn't just spend resources arguing over them.

2 So I think we're going to get these
3 settled as we go to the final version. And the basis
4 document needs to document what our basis is.

5 MEMBER BONACA: The main concern I heard
6 from the industry is that they feel that the basis are
7 arbitrary or there is no basis for this problem. And
8 that expresses some level of frustration with the -

9 MR. GILLESPIE: Yeah.

10 MEMBER BONACA: - you know, when you don't
11 have a basis.

12 MR. GILLESPIE: And we'll just have to keep
13 dialoguing on these.

14 MR. DOZIER: Actually just on the higher
15 level, I did release all of the documents that have
16 been concurred upon, which was everything except for
17 the basis document.

18 So industry had an opportunity to look at
19 the public comment New Reg, however the basis document
20 is still in concurrence, so they have not had an
21 opportunity to look at the basis document.

22 MR. GILLESPIE: And that's where the
23 argument is. Again, it's the criteria is less
24 important than understanding the basis. And if our
25 basis is flawed, and that can be shown and we have to

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1 stand up and say, you know what, this is new
2 information, then the criteria changes.

3 So we've got to get the basis document
4 out. So we've got about a month to go, Jerry, a month
5 and a half? And then let's go toe-to-toe on the
6 basis, get it done and make a new decision if that's
7 what's required.

8 CHAIRPERSON WALLIS: I have a question for
9 Mr. Marion. I think you expressed a view that you had
10 an objective not to achieve consensus with the NRC.
11 Now you have a couple of questions here which you
12 brought back to the NRC, and you may well achieve
13 consensus eventually on those matters.

14 Would it then be a tragedy if there were
15 no bone of contention left?

16 (Laughter.)

17 MR. MARION: Dr. Wallis, don't take it
18 personally but I'm a practical man, at least I try to
19 be. And I recognize that we're never going to be in
20 full agreement 100 percent of the time.

21 But I have to say, you know, the bottom
22 line on this is if we don't keep track of these little
23 issues that come up, we're really going to, we're
24 really setting up a situation where the whole public
25 comment process is null and void.

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1 MR. GILLESPIE: Okay.

2 MR. MARION: And I think there is an
3 opportunity here, and I feel compelled to make the
4 request that maybe we need to take these two items and
5 open them up for public comment.

6 MR. GILLESPIE: Yeah, I, again, I think
7 it's going to be important, we need to get the written
8 basis in black and white down, and allow the industry
9 to critique our basis in black and white.

10 And sometimes you end up having too many
11 meetings and nothing is in black and white. So the
12 basis document will address it, and then let's put on
13 the gloves, have a fight and we'll be done.

14 MR. DOZIER: But I did want to say that
15 both of these issues were in the 60-day public comment
16 period.

17 MEMBER BONACA: Okay, well, I thank you for
18 the presentation. I wonder if there are any further
19 questions from the committee members?

20 (No response.)

21 MEMBER BONACA: If none, again, thank you
22 very much for a job well done. And Mr. Chairman.

23 CHAIRPERSON WALLIS: Thank you. The next
24 item on the agenda is at 10:00, a meeting with EDO. We
25 will take a break until 10:00. Thank you very much

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1 for your presentation this morning.

2 (Whereupon, the foregoing
3 matter went off the record at
4 9:28 a.m., and went back on the
5 record at 10:00 a.m.)

6 CHAIRPERSON WALLIS: Okay, we'll please
7 come back into session. Welcome Luis and your
8 colleagues, and I'll just make a very short
9 introduction.

10 We meet with you periodically, about once
11 a year, to share a high level view of your and our
12 anticipated activities. This helps the ACRS members
13 and our staff and you to make suitable plans.

14 You will be particularly useful to explore
15 those areas in which increased future activity is
16 expected and those to which we, the ACRS, our best
17 able to add value.

18 I understand that the way this meeting is
19 planned is for it to be a presentation by you, which
20 we will interrupt, in our usual way -

21 MR. REYES: Good.

22 CHAIRPERSON WALLIS: - with questions and
23 comments. So please go ahead.

24 MR. REYES: Good morning and thank you for
25 sponsoring the meeting. Since our last meeting in

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1 March of 2004, our organization and the outlook of our
2 future work have both changed extensively.

3 We welcome this opportunity to meet with
4 you and discuss these changes. The agenda that we're
5 about to go through specifically deals with the areas
6 that you requested, including License Renewal Program,
7 power uprate, fire protection, PWR sump performance
8 and new reactors.

9 In addition to the offices originally
10 discussed, Roy Zimmerman has joined us to project the
11 Nuclear Security Incident Response Office expected
12 work in the area of emergency preparedness.

13 During this presentation we want to
14 communicate to you the number of projected
15 applications in different areas, the complexity and
16 the fact that most of the expected work will be done
17 for the first time, which will make meeting the
18 schedule for the completion of the work, over the next
19 several years, challenging for the staff and for the
20 ACRS.

21 We greatly appreciate your continued
22 support in meeting the Commission needs and the
23 challenges that we have before us. Our presentation
24 will follow, Jim Dyer will start the presentation.

25 Carl Paperiello will be second and Roy

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1 will play clean up. And if that's agreeable with you,
2 Jim.

3 MR. DYER: Okay, thank you, Luis, and good
4 morning. I think just following on Luis' and Dr.
5 Wallis' opening remarks and that, I think, can I get
6 Slide 2, please. This is the topics that we discussed
7 with the staff to give you an overview on.

8 I was looking back at the agenda from the
9 March, 2004, meeting that we held, and noted that
10 sumps, power uprates, license renewals and new
11 reactors were the key, some of the key topics there,
12 and noted that 50.46, PRA quality and grid reliability
13 were the subjects that weren't repeated this time.

14 And, as could very well have been also
15 listed on this, because they're still very much active
16 issues that we have ongoing dialogue with ACRS and
17 work with the Commission and the industry on.

18 And, also, as you heard yesterday from
19 Exelon and the staff, our ongoing initiatives in re-
20 analysis or methods used for seismic analysis for
21 plants is an issue that's emerging or has emerged as
22 something that jointly the Office of Research and NRR
23 are working on.

24 I think, as Dr. Wallis said, the intent
25 with these subjects is, from my perspective, is to

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1 provide an overview of where we think we're at and
2 where we think we're going and how that's going to
3 impact our future activities.

4 And I hope that it facilitates the
5 recognition as Luis, we're not too subtle that we
6 recognize that going forward, particularly in the area
7 of new reactors, we have a lot of work on our plates.

8 And I was speaking Mr. Sieber before the
9 meeting but, you know, the Office of NRR is
10 reorganizing right now to facilitate that. We're in
11 a very much hiring, expansion and realignment and
12 really trying to focus our work in moving forward in
13 preparation for a rather substantial increase in
14 workload, particularly in the out years and starting
15 now, which will translate into additional work for the
16 ACRS as we go forward.

17 So, if I can go to Slide 3, the first area
18 of discussion is our License Renewal Program. So far,
19 to date, we've renewed, issued 35 reactors at 20,
20 issued license renewals for 35 reactors at 20 sites
21 and currently have, under review, licenses for 14
22 reactors at eight sites.

23 And, of course, they all go through the
24 ACRS on their way to the issuance and our review
25 process. Approximately, this, with what we have in

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1 house right now, it's about 50, halfway through the
2 existing operating fleet.

3 And so far, as far as we, in our informal
4 communications with the industry, is we know of no
5 plants that do not intend to pursue license renewal,
6 so it's a matter of scheduling.

7 Also, I believe, as you dealt with and
8 deliberated on and discussed with the staff this
9 morning, we are in the process of updating our
10 guidance documents.

11 The standard review plan, the generic
12 aging lessons learned, or as referred to update, as
13 it's referred to as GALL 2. And then the commensurate
14 regulator guides and that is a major effort that we
15 need to update our activities to improve our lessons
16 learned from these multiple renewals that we have
17 done.

18 And we certainly, you know, as we hope to
19 have those issued by the end of the month. Also in
20 our future review, as I said, we're halfway through
21 our continued budgeting in the area of, for license
22 renewals.

23 And I think it's, we have plants
24 identified or spots reserved to handle six a year.
25 And so it's a steady forecasted workload for the next

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1 several years that we're going to be maintaining that
2 rate.

3 So, as we go forward, we expect to
4 continue at this pace.

5 CHAIRPERSON WALLIS: I'd like to comment on
6 that.

7 MR. DYER: Yes.

8 CHAIRPERSON WALLIS: This is a significant
9 load for this Committee. As we've got experience with
10 it and as you folks have got experience with it, the
11 process has become more efficient, I think, every
12 time, we seem more efficient.

13 But we may have reached the point of
14 minimum that we can possibly do. And we can't reduce
15 our effort below a certain amount, we have a certain
16 obligation.

17 And so we've got to talk about where we
18 are. We still have to read a lot of paperwork and see
19 if there's anything in there that requires attention.

20 MR. DYER: I think in our, from our
21 perspective if it's, if we're just dealing with the a
22 standard license renewal, it's as you said, we were in
23 a very much production, making sure if they stick to
24 the guidance that we've issued, things go very
25 smoothly. Where we've seen the challenges, and I'm

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1 sure you've seen it, too, is when it gets creative.

2 And some Licensees will marry up a license
3 renewal with a power uprater, in the case of Browns
4 Ferry, the restart, and that's when we're out of our
5 plan or we've got concurrent major licensing
6 activities ongoing.

7 And those are the ones that challenge the
8 staff.

9 MEMBER BONACA: And we are looking, in
10 fact, at Browns Ferry, and it's, you know, giving us
11 some new challenges just because of construction going
12 on still for a plan that is presumed to continue
13 operation and to be renewed based on that operating
14 experience, but this plant is not running.

15 So there are challenges there and we're
16 dealing with it right now, for example.

17 MR. REYES: We understand that we're
18 probably at the level where we may not be able to get
19 anymore efficiencies out of the process. I just
20 wanted to add to what Jim said.

21 In terms of looking forward and my
22 comments will be more relevant as he goes to the next
23 slides, but this particular workload, when we look
24 into the horizon, we continue at the same level
25 through year 2009. After the year 2009, the workload

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1 continues at a much reduced pace, regarding license
2 renewal.

3 And that is really important for your
4 group because the next workload he's going to talk
5 about happens to be in the same time frame. So our
6 challenge that we talk about, why we're realigning
7 organization, etcetera, etcetera, is that in the
8 horizon we don't see this particular work going down
9 before the other one takes off.

10 So the years between now and 2009, are
11 going to be particularly challenging to both of our
12 entities.

13 MR. DYER: Okay, Slide 4, please. New
14 reactor work. And of courses this is the area of the
15 great unknown and the great amount of work on the
16 horizon, as Luis said.

