

ORIGINAL

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: BRIEFING BY REACTOR VENDORS OWNERS
GROUPS --
PUBLIC MEETING

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING BY REACTOR VENDORS OWNERS GROUPS

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6 PUBLIC MEETING
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10 Nuclear Regulatory Commission
11 11555 Rockville Pike
12 Rockville, Maryland
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14 Tuesday, September 15, 1998
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17 The Commission met in open session, pursuant to
18 notice, at 2:04 p.m., the Honorable SHIRLEY A. JACKSON,
19 Chairman of the Commission, presiding.
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21 COMMISSIONERS PRESENT:

22 SHIRLEY A. JACKSON, Chairman

23 EDWARD MCGAFFIGAN, JR., Commissioner

24 NILS J. DIAZ, Commissioner
25

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1 STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

2 JOHN C. HOYLE, Secretary

3 LAWRENCE CHANDLER, Deputy General Counsel

4 BILL FOSTER, Babcock and Wilcox

5 Owners Group

6 THOMAS J. RAUSCH, Boiling Water Reactor

7 Owners Group

8 DAVID PILMER, Combustion Engineering

9 Owners Group

10 LOUIS F. LIBERATORI, JR., Westinghouse Owners

11 Group

12 L. JOSEPH CALLAN, NRC

13 BRIAN SHERON, NRC

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P R O C E E D I N G S

[2:04 p.m.]

CHAIRMAN JACKSON: Good afternoon.

I am pleased to welcome members of the NRC staff and the Nuclear Steam System Supply Owners Groups to brief the Commission on, first, the purpose and organization of the owners groups; secondly, the structure of interactions between the owners groups and the NRC staff; and third, the recent activities of the owners groups.

As part of the strategic assessment and re-baselining initiated by the Commission in 1995, direction setting and issues were identified that affect the basic nature of NRC activities and the means by which this work is accomplished.

The interaction between the NRC and owners groups are encompassed within what we call DSI-13, the role of industry.

As such, the Commission is supportive of and encourages interactions with the owners groups that can enhance the efficiency and effectiveness of the agency and licensees in our regulatory process in resolving safety issues and in ensuring public health and safety, and the Commission is interested in hearing today how these interactions are working, and I ask that we discuss not only accomplishments but also failures or points of stress from

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1 both the staff and the industry perspectives so that the
2 Commission can guide further improvements, if necessary, and
3 I understand that copies of the presentation material are
4 available at the entrances to the room, and so, unless my
5 colleagues have any opening comments they wish to make, Mr.
6 Callan, please proceed.

7 MR. CALLAN: Thank you, Chairman.

8 Good afternoon, Commissioners.

9 With me at the table from the NRC staff is Dr.
10 Brian Sheron. He's the Acting Associate Director for
11 Technical Review in the Office of Nuclear Reactor
12 Regulation.

13 Before Brian begins his presentation, I'm going to
14 ask him to also introduce the members from the owners
15 groups.

16 Brian?

17 MR. SHERON: Okay. Thank you.

18 With me is Lou Liberatori from the Westinghouse
19 owners, Dave Pilmer from the Combustion owners group, Tom
20 Rausch from the BWR owners group, and Bill Foster from the
21 Babcock and Wilcox owners group.

22 If I could have the first slide, please.

23 The reason that we thought it would be a good idea
24 to brief the Commission on our interactions with the owners
25 group is because they are, I think, very valuable and have

1 been very extensive recently, and I also think that, as I'll
2 get to in a moment with the next couple of slides, as you
3 said, with DSI-13, our interactions with the industry, I
4 think that the owners groups are playing even an
5 increasingly important role.

6 The owners groups, if I recall correctly, actually
7 came into existence, I believe, right around TMI as a way to
8 address a lot of the technical issues that arose from TMI,
9 and we have had interactions with the owners groups ever
10 since then.