17 Let me start off first by the design
18 certifications and recognize that the ACRS
19 contributions are in a number of areas and in this,
20 you know, as we look to the new reactor work and
21 historically, in the past, the review of all the
22 design certifications and a lot of, sometimes, the
23 review of specific pre-application reviews.

24 And I didn't put the pre-application
25 reviews on the slide, as we go forward, but recognize

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1 that you did contribute to the ACR-700, and again we
2 do have some pre-application reviews ongoing with some
3 novel designs in the IRIS.

4 Just started the EPR Review. But from a
5 design certification, certainly we're at the last
6 stages of AP1000 rulemaking. We're on schedule to
7 deliver hopefully by the end of this year, and involve
8 the ACRS in that final action.

9 Additionally, just last month, I think
10 it's, we're up to about two or three weeks ago we
11 received the ESBWR design from the General Electric
12 Company.

13 We're in the process of doing our
14 acceptance review and then we'll be laying out our
15 schedule. I know that ACRS has had, in our previous
16 design certification reviews you review in-process, at
17 the end, in the middle, key subjects and areas like
18 that.

19 And it's very much, as we really
20 understand what we've got and what the vendor is
21 asking for. We'll be in discussions with you about
22 what is the appropriate, when do you want to be
23 involved and when do we think we'll have something,
24 our conclusions and independent analysis.

25 So this is very much a significant and a

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1 flexible workload over the next few years, as we
2 undertake this review.

3 CHAIRPERSON WALLIS: Jim, I notice you only
4 refer to ESBWR in AP1000. These are reactors that are
5 cooled by light water. They look like things we've
6 seen before, existing codes work for them and, you
7 know, it's not all that difficult to extend our
8 expertise to a few areas we may need to do so.

9 But in some of the other designs, there
10 are differences from previous machines are more
11 significant, and I noticed you haven't put them up
12 here. But we're anticipating, sometime down the road,
13 we'll have to deal with new reactors which are not
14 like familiar machines.

15 MR. REYES: Yes, we expect the next one to
16 come will still be familiar to all of us, the APR.
17 That's the next design certification we expect. After
18 that, it's very hard for us to decide which one is
19 next.

20 In our fiscal year '07 budget, Carl has
21 some small amount of money to try to get ahead of the
22 issues you talk about. We have to develop codes. You
23 have to develop some basic expertise in anticipation
24 of some of those designs.

25 But are problem is that it's hard for us

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1 to give you an insight on when those applications are
2 going to come in. We, ourselves, don't know, so we're
3 just starting to do a little bit of preparatory work
4 in the Office of Research in anticipation of that.

5 MR. DYER: And we're dialoging with the
6 vendors on those designs to get a better understanding
7 of what is their schedule and do they have a sponsor
8 here in the United States that is going to use the
9 design?

10 MEMBER KRESS: Did EDF submit the EPR?

11 MR. DYER: No, what they did is they sent
12 us a letter that it looks like it could be in 2008.

13 MR. REYES: What they're doing is they have
14 opened an office in the United States. They're
15 translating all the documents from French to English.
16 They have had some discussions with us and we do
17 expect them, as Jim said, to be the next design to
18 come right after the ESBWR, and that's the extent of
19 what we know with their plans.

20 We can tell you that in informal
21 discussions, some of the utilizes that are considering
22 putting, that have announced COL or are considering
23 and we can tell you that every week we were told
24 there's another announcement coming up next week,
25 there's another announcing coming up next week. But

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1 some of those utilities who have not revealed their
2 technology decision or are in that group that tell us
3 we're going to make an announcement next week, are
4 considering the EPR in the options, in the options.

5 MR. DYER: And as I go through and, with
6 most of them are announcing the combined license
7 request and everybody is coming in in 2008.

8 That's just the way the announcements are
9 going. Okay, any other questions on design
10 certification or pre-application reviews?

11 (No response.)

12 MR. DYER: The next subject is certainly
13 our early site permit reviews. And, again, we're in
14 the, wrapping up the reviews on the first three pilots
15 that we've undertaken.

16 ACRS has completed their review on the
17 North Anna early site permit and the, our goal now is
18 the Grand Gulf safety evaluation to be issued in
19 October and schedule an ACRS meeting in December.

20 And the Clinton SER to be issued in
21 February of '06, and then try to get an ACRS meeting
22 in March, is our near-term schedule.

23 On the horizon, as Luis said, we have a
24 number of utilities talking to us about filing for an
25 early site permit, and in the same light, certainly

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1 Southern Company yesterday came in to discuss with us
2 filing an early site permit at Plant Vogtle, Site
3 Vogtle, at the Vogtle site in the summer of next year,
4 2006.

5 And we have, Constellation has talked and
6 may submit an early site permit for a site that hasn't
7 been designated, in 2007. And so those are the
8 activities in the early site permit area.

9 I think the discussion you had yesterday
10 with the Clinton site and the proposing a new
11 methodology of seismic analysis is certainly one of
12 the areas that we're going to, we'll be coming to you
13 and we'll be continuing dialogue in this area.

14 MR. REYES: I tried to explore with utility
15 executives trying to get an idea, are we going to see
16 a shift on utilities going directly to the combined
17 operating license versus going first to the early site
18 permit?

19 And the feedback I got is there are still
20 some utilities who prefer to go to the early site
21 permit first. It fits their business horizon. So if
22 I have to tell you, I think we're going to continue to
23 receive some of that work.

24 Perhaps not as aggressive as getting three
25 in one year, but I, I was surprised, to be honest with

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1 you, but they tell that they, we should expect some
2 additional early site permits to come down the road.

3 MR. DYER: I think one of the challenges
4 with the early site permits, too, is the interest in
5 some of the designs that the utilities have interest
6 in some of the designs that are yet to be certified.

7 And so the early site permits are coming
8 in with their, with a plant parameter envelope and
9 it's lack of specificity in some of the uncertainty as
10 they come in. And that's a challenge for the staff in
11 our review in defining this envelope accurately in our
12 safety evaluations and in presenting it to you.

13 The next subject is certainly
14 infrastructure. And in the near term we're working to
15 issue a proposed rule to revise 10 CFR Part 52, to get
16 that proposed rule out.

17 And after public comments and that, then
18 we anticipate we'll make the revisions and be working
19 through ACRS to, as we prepare the final rule of the
20 Commission.

21 Also, we are anticipating and are planning
22 for a significant increase in workload, internal to
23 the staff, in developing and improving our licensing
24 infrastructure.

25 Our standard review plan, the chapters,

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1 the main chapters in that that ACRS has reviewed to
2 take a look at updating that. As you may be well
3 aware, our budget so far, as it's gone for is, for
4 Fiscal Year 2006, contained a 20 million dollar
5 supplemental funding to get ready for the new reactor
6 growth.

7 And a large portion of that is going to be
8 invested in improving our infrastructure of the
9 standard review plan. So the staff is now putting
10 together a schedule for dedicating the resources that
11 we're getting from Congress to enhancing the standard
12 review plan chapters and updating them in the reg, in
13 the requisite reg guides that go along with them, in
14 preparation.

15 And that, I would anticipate that, as we
16 develop that schedule, that will be of interest to you
17 because we will be coming to you for the technical
18 reviews and presenting them to you as part of our
19 infrastructure development process.

20 Now, the combined licenses is the looming
21 work on the horizon. And as I said earlier, there's
22 a number of combined licenses coming. Dominion has
23 declared that they are looking to be the first to
24 submit a combined license application in 2007.

25 Then that will be followed, we've also

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1 heard from Duke, Progress Energy, and then two from
2 the NuStart Consortium of utilities. And those are all
3 looking in the 2008 time frame.

4 What I think makes this a real challenge
5 is that they haven't identified the designs. And, in
6 fact, if they are interested in EPR or the ESBWR,
7 something other than the AP1000 or the ABWR or the CE
8 System 80 Plus, their combined license may in fact
9 come in before the design certification process is
10 complete.

11 Which would then have the staff and
12 possibly ACRS looking at the technical merits of the
13 designs as part of a combined license, as well as part
14 of the design certification process.

15 And so that's a challenge as we go
16 through, as we work this out and develop these
17 schedules and look at these overlaps as to when are
18 the utilities going to come in with this rather
19 significant workload, quite frankly.

20 So that's one of our challenges.

21 MR. REYES: Let me just add to that to help
22 you paint a picture that I've been trying to read.
23 The yet to be announced Applicants, the rumors that
24 there's more announcements coming, we're worried and
25 we think we know the answer. Which is they're going

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1 to continue to come in for 2008, and the question is
2 what's magic with 2008?

3 Well, let me explain you the driver. The
4 need for generation for the year 2017, for the period
5 2015 to 2017 is what's driving it. There are parts of
6 this country where the electrical generation needs for
7 that period of time, the projections are significant
8 in terms of the need.

9 If you assume you have a five year
10 construction program and you subtract those numbers
11 and then you subtract the time that the Agency has to
12 review the application, the math quickly leads you to
13 2008.

14 So we are expecting announcement that we
15 don't know of, but we're expecting everybody to
16 continue to announce 2008. Which go back to my
17 original comment with license renewal still at the
18 same pace to 2009, now you see the picture for both of
19 our organizations in terms of what's looming ahead.

20 MR. DYER: And I, I forgot to admit
21 knowledge that South Carolina Electric and Gas has
22 recently announced that they are, they are looking at
23 a combined license at a date to be determined. So
24 that is also on our horizon, there's another utility.

25 MR. REYES: And they have hinted that it's

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1 2008.

2 (Laughter.)

3 MR. DYER: Okay, Slide 5, please. One of
4 our technical, ongoing technical dialogues with the
5 ACRS is certainly the power uprates and the ACRS
6 reviews of extended power uprate amendments, as well
7 as some of the emerging technical issues that have
8 come out of the power uprate program.

9 Certainly one of those technical issues is
10 the BWR Steam Dryer issues that were most prominent at
11 the Quad Cities Nuclear Station when the dryer broke
12 apart, but it has raised questions about some of the
13 other square hood design dryers and the ability to
14 adequately predict.

15 And most notably now it's an issue that is
16 one of the open items certainly for our review and
17 soon to be, you know, your involvement with the
18 Vermont Yankee extended power uprate review on that.

19 The BWR Owners Group has been and General
20 Electric has been working on testing and instrumenting
21 the Quad Cities in Dresden dryers and getting that
22 information and putting together a modeling concept
23 and presenting it to the staff.

24 And that work has been ongoing. And I
25 think the staff is gaining a better understanding of

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1 what's going on inside these steam dryers with the
2 increased velocities of steam and as we go forward.

3 The other, a more emerging, new technical
4 challenge, and I think this, this we've had dialogued
5 before because ACRS recommended, as a result of some
6 of our previous EP, Extended Power Uprate Reviews,
7 that the staff look more critically at some of the
8 accident and transient analysis codes and method used
9 as we have issues with both, some of the PWR and BWR
10 methodologies issues.

11 One of them is an open item that we're
12 still working with the Entergy for the Vermont Yankee
13 Extend Power Uprate. And we had issues raised with
14 some of our PWR LOCA analyses recently that we're
15 working on as part of our resolution of some of the
16 extended power uprate issues.

17 This is an area that is still evolving.
18 You know, extended power uprate from when we last
19 talked it was, it was, power uprates was an issue that
20 was an emerging technical issue.

21 Unfortunately, I think it's still emerging
22 and we're still learning things about the Extended
23 Power Uprate Reviews and doing some first-of-the-kind
24 reviews, and that's an area where we, the staff, are
25 going to be focusing a lot of attention in the

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1 upcoming year. In that we, you know, we set a budget
2 and we allocate our resources based on what we think,
3 what our best engineering judgement is going to tell
4 us is what it takes to do a thorough review to these
5 proposed uprates.

6 And in almost all cases it's taking more
7 than we're planning, because of surprises as we go in
8 and start doing the review. So this is very much an
9 emerging issue.

10 Additionally, the infrastructure issues
11 were, you know, we've issued the review standard '01,
12 for the extended power uprates. I think the Ginna
13 Extended Power Uprate will be the first plant that's
14 going to come in using the format prescribed by the
15 Review Standard '01, and we now have that in-house and
16 I believe, if not already, but sometimes during the
17 September meeting you're going to be talking to staff
18 about Reg Guide 1.82, the latest revision.

19 And that's an important part of, for the,
20 particularly for the boilers on the power uprate and
21 net positive suction head.

22 We, as I said, the Power Uprate Review
23 Schedule looming on the horizon is, we currently have
24 seven extended power uprates under review and expect
25 to have three more in next fiscal year. We have a

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1 total of 20 more power uprates coming.

2 Some of those, the majority of those are
3 measurement uncertainty recapture and the stretch
4 power uprates that traditionally ACRS has not reviewed
5 but never, you have handled some of the emerging
6 technical issue such as the questions that were raised
7 about the ultrasonic flow meters and its ability to
8 accurately predict the flows.

9 So this is an area that I think we need to
10 be sensitive to and going forward it's one that we may
11 have new resolutions and new questions and new issues
12 to bring before ACRS. Slide 6, please.

13 Fire protection. Fire protection is an
14 issue I wished I wasn't reporting on, but I am and it
15 is still something that is very much an ongoing issue.

16 The first part, of course, the
17 Performance-Based Fire Protection Rule, NFPA 805. We
18 issued the final rule in June. We issued a Draft Reg
19 Guide in 2004, and we're anticipating going to the
20 ACRS full Committee next month in October of 2005, and
21 hope to issue a final Reg Guide before the end of the
22 year, hopefully in November.

23 This also, and related to this is the,
24 with the final rule out, we now have two pilot plants
25 or pilot utilities that have identified. Both Duke

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1 and Progress Energy have come forward and identified
2 their intention to implement or to pilot the NFPA 805
3 Risk-Informed Fire Protection Rulemaking.

4 And so we're in the process of, you know,
5 following through on their transition to this
6 alternative rule. Circuit issue resolution. We have
7 a, we were, sort of had a minor course correction, I
8 think, at the beginning of the calendar year, end of
9 last year.

10 And on circuit issues we issued a
11 regulatory information summary earlier this year and
12 now have a draft generic letter with we're going to
13 propose to get out for comment this month and
14 hopefully and after we get the public comments, look
15 forward to briefing the ACRS in February of 2006, on
16 this generic letter associated with, well, associated
17 with the circuit analysis, circuit issue resolution.

18 Another issue is Hemyc and MT Fire Barrier
19 Resolution. I think as a result of some recent
20 research findings, a good research effort, completed
21 a testing on these barrier materials.

22 We've issued a regulatory information
23 summary concerning those and we're looking to issue a
24 generic letter on this subject and hope to have that
25 to ACRS in December of this year. And then lastly,

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1 the manual action rulemaking.

2 We've gone out on a proposed rule to
3 identify, you know, what the value would be for the
4 industry and potential use of the manual action
5 rulemaking and how many exemptions is it going to
6 eliminate going forward.

7 We're currently evaluating those results
8 and depending on whether or not, we need to make a
9 decision whether or not we're going to proceed with
10 the manual actions rulemaking. And depending on that
11 will be whether or not we're going to be coming to
12 ACRS on this particular subject. Next slide, please.

13 Slide 7. PWR Sump Performance, commonly
14 referred to as Generic Safety Issue 191. I think this
15 is an issue where the ACRS and the staff have had an
16 extensive and continuing dialogue.

17 This first slide sort of lays out our
18 overview of the sump performance strategy. The top
19 line was our compensatory measures were more on the
20 short-term actions that we've taken to address the
21 concerns of GSI-191.

22 CHAIRPERSON WALLIS: We're reading from the
23 slide because the screen shows that you have no, you
24 have no approach to this problem.

25 (Laughter.)

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1 MEMBER APOSTOLAKIS: That's very
2 unfortunate.

3 (Laughter.)

4 MR. DYER: I've got to go speak quickly
5 now, huh?

6 (Laughter.)

7 CHAIRPERSON WALLIS: I think we can just
8 use the written paper handout.

9 MR. DYER: On your handouts, the gold
10 slides, the gold blocks are those blocks that are
11 currently in progress, where we're at on these slides.

12 And so for the top block, where we're
13 talking about our compensatory measures and we're
14 currently reviewing the bulletin responses that we had
15 sent out with Bulletin 2003-01.

16 We've had dialogue with a number of
17 utilities and feel comfortable that the utilities have
18 taken the compensatory measures that can significantly
19 reduce the risk associated with this issue.

20 The longer term path, the Generic Letter
21 2004-02, is, the issues are still ongoing. I know
22 that we've had several letters back and forth on this
23 particular issue as the staff moved forward.

24 But the staff has taken some actions, you
25 know, on our part to address your concerns. I think

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1 this is one where from the staff's perspective we're
2 trying to make progress as we go forward.

3 CHAIRPERSON WALLIS: There are two things
4 that occur to me. One is that these Licensee
5 submittals have come in.

6 MR. DYER: Yes, sir.

7 CHAIRPERSON WALLIS: I think they're
8 available on the Internet.

9 MR. DYER: I think as they're being
10 catalogued and presented, given the due dates for the
11 submittals that came in on September 1st, was the due
12 date. And so whether or not they're available -

13 CHAIRPERSON WALLIS: I think, I think there
14 will be some form in which we can access them.

15 MR. DYER: There will be soon if not. Yes.

16 CHAIRPERSON WALLIS: But what we're really
17 looking for is the staff response to them. I think
18 we're very much in suspense about what these will
19 show.

20 MR. DYER: So are we.

21 CHAIRPERSON WALLIS: And the other thing is
22 that there's still some technical areas which, you
23 guys don't even know, well, maybe we'll hear about it
24 later, are being researched.

25 And this gives the potential for

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1 surprises.

2 MR. DYER: I think we agree. If I can go
3 to Slide 8. This is the near-term schedule that sort
4 of fits those blocks as we were talking about. And I
5 think, Dr. Wallis, getting your point, we're also
6 still in the process of doing the pilot plants.

7 And I think we're on our second one now.
8 And, at the Fort Calhoun Station. And then also
9 effective, you know, for the most part, the first of
10 September, we started getting in the Licensees
11 responses to the Generic Letters and we're in the
12 process of reviewing them and certainly we can
13 schedule a summary briefing of the ACRS as we
14 understand them and we're going to put them on the, if
15 they're not, they'll be in the ADAMS System and
16 available for you.

17 Also, after I complete -

18 VICE CHAIR SHACK: Is everyone going to
19 meet that 9/1 deadline?

20 MR. DYER: I don't know. I think they'll
21 probably tell us something. I've got David Solorio
22 here and John, Tom, can you -

23 MR. O'HARA: Yeah, Tom O'Hara from the
24 staff. We currently have 68 out of the 69 PWRs are in
25 one way or the other. Waterford requested an

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1 extension because of the hurricane so they're not
2 quite in yet.

3 MR. DYER: So I think everybody has made a
4 good faith effort to get it in. And the staff has
5 acknowledged that as we review them, we're going to be
6 reasonable as we go forward.

7 Carl will touch on some of the research
8 aspects, too, but our overall goal is to have this,
9 have resolution of this GSI by the end of 2007,
10 calendar year 2007.

11 And, of course, as a result of that, in
12 order to do that, once the staff gets its resolution,
13 then we'll have to present it to the ACRS and I'm sure
14 we'll have, as was requested, we'll have several
15 dialogues between now and then on this subject.

16 MEMBER SIEBER: Do you expect any of the
17 research and experiences that the PWRs will have in
18 the next two years, will cause you to look again at
19 DWRs?

20 MR. DYER: I do not see, I think Carl can
21 talk about some of the research activities. I don't
22 think it's going to, what we're going to learn is
23 going to address the BWRs.

24 I think we may have to re-look at some of
25 the PWR solutions as whether or not our margins was

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1 correct and what some of the solutions are. But this
2 is very much, the research is just being done now.

3 MR. REYES: Carl is going to touch on it
4 but I think the chemical reactions are the drivers of
5 the issues. And I think you'll have a different
6 situation in the environment on the boilers in the
7 PWRs, but we're going to share with you where we are
8 on that.

9 MEMBER SIEBER: All right.

10 CHAIRPERSON WALLIS: I see you put down
11 12/05, PCR Subcommittee meeting. This is a detail we
12 shouldn't really need to get into, but I don't think
13 it's on my schedule.

14 MR. DYER: Okay.

15 CHAIRPERSON WALLIS: I'm just curious about
16 it.

17 MR. DYER: Okay, we'll take that for an
18 action item. Okay, with that, let me turn it over to
19 Carl to talk about some of the research activities
20 going on in GSI-191.

21 DR. PAPERIELLO: Okay, if I could have
22 Slide 9. Before I talk about an overview, I'm just
23 going to talk about the research supporting Generic
24 Safety Issue 191.

25 We stated about a year ago in conjunction

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1 with the industry, ERPI, the integrated chemical
2 effects testing.

3 The, further, as a result of some of the
4 earlier results, there additional lines of research
5 were added. Head loss, downstream effects and
6 coatings transport. They are being done by us and not
7 in conjunction with the industry.

8 For the chemical effects testing, the
9 experimental work is done and with our agreement with
10 EPRI, we share the raw data. Each of us interpret,
11 does our own data interpretation. And we're in a
12 process of doing that, as well as getting further
13 research on the compounds.

14 We got different chemical compounds as we
15 ran different tests in different configurations, you
16 have different chemical reactions.

17 Some people were surprised. From my
18 viewpoint, at least in some cases, they remind me of
19 what you learned in general chemistry, sodium
20 hydroxide reacts with aluminum and forms hydrogen in
21 a gel, aluminum hydroxide.

22 We know what compounds of phosphate are
23 insoluble and what are soluble, from our general
24 chemistry classes. And so some of these things I'm
25 surprised, from my side, that they haven't been

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1 thought of before.

2 But we have them. The question is what
3 are the actually detailed compounds, all of them?
4 What are their physical forms? The various types of
5 crystalline structures or amorphous structures and
6 things like that.

7 If you know anything about boron, you know
8 that boron can have incredibly complex chemistry, so
9 I don't know if there's any straight, what I'll call,
10 straightforward. We only have to deal with general
11 chemistry compounds or whether or not we got some
12 compounds that can form more complex molecularly.

13 We'll know that when we're done all those
14 analyses.

15 CHAIRPERSON WALLIS: Carl, not to get into
16 details, but you said this research is done.

17 DR. PAPERIELLO: Right.

18 CHAIRPERSON WALLIS: Did it answer the
19 questions or are you going to have to do more?

20 DR. PAPERIELLO: I don't know. What I'm
21 hoping, and there has been some testing of chemical
22 thermo-hydraulic codes, and one code seems to be
23 promising.

24 I don't see how we can possibly do more
25 testing. I guess you could, but we're going to need

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1 some, a lot more resources to do it. We have already
2 put several millions of dollars into these tests.

3 And I, it looks like things depend on so
4 many different changes, that running two or three more
5 tests may not help us very much. You might have to,
6 and, if anything, we may have to run every
7 configuration out there, or somebody has to run them.

8 It might be the burden end question is why
9 not the Licensee, if that is required. I'm hoping
10 that we can get, as a result of these data, we can
11 come up with - I'm hoping, this is my personal view,
12 not necessarily my staff, is we could find a thermo-
13 hydraulic, not thermo-hydraulic but a , thermo-dynamic
14 chemical, thermo-dynamic code which works well enough.

15 The issue is well enough to predict what
16 would likely happen. Headlosses we're looking at in
17 terms of the kind of materials that are being used and
18 how they behave under flow and under compression with
19 variable flow rates.

20 Downstream effects if material gets
21 through the screens what will happen to them as they
22 pass various choke points in the system. Right now
23 we're looking at the high pressure safety injection
24 throttle valve performance.

25 And then coatings transport. If coatings

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1 material comes off containment and various objects in
2 containment, what do they do when they hit the pump
3 screen?

4 We expect most of the current research
5 program to be done by April. Now whether we're going
6 to have some results that require additional work, I
7 don't know. I would be surprised if everything is
8 wrapped up.

9 I will not be surprised if we have loose
10 ends that have to be dealt with and we're going to
11 have to figure out where to go.

12 MR. REYES: One of the questions that I
13 don't want to be ruled out, that I think we need to
14 reflect on is concentrate the effort here on the
15 chemical reactions on all that, but we need to ask the
16 basic question do we know now a lot more than we did
17 when we decided to have those chemicals be put in?

18 We may be solving the wrong problem. So
19 the issue is still broad enough that we can give you
20 a good feeling of where it is but I think the testing
21 has given us enough to try to raise the questions.

22 DR. PAPERIELLO: It raises the question.

23 MR. REYES: To raise the questions and
24 we'll have to go in that particular endeavor to find
25 out how do we solve it?

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1 DR. PAPERIELLO: We use, I mean, and one
2 reason for using additives is fixing iodine so it
3 doesn't go airborne after it's washed out.

4 The question is do you need it? Or is
5 there another way to do it? I mean, I think, but that
6 is an option.

7 MR. REYES: And we learned a lot in Three
8 Mile Island about the, how the partition occurred
9 etcetera, etcetera, and all those decisions with the
10 chemicals preceded all that.

11 And, but there has been, there hasn't been
12 a driver that has forced us to take a hard look and
13 say did the decision we made in the '60s and '70s, in
14 today's environment, do we know better?

15 And that may be, it's completely different
16 with the approach that we're taking, but it all comes
17 out of the same issue.

18 DR. PAPERIELLO: Okay, can I have Slide 11,
19 move two slides forward. Okay. I want to start my
20 presentation with expressing my appreciation for the
21 ACRS's review and input to research products. And we
22 see your review as value-added.

23 Having said that, my observation is we
24 don't always agree with you and I have always
25 expressed the view to my staff, that that's okay. And

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1 if we do disagree with you I want it said and not
2 sometimes, frankly, I've seen documents come across my
3 desk where we really didn't agree, but we just
4 swallowed our tongues and put out what I'll call a
5 politically nice answer and I don't like that.

6 I'm a Scientist and I, frankly, am
7 pursuing what is the truth. And that doesn't solve
8 the problem. But I do, it's important if you see
9 weaknesses in what we do, you point them out.

10 But if we disagree with you, it's
11 important for us to disagree and we'll hash it out so
12 we come out in the right place.

13 You're also part of our quality
14 initiative. When I took over research I was very much
15 concerned with the issue of quality. Actually, I'm
16 less concerned today than I was when I first took
17 over.

18 I mean my view of, as a manager, I'm
19 interested in quality, quantity and timeliness, the
20 three performance goals. I can measure timeliness, I
21 can generally measure quantity, but quality is
22 something very difficult to do.

23 Usefulness in my book is a, is somewhat of
24 a surrogate for quality in what we do. What I've been
25 struck with, since I've taken over research, is how,

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1 the worldwide use of NRC research results.

2 And particularly our computer codes. Our
3 major computer codes are used in countries around the
4 world. They are used by educational institutions.

5 Fire Protection Codes. I was at NIST two
6 weeks ago and what I was very much surprised to learn
7 is the codes that we have developed with them, we
8 worked with them for 25 years now, are not only used
9 in the nuclear industry, but used all over the world
10 in fire protection period.

11 Fire Marshall use the codes to determine
12 whether or not a building can be evacuated before
13 smoke builds up to the point where people can't find
14 their way out. So there is, and my, it gives me some
15 assurance that if there were errors in these products,
16 there's a lot of people - my concern is we publish new
17 Regs, they're great literature.

18 They don't get normal peer-reviewed like
19 the peer publications and scientific journals, and I'm
20 much more familiar with. Well, I'm familiar with,
21 when I published, I published in peer-review journals,
22 before I came to work for the Agency.

23 So anyway, but, it's important, your
24 review in my mind is extremely important because we
25 don't, it's part of a peer review of the work. I will

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1 talk in a few minutes about the work that we expect to
2 bring you over the next two years.

3 I know you periodically review our program
4 and there's a new Reg put out. I want to express
5 also, though, a philosophy that I've been promoting
6 since I took over the Office of Research.

7 We're careless with the term. It is not
8 the Office of Research, it's the Office of Nuclear
9 Regulatory Research, that the, our function is to
10 support the licensing and regulatory offices.

11 There's a lot of research that's nice to
12 do, but if it doesn't support the regulatory process,
13 it's not within our mission. We have limited
14 resources. We have very little, in fact almost no
15 anticipatory research going on anymore.

16 Almost everything is based upon a need of
17 an office. In the past we had far less than we said
18 we had, because a lot of stuff that the Commission
19 gave us to do was put in, just called, bookkeeping
20 called anticipatory, like preparation of the Agency's
21 Abnormal Occurrence Report, the Generic's Safety Issue
22 Program.

23 If we didn't have a user need it was
24 called anticipatory. Well, a lot of stuff, when I
25 looked at the numbers, they really weren't. But right

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1 now we have almost none.

2 We have a fixed budget, and so if we get
3 new work we have to shed something. We have to go
4 through an add-shed process which basically means
5 something that somebody has requested has to be
6 deferred.

7 I just need you to understand that because
8 sometimes you make recommendations that we ought to do
9 this, that or the other thing. Well, to take that on,
10 it means that something has to go away.

11 CHAIRPERSON WALLIS: Carl, you're talking
12 about budget and how you have to be careful how you
13 allocate it. I know that glancing at your slides that
14 the slide, the topic that gets the most presentation
15 here is this technology neutral framework.

16 DR. PAPERIELLO: Right.

17 CHAIRPERSON WALLIS: And I'm not aware that
18 has a large budget.

19 DR. PAPERIELLO: There's not what?

20 CHAIRPERSON WALLIS: I'm not aware that
21 that has a large budget, yet it is the topic that you
22 address the most in your slides.

23 DR. PAPERIELLO: I'm going to get, okay.
24 Okay, let's go to the next slide and the technology
25 neutral frame work.

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1 MEMBER APOSTOLAKIS: Well, let me ask
2 something, though, before we go there. The previous
3 slide, assessment of quality of selected NRC research
4 projects.

5 You said earlier that you didn't, you had
6 quantitative measures for timeliness and so on. The
7 ACRS was giving you quantitative measure for quality
8 too.

9 DR. PAPERIELLO: Right.

10 MEMBER APOSTOLAKIS: I mean you can
11 disagree if you want. I feel that, I mean what
12 happens to these quantitative? Okay, we send you a
13 report that says, you know, this particular project is
14 a five, whatever that means.

15 DR. PAPERIELLO: Right.

16 MEMBER APOSTOLAKIS: Then what? I mean are
17 there any consequences for that?

18 DR. PAPERIELLO: If there are weaknesses
19 we'll correct them. If it's okay, then it's good.

20 MEMBER APOSTOLAKIS: But it does not
21 contribute to the long-term use of the office as to
22 who is good and who is bad?

23 DR. PAPERIELLO: Well, no, it is. It is.
24 The question is how do I know, I need a measure on
25 whether or not the research has quality? Is it good

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1 research? I mean, as I said, there were, when I
2 first took over the office that was a concern.

3 I actually have less of a concern today
4 than I had when I took over the office. And because
5 I know realize that I have a whole lot of people
6 looking at this thing, even though the mechanisms
7 aren't the mechanism of peer-review literature where,
8 you know, whatever you publish gets sent out to a
9 group of peers to look at before the journal accepts
10 it.

11 I mean we put out a lot of gray literature
12 and that, it's of mixed quality, you know. We all
13 know the gray literature can have mixed quality.

14 MEMBER APOSTOLAKIS: Is the information we
15 send to you forwarded to other places or just stops
16 with you?

17 MR. REYES: How do you use the feedback
18 mechanism? When ACRS gives us feedback on quality,
19 he's asking how do we use it in our organization?

20 DR. PAPERIELLO: Well, my staff and I look
21 at it and if there are things that need to be fixed,
22 we fix them. And I know the Commission looks at it
23 too.

24 MR. REYES: If there's another office
25 involved, that will be shared with them?

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1 DR. PAPERIELLO: Right, we would do that,
2 yes.

3 MEMBER APOSTOLAKIS: Okay. That's fine.

4 DR. PAPERIELLO: Okay. But, you know zero
5 sometimes is a good answer. I mean if there's no
6 problems, that's worthwhile knowing.

7 MEMBER APOSTOLAKIS: Yes, because it raises
8 some very interesting discussions among ourselves
9 here, you know, as to what is quality? I mean, some
10 projects do not require any particular degree of
11 creativity, right?

12 And others do. And you have to take all
13 these things into account.

14 DR. PAPERIELLO: I understand that. No, I
15 understand that.

16 MEMBER APOSTOLAKIS: Okay, good, that's
17 fine, let's go on.

18 DR. PAPERIELLO: Slide 12. The technology
19 neutral framework and the research, the regulatory
20 structure.

21 The question is, for future technology,
22 particularly new reactors that are not like water
23 reactors, and Mr. Dyer touched on this in his
24 presentation.

25 What should the regulatory framework be

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1 like? In the past, my understanding is we wrote
2 exemptions and did it by exception, because we did
3 license high temperature gas-cooled reactors.

4 Right now we're primarily in Part One, the
5 guidelines and the criteria. How do you do it? Can
6 I have Slide 13?

7 We feel we have established a concept. We
8 established staff positions on various policy and
9 technical issues. The Commission has voted on some of
10 these.

11 There's other issues that need to be
12 worked on. There is a paper in front of the
13 Commission right now that addresses the issue of risk
14 guidelines for new reactors and how should those risk
15 guidelines be applied?

16 Should they be applied to the site?
17 Should they be applied to individual units at the
18 site? And, anyway, that is ongoing.

19 MEMBER APOSTOLAKIS: Well, this, you use
20 some words now that make me ask a question. You said
21 how they're applied? I mean that is something, you
22 know, this Committee reviews proposed regulatory
23 guides through making and so on.

24 DR. PAPERIELLO: Right.

25 MEMBER APOSTOLAKIS: We very rarely as I,

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1 as far as I know, actually see how these things are
2 actually implemented later. Because then it goes to
3 NRR and, you know, there is reviews and so on.

4 But my impression is from what I have seen
5 that we may have a gap between what some of these
6 documents say that the Licensees ought to be doing and
7 what they're actually doing.

8 I'll give you an example. Regulatory
9 Guide 1.174, which we all know is a landmark
10 Regulatory Guide. It's a beautiful discussion on
11 various kinds of uncertainties that people have to take
12 into account when they submit a request for a license
13 basis change.

14 And I'm really wondering whether anyone
15 has ever done that, and why the staff does not object
16 when they don't do it. I don't know. I mean I cannot
17 say that nobody has ever done it, but from what I have
18 seen, uncertainty analysis of various kinds,
19 especially, you know, when it involves models and so
20 on, I don't know to what extent the Licensees are
21 questioned when they submit the risk-informed
22 application.

23 DR. PAPERIELLO: I don't know -

24 MEMBER APOSTOLAKIS: I'm not sure that this
25 is something that we can resolve now, but I just

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1 wanted to bring that to your attention that we may
2 have a gap sometimes between the beautiful stuff we're
3 saying in some of the regulatory documents, I'm sure
4 the rules are not, are really obeyed, but the guides,
5 the regulatory guides, and what is actually being
6 done.

7 And that is very important to the
8 technology neutral framework, and this is one of the
9 many, many things that this Committee has been
10 debating among itself for the last three months, I
11 think it is now.

12 DR. PAPERIELLO: Umm hmm, right.

13 MEMBER APOSTOLAKIS: I preparation of the
14 letter. But you can't really separate it, coming to
15 this now, the requirements and the framework from the
16 ability and willingness of people to do a good job
17 meeting whatever requirements we tell them they have
18 to meet.

19 In other words, if we -

20 DR. PAPERIELLO: I'm going, I'm going to
21 back off, I'm going to give you a legal response. A
22 regulatory guide is not a requirement. A regulatory
23 guide is just that, a guide.

24 The Licensing Office, when it gets an
25 application in, legally, they have to make a decision

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1 on whether that's applicable. When they issue a
2 License Amendment or issue a license, they made a
3 judgement that what the Licensee submitted or the
4 Applicant submitted, was acceptable. And the guide is
5 only one way of doing it.

6 MEMBER APOSTOLAKIS: Yeah, I know.

7 DR. PAPERIELLO: I mean in a very precise
8 way, you know.

9 MR. DYER: Dr. Apostolakis, I think one of
10 the things, rather than get bogged down here, I'll
11 take it as an action item.

12 MEMBER APOSTOLAKIS: No, that's fine.

13 MR. DYER: Part of our reorganization,
14 we're consolidating our risk activities into one
15 organizational unit as opposed to being dispersed.
16 And I think possibly when we stand up that
17 organization we'll take that on for a question and get
18 back to you.

19 MEMBER APOSTOLAKIS: I fully agree with
20 you, and I'm fully aware of what Dr. Paperiello just
21 said. I mean I know that the regulatory guides are
22 not rules but I think it's something that maybe senior
23 management ought to investigate.

24 MR. DYER: That's a good feedback for us.

25 DR. PAPERIELLO: The, we've had public

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1 workshops. We did have a, we're initiating some work
2 on other parts. And our overall, we will be coming to
3 you in the, over the next six months on a number of
4 issues.

5 The, and we expect to have, our goal is to
6 have the draft framework for public review and comment
7 by next summer. At that point we should be
8 transitioning. And the lead for this effort will go
9 from research to NRR in the form, probably, we
10 haven't, I know Jim and I discussed this a number of
11 months ago, and it would an ANPR on the, for rule.

12 MEMBER APOSTOLAKIS: My impression is that
13 the industry is not too crazy about this. Is your
14 impression different?

15 DR. PAPERIELLO: Pardon?

16 MEMBER APOSTOLAKIS: The industry, is the
17 industry supporting this? I'm not sure that they are.

18 DR. PAPERIELLO: The industry supports it.
19 The industry, we had a public meeting on the 25th of
20 August. The industry supports it.

21 I'm not sure the industry supports it in
22 the sense that, how much effort, in other words, how
23 much resources they can devote to it. In other words,
24 there may be more of a burden on us to develop
25 proposals for rule than the industry developing

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1 proposals for a rule.

2 That's my, that's a sense, I don't have a
3 real statement to that effect, but that's my sense.

4 MR. REYES: But I think it's related to the
5 earlier comment we made, which is that in the short-
6 term horizon, the utilities, the customers of the
7 technology, are concentrating on live water reactor
8 technology is familiar for all of us. And so it
9 becomes a -

10 MEMBER APOSTOLAKIS: And they should
11 actually.

12 MR. REYES: - it becomes a business
13 decision in terms of where do you put your resources.
14 And if you're contemplating different technology for
15 that company it may be wise for them to do that, but
16 I think Carl is saying they're interested in it, but
17 when it comes down to putting the research, the money
18 to support it, then you don't see the same energy and
19 desire.

20 DR. PAPERIELLO: He said it, I was trying
21 to skirt it.

22 MEMBER APOSTOLAKIS: This framework really
23 would apply to Generation 4, I mean the way I see it.

24 DR. PAPERIELLO: That's exactly right.

25 MEMBER APOSTOLAKIS: Yeah, I mean

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1 everything else before that cannot wait for this.

2 DR. PAPERIELLO: That's right.

3 CHAIRPERSON WALLIS: I have a comment here.
4 My colleague, Mr. Apostolakis raised the question of
5 how does industry react to this? It seems to me
6 there's another player in this and that is the public.

7 And one of the great services you could do
8 to the public would be to give a clear, logical,
9 unequivocal and all sorts of adjectives I could add,
10 description of your basis for regulating these new
11 reactors.

12 DR. PAPERIELLO: Slide 14. The issues that
13 we expect to be discussing with the ACRS is the use of
14 probabilistic approach to establishing plant
15 licensing.

16 The identification, selection and
17 acceptance criteria for design basis events. The
18 safety classification of systems. The reliability
19 criteria to be used instead of single failure.

20 Defense-in-depth. How do you define
21 defense-in-depth? Model, how do you determine if you
22 have sufficient defense-in-depths? And changes to the
23 PRA Policy Statement to include defense-in-depth.

24 Containment performance standards. And
25 what the, what is a containment? Emergency

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1 preparedness considerations, PRA requirements, and the
2 integration of security.

3 The Commission is very interested in
4 having security integrated into the design. Next
5 slide, 15.

6 MEMBER APOSTOLAKIS: These are all easy
7 subjects.

8 DR. PAPERIELLO: They are not easy
9 subjects.

10 (Laughter.)

11 DR. PAPERIELLO: And, but, when you go
12 forward with a rulemaking you're going to have to deal
13 with them. And the other thing, even when you see
14 even new reactors, new light water reactors, one of
15 the things that has struck me is that the rest from
16 external events dominates.

17 The internal PRAs are well below the risk
18 from the external events. I see this being the same
19 thing for these new designs. And so there are things
20 that have to be considered.

21 MEMBER APOSTOLAKIS: Because it's awfully
22 expensive to bring down the seismic risk, as we heard
23 yesterday. Anyway, I'm sorry, go ahead.

24 DR. PAPERIELLO: Other major issues and
25 many of these I think you know about, is the

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1 instrumentation and control research plan and results.

2 I know you've put a lot of effort in
3 reviewing that. When I took over research, that was
4 a major initiative of mine. I wanted to get my hands
5 around what we were doing.

6 It was the largest area of research that
7 was classified as anticipatory. I now have a plan
8 that basically, the offices we support buy into and
9 has your review, and puts discipline in a process.

10 Because as I've looked into this issue, we
11 have to be careful where we spend our money. Billions
12 are probably being spent on other parts of the U.S.
13 economy because this is not unique. Many of the
14 issues are not unique to nuclear.

15 And we need to primarily focus, I mean,
16 one of the things that impressed me with the national
17 labs when I visit them, is everybody wants to work on
18 solving problems. This is one area where I'm more
19 interested in defining the problem.

20 In other words, what are the regulatory
21 requirements and not how do you fix them? Because I
22 know billions are being spent on fixing them. I'm
23 trying to come up with what are an objective set of
24 performance requirements for digital instrumentation
25 and control, because there's no, and there's also no

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1 tight dividing line between computers and the digital
2 instruments.

3 So it's a question of dedicated micro-
4 processors and flash memories and things like that
5 versus something that has a keyboard attached to it.

6 There's a lot of issue. Don't go into the
7 details but it's a question of discipline into the
8 program to support the licensing function, the
9 regulatory function of the Agency.

10 Which is primarily performance criteria
11 and not how do you do it, because there's billions
12 being spent out there.

13 MEMBER APOSTOLAKIS: I do have a comment on
14 that. Those billions do not necessarily solve
15 problems.

16 DR. PAPERIELLO: Understood.

17 MEMBER APOSTOLAKIS: And they have made, in
18 the literature there's a lot of stuff that has not
19 undergone the scrutiny that the nuclear people usually
20 compose on their own stuff.

21 DR. PAPERIELLO: I understand, but a few
22 million versus billions, I mean, it has to be wisely
23 in focus.

24 MEMBER APOSTOLAKIS: I don't disagree with
25 that.

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1 DR. PAPERIELLO: The purpose of the plan is
2 to focus it and get everybody to agree.

3 MEMBER APOSTOLAKIS: Yes. Absolutely, I'm
4 with you.

5 DR. PAPERIELLO: Yeah, okay. Regulatory
6 Guides. I have a list, I don't know exactly how many
7 you will see over the next two years. The numbers I'm
8 given are between 35 and 40.

9 There are about eight of them that deal
10 with radiation or Division 8 radiation protection, and
11 the remainder are in Division 1, and they're spread
12 over seismic issues, there's a number dealing with
13 seismic.

14 Some dealing with containment, some with
15 PRA. A number with instrumentation and control.
16 Generic issues are -

17 CHAIRPERSON WALLIS: Can I say something
18 about Reg Guides, Carl?

19 DR. PAPERIELLO: Pardon?

20 CHAIRPERSON WALLIS: Can I say something
21 about Reg Guides? There are two things that come to
22 mind that we've talked about over the years, since
23 I've been a member.

24 One is do the Reg Guides, some have been
25 there for an awful long time and then they're pulled

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1 out and used and we say, gee whiz, that doesn't
2 really, that's not really the best thing we could do
3 today.

4 The other thing is there's been at least
5 one Reg Guide which was just about to come out, it
6 seemed, when I joined the Committee eight years ago,
7 and it still hasn't appeared. It's still about to
8 come out, and I'm a bit mystified by that.

9 Why does it take so long? This is
10 something that would seem to be ready to issue eight
11 years ago.

12 DR. PAPERIELLO: A major problem in the
13 Office of Research, in terms of timeliness, and this
14 has been something I've spent the whole time I've,
15 it's been the concurrence process.

16 Of all offices, we need a wider range of
17 concurrences and approvals for what we do than most of
18 the other offices. Because, you know, we're
19 supporting.

20 Sometimes that doesn't go all that fast.
21 People get things in and they've got a stack of things
22 to do and it doesn't always, yeah, it's not an excuse,
23 it just facts that we have to - I've been working with
24 my staff to take a better into the planning time.

25 I'll look into the particular Reg Guide

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1 you raised and see where it's stuck. The generic
2 issues that we plan on, we expect to bring up are the
3 pipe effects, pipe break effects on control rod drive,
4 hydraulic lines, heavy loads and ECCS suction, and
5 cavitation due to gas binding, vapor locking and the
6 like.

7 We'll plan on discussing some of our code
8 work with you, thermo-hydraulics and severe accidents.
9 Again, both codes, which I note are widely used around
10 the world. Human reliability.

11 MEMBER DENNING: Carl, could I interject
12 here on the codes. As far as SPAR is concerned, and
13 I don't know if you plan to say anything about that,
14 George's Subcommittee.

15 We're going to be looking in greater
16 detail at SPAR, but I, one of the codes that we're,
17 I'm sorry, one of the projects we're looking at right
18 now for the quality does involve SPAR.

19 And it looks to me like SPAR really is an
20 important part of all of our risk-informing work. And
21 it's one that I'm really surprised at how far it's
22 gotten in the last couple of years.

23 Change in direction from earlier, but in
24 a quite positive way. But it does look like it
25 involves a major investment, still in the future.

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1 DR. PAPERIELLO: It is.

2 MEMBER DENNING: And so I was just kind of
3 curious as to how you see that and whether you see
4 that as an area of major future investment?

5 DR. PAPERIELLO: In my, in the '06 budget,
6 it's I believe a couple of million dollars. So it is
7 a major investment.

8 MR. REYES: It's a significant investment.

9 DR. PAPERIELLO: The fact - I was out at
10 Idaho last week and this was one of the topics we
11 discussed.

12 MEMBER APOSTOLAKIS: Yeah, this Committee,
13 as Dr. Denning pointed out, is planning to review the
14 details of SPAR. For some reason we haven't done it,
15 I don't know why, but given the importance of the SPAR
16 models, we plan to, and you'll probably see a few
17 letters from us starting next year on the SPAR models.

18 DR. PAPERIELLO: Okay.

19 MR. REYES: Good, we welcome that. It is
20 our plan to use that tool more and more.

21 MEMBER APOSTOLAKIS: Absolutely.

22 MR. REYES: So it has to be a good tool.

23 DR. PAPERIELLO: Human reliability
24 analysis. I'm going to throw something out on the
25 table, because it struck me when I was being briefed

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1 on this subject out at Idaho.

2 What's the difference between safety
3 culture and human reliability?

4 MEMBER APOSTOLAKIS: Safety culture is one
5 of the contributors of the performance shaping factors
6 of human performance.

7 DR. PAPERIELLO: I told the staff I want a
8 briefing on the work we're doing on safety culture to
9 understand, as a Scientist, what it means. And human
10 reliability seems to me something I can measure.

11 I'm speaking as a Scientist. Safety
12 culture, I have more difficult - I guess I just know
13 it when I see it and when Idaho described what they
14 were doing, I was trying to figure out how they the
15 two were related.

16 Because one looked almost like the other.
17 And when they looked at the example, but anyway,
18 that's just something I'm throwing out and I'm
19 churning in my own mind.

20 MEMBER APOSTOLAKIS: Is ATHEANA a big part
21 of your budget?

22 DR. PAPERIELLO: Pardon?

23 MEMBER APOSTOLAKIS: ATHEANA?

24 DR. PAPERIELLO: Yes. I don't know how
25 much, though, I don't know the, I can't tell you. I

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1 just know -

2 MEMBER APOSTOLAKIS: Oh, that's okay.

3 DR. PAPERIELLO: SPAR I know because I
4 looked at it last week because I was meeting with
5 Idaho on the subject.

6 The, and there will be human reliability
7 issues in new reactor design and operation, but that's
8 not until '07. Risk-informing Part 50. There will be
9 issues that come to you on that, PRA standards and Reg
10 Guide 1.200.

11 I'm going to throw out a point that you,
12 that ACRS has raised. I'll have to frankly say I
13 disagree. And that deals with iodine spiking. We
14 have it as a generic issue, because, from my
15 understanding, ACRS raised it.

16 And I happen to be a Health Physicist and
17 I'm well aware of iodine spiking. I would like to
18 know what is the safety benefit, the regulatory
19 benefit of understanding it mechanistically. I mean
20 it might be nice to know.

21 But I guess quantitatively, I'm just
22 concerned that it's going to cost a great deal of
23 resources to do, and is it cost benefit? I'm not
24 asking for an answer right now, but I raised the point
25 initially that there are times I disagree or the staff

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1 disagrees, and that's okay.

2 MEMBER APOSTOLAKIS: We never claim
3 infallibility.

4 MR. REYES: We agree on that one, we agree
5 on that one.

6 (Laughter.)

7 DR. PAPERIELLO: And I would argue, as a
8 Scientist, there's probably never closure, never real
9 closure. There is, though, practical closure, but
10 anyway.

11 MEMBER APOSTOLAKIS: But I have another
12 question which is related a bit to what Professor
13 Wallis said earlier. I'm really surprised that risk-
14 informing Part 50 is one of other major topics and
15 technology neutral framework had three slides of its
16 own.

17 I would expect this to be the major issue.
18 Isn't the risk-informing Part 50 really the big thing?
19 Am I missing something or you just happened to put it
20 there?

21 I would expect to see three or four slides
22 on that, and then the technology neutral framework to
23 be a bullet, one bullet among many. What am I missing
24 here?

25 DR. PAPERIELLO: Maybe it's what -

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1 MEMBER APOSTOLAKIS: 50.46, I mean that's
2 big deal, isn't it?

3 DR. PAPERIELLO: I know.

4 MEMBER APOSTOLAKIS: I'm sure you do.

5 DR. PAPERIELLO: Okay, noted, duly noted.

6 MEMBER APOSTOLAKIS: Okay. Or did you
7 think it was more challenging, the other thing?

8 DR. PAPERIELLO: Yeah. I will turn it over
9 to Roy Zimmerman.

10 (Laughter.)

11 MR. ZIMMERMAN: Good morning, I appreciate
12 the opportunity to be able to talk with the Committee
13 this morning. Initially I want to align with the
14 comments that Jim and Carl made with regard to the
15 value that we get from the Committee's review and the
16 enhancements to quality that come from those reviews.

17 I recognize that with our office there is
18 a smaller quantity of activities that come in your
19 direction, but those that do come, we clearly benefit
20 and for that we thank you.

21 One that we are engaged on and I wanted to
22 chat with you about a little bit, as we move forward
23 in a post-9/11 world to where emergency preparedness
24 rulemaking, one of the fundamentals, the building
25 blocks associated with that is the Bulletin 2005-2,

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1 that we issued this past July.

2 And you reviewed it shortly before its
3 issuance. And I view this, this Bulletin as being a
4 fair amount of a paradigm shift with regard to
5 emergency preparedness.

6 When you overlay security as an initiating
7 event, and it challenges some of the premises that in
8 in the past, we haven't really needed to focus on so
9 much.

10 As I know you know from the briefing, what
11 we're trying to do through this Bulletin and then
12 after public comment being considered and going
13 through the process, if it makes it's way through into
14 the rulemaking is more of a leaning forward, an
15 anticipatory recognition.

16 That if we were to wait for the
17 degradation of hardware systems or damage to the core,
18 we're basically losing time. And in this type of
19 scenario is the recognition that there are adversaries
20 that are purposely trying to cause that, that type of
21 damage.

22 So we tend to lean forward more in terms
23 of the unusual event classification and alerts in site
24 area, in terms of what security events get into those
25 classifications. And we recently had a public

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1 meeting, last week, for a day and a half.

2 And that was the other topics I'm going to
3 mention. It made for some well energized discussion,
4 because there's a lot of different stakeholder views
5 on that. But I think on this particular topic, I
6 think the various stakeholders recognize that some
7 additional anticipatory efforts are appropriate,
8 rather than waiting for potential degradation or signs
9 of losing barriers.

10 We also have, in this Bulletin, and had a
11 fair amount of discussion at the public meeting, about
12 our desire in the NRC to improve upon what we require,
13 which is a one-hour notification.

14 We recognize post-9/11 and the way a lot
15 of attacks have occurred. We're interested in getting
16 a phone call within 15 minutes that will be very
17 brief.

18 And that's a key for the industry and for
19 the state and locals that we get informed of it, that
20 they're confirming for us that there has been an
21 attack, and then we have to fight our instincts and
22 hang up the phone, because we know that they're very
23 busy and we have a lot of other people to call.

24 And that allows us to be able to get other
25 federal responders engaged and to blast dial our

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1 Licensees, recognizes the tactic of concurrent attacks
2 and wanting to be able to get others on their toes at
3 other facilities that we regulate.

4 And that discussion, again, we'll give you
5 more briefing when we talk to you in early October to
6 go over the results from it. That was a lively
7 discussion as well.

8 And, again, a lot of focus that if the NRC
9 gets an earlier call, does that mean I'm not going to
10 get mine, as a member of the state or local responder?
11 And that's a fair concern.

12 And it was good, good healthy discussion
13 on it. It also challenges aspects such as, how do you
14 keep the people that work at the site safe? If you
15 end up having an attack and you have people that are
16 firing weapons or you've had, you know, an aircraft
17 crash, you've got large fires.

18 The site accountability location is where
19 you would normally go. It may not be the right place
20 to go in evacuating the site, it may not be the right
21 thing to do, sheltering and hunkering down and trying
22 to stay out of harm's way.

23 So it's those types of issues that are in
24 this Bulletin. I know you're familiar with it. What
25 we're doing in we are gathering the responses. We

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1 have all the responses now. Then we're assimilating
2 and reviewing that input.

3 The actual public comment period doesn't
4 expire until the middle of October, I believe the
5 17th. So the timing for giving you a detailed
6 briefing in early October, after we've assimilated the
7 information, I think is very timely.

8 We'll benefit from your reactions. We'll
9 see what the comments are that we get from the public.
10 And, again, I look at this as a building block to
11 bringing additional work, coming your way, as we move
12 forward into a rulemaking scheme from this.

13 Let me move to the new reactors and -

14 CHAIRPERSON WALLIS: Can I say something
15 about -

16 MR. ZIMMERMAN: Please, please.

17 CHAIRPERSON WALLIS: - new reactors to
18 make a connection with what, I think, Carl said
19 earlier. That in these risk evaluations sometimes the
20 external events turn out to dominate.

21 Well, if we were clever enough, we could
22 design new reactors such that the internal events
23 were, came down as almost to zero.

24 And then the kind of thing you're talking
25 about would presumably assume much more importance,

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1 relatively, in design space. And if you can design
2 away all the internal events, then you have to worry
3 about the kind of thing you're talking about perhaps
4 more, in future reactors.

5 MR. ZIMMERMAN: It's interesting that I'm
6 confident that you're very familiar with what we refer
7 to as beat-by-beast from the February 25th Order.

8 And in watching the hurricane unfold and
9 the Waterford facility and the steps that they took,
10 some of it under a, I'll call it a security hat, if it
11 had an initiating event like that.

12 But that same equipment, those skid-
13 mounted diesels, those temporary air compressor that
14 they brought on. Regardless of your initiating event,
15 if the plant is about to have a bad day, and you know
16 it's going to have a bad day, having that staging
17 available is very useful.

18 And they made, they took advantage of that
19 staging and pre-thought out equipment, that just like
20 you're saying, it gives you that additional defense-
21 in-depth, so that you don't need to go further,
22 perhaps, with regard to getting to a stage of
23 sheltering or having to move people.

24 So we are very focused on that, and we
25 have looked at, we've looked at Waterford and we plan

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1 on looking at Waterford more closely, for what we can
2 learn from it.

3 And I see that factoring into something
4 again that may be a good topic for discussion down the
5 road. And then a bigger picture, the entire federal
6 government response to the hurricane which, as we all
7 know is getting a lot of attention right now, I think
8 as things die down a little bit, we need to take
9 advantage of what are those global learnings and how
10 do they apply to our business?

11 And how can we improve things here? So,
12 again, as I look forward, over the next year or so,
13 these would be the types of topics that I would see us
14 engaging on.

15 MEMBER APOSTOLAKIS: Well, one thing you
16 might learn about is that you can have a plan to
17 evacuate people, but what happens when you actually
18 try to do it?

19 MR. ZIMMERMAN: Right. And that puts the,
20 that puts the look back on sheltering, where
21 sheltering may be a better way of going.

22 We do have a contract with Sandia that's
23 looking at the merits of sheltering in certain
24 situations, vice evacuations. So, these are
25 decisions, as well all know, that have to be made very

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1 quickly, but you need to have the information so you
2 can make that informed decision.

3 And so we look forward to your input, the
4 Sandia Report, as we move forward. Again, I don't, I
5 will touch new reactors lightly beyond the dialogue
6 thus far, since Jim Dyer covered it very well.

7 We'll be focused on, again, learning from
8 the early site permit reviews and trying to factor
9 that learning in to enhance our process. And we
10 recognize that the rulemaking that's underway, we need
11 to be looking towards consistency between Part 50 and
12 Part 52, and trying to make things as clear as we can,
13 while trying to maintain a performance-based overview.

14 So we will be doing that. And with that,
15 I'll be glad to take questions.

16 MEMBER APOSTOLAKIS: I have a question.
17 Who decides how much of the information you generate
18 in this area that becomes public?

19 MR. ZIMMERMAN: In the area of emergency
20 preparedness or -

21 MEMBER APOSTOLAKIS: Well, the reactor
22 studies and all that.

23 MR. ZIMMERMAN: Well, we have criteria that
24 we use. Some of it was pre-existing and defined in
25 terms of confidential and safeguards information,

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1 that's known quite well.

2 We found, post-9/11, that there was other
3 sensitive information that previously, our prior mind
4 set, pre-9/11, had some of that information made
5 available because when we looked at it, we weren't
6 thinking like an adversary to the degree that we do
7 now.

8 And when we look at it and we see
9 blueprints and it gives dimensions and rebar sizes and
10 recognizing that -

11 MEMBER APOSTOLAKIS: I agree with that, but
12 it seems to me that you have to balance this against
13 what Professor Wallis mentioned earlier, public
14 confidence.

15 MR. ZIMMERMAN: Right.

16 MEMBER APOSTOLAKIS: And it seems to me
17 that there is a lot of useful information that has
18 been generated that the public is not aware of.

19 And, as a result, they are concerned. I
20 mean a lot of the public are not even aware that this
21 is going on, and there was a news item last week that
22 maybe the federal government is overdoing it
23 classifying everything after 9/11.

24 MR. ZIMMERMAN: Sure. Well, when we took
25 the -

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1 MEMBER APOSTOLAKIS: So, after all this, I
2 mean is it possible to revisit these issues?

3 MR. ZIMMERMAN: We've been revisiting.
4 It's a very good point and we have been revisiting it
5 and we're not done revisiting it.

6 One of the most pronounced ways that the
7 public saw it is when we took the ability to go to the
8 ADAMS documentation -

9 MEMBER APOSTOLAKIS: Yes.

10 MR. ZIMMERMAN: - and took that down.
11 That was, you know, -

12 MEMBER APOSTOLAKIS: It was pretty drastic.

13 MR. ZIMMERMAN: It was something that the
14 public quickly recognized they lost a lot of
15 information for, what we tried to make as short a time
16 as possible.

17 But we have modified our criteria from
18 information that could clearly be used by an
19 adversary, to information that could reasonably be of
20 use to an adversary.

21 And that actually tended to sweep more
22 information into it. So we continue to work to strive
23 for that balance. We pride ourselves in being a very
24 open Agency, and we talked about this at the Security
25 public meeting that we had right after the emergency

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1 preparedness one.

2 And we had a lot of stakeholders there and
3 a lot that are critical of us. But they indicated, to
4 my comment, that we are a very open Agency and they
5 agree.

6 Security is the exception to that. And
7 the Commission has tasked the staff to take a look at
8 that pendulum swing and to say has it swung too far,
9 and it's looking for the staff's position on whether
10 it can swing back and at what appropriate time.

11 There's one area where there's agreement
12 that if there's an existing vulnerability that is
13 known to exist, that would be beneficial for an
14 adversary.

15 That wouldn't be good to put that
16 information out there while that vulnerability is
17 there.

18 MEMBER APOSTOLAKIS: And obviously that's
19 not what I mean.

20 MR. ZIMMERMAN: I know, I know. So taking
21 that and planting that one, it leaves a lot wide open
22 for a continued review. And that's exactly what we're
23 in the process of doing.

24 MR. REYES: Yeah, where we are is that
25 after September 11, we had to take some relatively

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1 drastic moves and we're exactly at the point you're
2 talking about.

3 Which, we're now reflecting on that, and
4 saying perhaps the pendulum swung too much, we need to
5 come back a little bit closer to the middle. And the
6 Commission has instructed to that.

7 And I'm pretty sure we're going to move
8 from where we are.

9 MR. ZIMMERMAN: I think so, I believe so.

10 MR. REYES: It's obvious to me we're going
11 to move to a more reasonable position from the public
12 access.

13 MEMBER APOSTOLAKIS: Good, thank you.

14 MEMBER POWERS: You have, in the course of
15 this presentation, laid out a fairly aggressive
16 program that you see for yourself. In some cases
17 you've indicated you were hiring in order to address
18 that.

19 I know for a fact you're bringing a lot of
20 bright, young people on board to address your manpower
21 needs. That expansion in your manpower capabilities
22 is not one open to us.

23 And yet we see a lot of these things
24 coming to us. Do you have any advice in that regard?

25 Some of our obligations are, in fact,

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1 statutory in nature and so it's not open to a
2 prioritization.

3 MR. REYES: Yeah, I think, and as for the
4 reason I emphasize the '08 dilemma. There's a period
5 of time forthcoming, in front of both groups, starting
6 now and I don't see it subsiding until, right now with
7 information we have until 2010.

8 Then we are going to have maximize every
9 process we have and every planning tool we have,
10 because of the sheet workload. And I understand that
11 there are some things that are mandatory.

12 MEMBER POWERS: I have reviewed three early
13 site permits in the last three months. Each one of
14 them seems to be something over 2,400 pages combined.

15 They are written in a fashion such that,
16 especially, certainly the Licensee has a prescribed
17 format, and he follows it judiciously. It is not,
18 when conducive, to prompt review, it is conducive to
19 breaking up to be reviewed by groups in individual
20 specialties.

21 MR. ZIMMERMAN: Umm hmm.

22 MEMBER POWERS: On the other hand, the
23 staff seems to parallel that so that one does not find
24 quickly where the rough points and the difficulties
25 are. Now I have chosen early site permits. They are

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1 the least bad of the offenders. In fact, we have
2 written to you and explicitly acknowledged that they
3 write very, very nice safety evaluation reports in
4 general.

5 So I err in bringing them up first as my
6 example. But I have on the floor of my kitchen now,
7 by my own measure, well over a yard of documents that
8 seem to be fairly turgid and dense, to review and they
9 lack the summary that the early site permit people
10 have striven to provide.

11 And, quite frankly, many of these
12 documents that you're talking about, particularly the
13 license renewal and power uprate documents, will
14 gravitate toward the routine.

15 And then unless you wish us to become a
16 checkpoint, you might consider highlighting for us the
17 areas that you would like to focus.

18 MR. REYES: I think this is good feedback
19 for us because we definitely want to highlight those
20 because that's where you can help us the most. And to
21 the extent that our products can do that, we'll take
22 that as a -

23 MEMBER POWERS: Well, you might want to
24 look at the early site permits. I mean they've
25 definitely tried, and quite frankly, I think they've

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1 succeeded.

2 And maybe that would be helpful, so that
3 we don't become a checkpoint.

4 MR. REYES: That's good feedback, I
5 appreciate that.

6 CHAIRPERSON WALLIS: And going back to my
7 earlier point about are we adding value? If we have
8 a series of PWRs all over which look very similar,
9 license renewal applications all look about the same.

10 And then you improve your process so you
11 have to in GALL and so on, it's almost become a
12 checkoff with GALL, where are we going to add value?
13 We spent a lot of time, but are we really contributing
14 particularly to anything.

15 MEMBER DENNING: Since we're talking about
16 that, would like to ask a question and then make a
17 request. I'm Chairman of the Plant Operations
18 Subcommittee and we just went down to Browns Ferry to
19 look at the plant and talk to the Licensee about their
20 upcoming plans, which are, in my opinion, very
21 aggressive.

22 And also to look at the preparatory work
23 that they're doing to restart Unit 1. And on my tour
24 of the plant, I was reminded of the days when we were
25 building these plants. Browns Ferry Unit 1 is

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1 undergoing a major construction project, and that
2 plant, I think they're going to spend over two billion
3 dollars on it.

4 They're replacing lots of pipe, lots of
5 component, pieces of equipment, wiring and so forth,
6 and are getting ready for a restart.

7 And, of course, our involvement,
8 statutorily, will be in license renewal and extended
9 power uprates, both of which require knowledge and
10 experience in operating the plant.

11 And so now you've got a unit where you
12 don't have experience with the equipment because it's
13 new, a lot of it. You don't have experience with the
14 materials, necessarily, because it's new.

15 And so that makes those reviews
16 complicated. And we have to do those by statute. On
17 the other hand, your already going through a restart
18 process and a construction and inspection process.

19 And because of the complexity of the
20 issues, at that plant, I think that the ACRS must be
21 involved in the Restart Panel Report. I think we have
22 to review that.

23 I think we have to follow the commodities
24 that are being installed and the staff's methods of
25 inspection, the tools that they're using, in order to,

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1 for us to be able to do the other reviews.

2 And so I'd like to make that request right
3 now, which is that we be apprized of the restart
4 effort and the Restart Panel's Report prior to TVA
5 restarting that unit.

6 And I think that will help us fulfill our
7 responsibilities with regard to license renewal and
8 power uprate. But I do think putting all that in one
9 basket is a very complex undertaking for all of us.

10 MR. REYES: Yeah, I understand the
11 feedback. I do have to question or maybe challenge is
12 a better word, when you said before the unit starts
13 up.

14 Because license renewal is not linked to
15 the start up of the unit. So, I -

16 MEMBER SIEBER: Well, what I asked to do
17 was to review the report prior to the start up. Not
18 complete license renewal or uprate. All I'd want to
19 do is review the report.

20 MR. REYES: Yeah, and I'm understanding
21 that, but when you say prior to the start up of the
22 unit, that link is the one that I'm raising a question
23 with.

24 But we have no problem briefing you and
25 making you apprized of the start up report and all

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1 that.

2 MEMBER SIEBER: Right.

3 MR. REYES: I'm not ready to commit that
4 we'll do that all before they pull the rods, because
5 of the sequence.

6 MEMBER SIEBER: Well, right now you don't
7 have a regulatory handle to keep them shut down, as I
8 understand it.

9 MR. REYES: Correct.

10 MEMBER SIEBER: They shut down on their own
11 volition.

12 MR. REYES: Yes.

13 MEMBER SIEBER: And they hold a valid
14 license, if they satisfied their technical
15 specifications, and safety limits. They could start
16 up if they have informally agreed to ask permission.

17 MR. REYES: Yeah, correct.

18 MR. DYER: And we have to issue the tech
19 specs to align with their systems.

20 MEMBER SIEBER: That's right.

21 MR. REYES: Correct.

22 MR. DYER: I mean if they have a really
23 substantial licensing actions that are going to
24 require prior to restart.

25 MR. REYES: Right.

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1 MR. DYER: So there is a hook.

2 MR. REYES: Practically shouldn't be a
3 problem. They also committed to have a Commission
4 meeting where the Commission will review that. So
5 practically shouldn't be a problem.

6 I'm just not ready to tell you today that
7 prior to start of the unit. But we, we will be glad
8 to share with you the -

9 MEMBER SIEBER: Yeah, and I understand that
10 you may not be able to do, to make that kind of a
11 commitment, but we do have an interest and as close as
12 you could come to it, we would appreciate it.

13 MR. REYES: Yes. Yeah, we'll endeavor to
14 support that, there's no issue with that.

15 MEMBER SIEBER: Okay.

16 MEMBER BONACA: Since we're talking about
17 Browns Ferry, I mean you were talking about license
18 renewal and the hope and expectation that it becomes
19 much more routine in the application.

20 So that, you know, for us it's more, it's
21 easier to go through the reviews. Browns Ferry is an
22 example where this is not happening and we hope that
23 we don't get many, because, again, it's been lumped
24 together with, you know, Unit 1 is lumped together
25 with Unit 2 and 3.

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1 And so we're wrestling with this issue of
2 operating experience, applicable from Unit 2 and 3 to
3 Unit 1, when Unit 1 is up here and fully defined.

4 I mean this plant is not completed yet.
5 There are decisions being made on a daily basis of
6 what's being replaced, what's being refurbished, what
7 materials?

8 And then we also know that the plant will
9 never run up to 3,200 megawatt-thermal around, to
10 almost 4,000 is going to be the highest power on the
11 BWR, running there and using operating experience from
12 Unit 2 and 3.

13 So I'm saying that by accepting these
14 application at times, the way the Licensee has
15 proposed, I think we are not, in fact, easing our
16 burden.

17 I mean, it's, you know, we will be
18 reviewing that license renewal in the short-term and
19 it's challenging for the ACRS, I believe and think
20 about how operating experience from Unit 2 and 3 will,
21 in fact, fulfill the requirements of the rule.

22 MR. REYES: Yeah, we don't have any other
23 unit, we're just in the same situation as Browns
24 Ferry, so, it's kind of a unique situation and I agree
25 with you that the particular way the Licensee packaged

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1 this together, it's really been a tough review for all
2 parties.

3 I wish they would have separated them, I
4 think it would have made life a lot easier and going
5 in pieces.

6 MEMBER BONACA: We, you know, as ACRS, we
7 don't have a full staff to do the review. I mean
8 we're trying to cover and do our statutory
9 responsibility.

10 And it's, we're scratching our head on how
11 to meet the challenge.

12 MR. REYES: Yeah, I, all this is good
13 feedback for us, because we tried to convey that to
14 the Licensees. We just had a meeting yesterday about
15 a Licensee who wants to start in ESP, jump into CRL in
16 the middle of it and pick up a design who is not fully
17 certified.

18 And we tried to convey to them, this is a
19 business decision you're making, you need to
20 understand the degrees of freedom that you're
21 providing in this review because it does add to the
22 complexity and it does add potentially to a delay on
23 what we can do, both organizations.

24 MR. DYER: Yeah, we've, I think we've laid
25 out in working with ACRS and the Commission and for

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1 new reactors and license renewal, a very well-script,
2 you know, process that lends itself well to
3 standardization.

4 But, based on the market needs, and that,
5 and the industry has got a different script. And so
6 we find ourselves reacting to that and I know we've
7 had considerable discussions with TVA on Browns Ferry,
8 as well as some of other license renewals that are
9 combining power uprates and steam generator
10 replacements and a number of, you know, complicated
11 activities all at once.

12 MEMBER SIEBER: Right, that's right. Thank
13 you.

14 CHAIRPERSON WALLIS: Any other members have
15 points to make?

16 (No response.)

17 CHAIRPERSON WALLIS: Any of you gentlemen
18 wish to say anything more?

19 MR. REYES: I hope the briefing was useful.
20 I hope we covered the topics. I, personally, enjoyed
21 the exchange. I do welcome the feedback and we do get
22 your requests.

23 And perhaps we need to do it more
24 frequently than once a year, but I don't want to add
25 more work to my plate and yours, but I'll just leave

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1 that an open offer that if you find such an exchange
2 useful and all that, we'll be open to come here in
3 shorter notice to dialogue with you.

4 MR. DYER: I think I was reflecting on Dr.
5 Powers' comments, too. And one of the things that
6 would facilitate it is making sure we have good
7 communications.

8 And, you know, if there's a different
9 strategy for piece-meal review or working its way up
10 when you have a lighter schedule and your workload is,
11 it might be facilitated.

12 CHAIRPERSON WALLIS: Well, I wanted to
13 thank you. I think it has been very useful, helpful,
14 frank meeting. I was thinking about you coming here
15 from the other important work that you're doing and I
16 was wondering whether I should thank you for taking on
17 this extra task of coming here, or whether in fact
18 this would be relaxation for you.

19 (Laughter.)

20 CHAIRPERSON WALLIS: Compared with all the
21 other harder worth that you're doing somewhere else.
22 Anyway, thank you very much for coming here and it's
23 been a very, very good meeting.

24 (Whereupon, the proceedings in the above-
25 entitled matter were concluded at 11:46 a.m.)

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