11 They have proven, I think, to be a valuable
12 resource not only to the NRC but also to the utilities
13 themselves as a way to conserve resources and to address
14 common problems.

15 They also contribute -- I'm not going to read all
16 the slides here, but on operational experience and basically
17 in addressing technical problems that come up, and they do
18 directly interface with the NRC.

19 Next slide, please?

20 CHAIRMAN JACKSON: Can you describe the duties and
21 actions of the regulatory response group?

22 MR. SHERON: Basically, the regulatory response
23 groups are to provide a response to the NRC when important
24 safety issues arise where we need a very quick response from
25 the utilities on addressing specific issues.

1 CHAIRMAN JACKSON: And it's always worked that
2 way, that they have been quickly responsive?

3 MR. SHERON: For the most part, yes. We did a
4 little survey to find out -- there really hasn't been that
5 many times in the past -- in recent times when we've
6 activated them.

7 What I found is Westinghouse -- recently we called
8 them on the part-length control rod issue.

9 Babcock and Wilcox was activated twice, one on
10 seismic concerns for fuel assemblies and the other on boron
11 precipitation.

12 The BWR owners was engaged once with the Viton --
13 I think the pump seals, and the Combustion, we do not -- I'm
14 sorry.

15 MR. RAUSCH: Valve seals.

16 MR. SHERON: Valve seals, I'm sorry.

17 And Combustion, we -- according to our records, we
18 really haven't activated that RRG.

19 CHAIRMAN JACKSON: How does one activate? And the
20 membership is drawn from each of the owners groups, or how
21 does that work?

22 MR. SHERON: Basically, the office director --
23 once a decision is made, the office director would call the
24 chairman of the RRG and basically explain what the issue is
25 and --

1 CHAIRMAN JACKSON: No, what I'm saying -- so, it's
2 a standing group.

3 MR. SHERON: My understanding, yes.

4 CHAIRMAN JACKSON: It's a standing group?

5 MR. LIBERATORI: As far as I know.

6 MR. SHERON: That's correct.

7 CHAIRMAN JACKSON: Okay. I understand.

8 So, each owners group has a standing regulatory
9 response group.

10 MR. LIBERATORI: Yes.

11 MR. SHERON: Yes.

12 CHAIRMAN JACKSON: Okay. I understand.

13 MR. SHERON: Okay.

14 Second slide, please.

15 I'm sorry, third slide. No, you've got it right
16 there. I'm sorry.

17 With regard to the interactions with the owners
18 groups, NRR has assigned a project manager to serve as a
19 focal point for coordinating activities, setting up
20 meetings, and being basically our interface with each owners
21 group.

22 We meet with the owners group usually about twice
23 a year, depending.

24 Sometimes it may be once a year, but mostly it's
25 -- we meet twice a year with senior management. Usually Mr.

1 Collins will attend, I will attend, my division directors
2 will attend, and any other managers and staff that have
3 items on the agenda.

4 We use these meetings as an opportunity to discuss
5 not only technical issues and look for common approaches in
6 terms of resolution.

7 We use it as an opportunity to bring forward any
8 new or emerging issues that on our plate.

9 Likewise, the owners groups will come forward and
10 tell us any initiatives and where their -- what the status
11 is.

12 Issues that we discuss are some like I've just
13 discussed with the RRG, and we brought up with the RRG
14 others, on the year 2000, for example, status on that, and
15 any other technical issues, for example vessel head cracking
16 and so forth.

17 The project managers that interact -- that are
18 basically the coordinators with the owners group also serve
19 to coordinate with topical report reviews that we do, that
20 are submitted, and basically, overall, provide for more
21 efficient utilization, you know, the owners group, provide
22 for more efficient utilization of not only the staff
23 resources but also their own.

24 One example is the BWR VIP, which I'm sure you're
25 familiar with, and one of the things we did there is they

1 submitted a number of topical reports regarding the
2 inspection and repair of BWR internals, and we did generic
3 reviews of those topicals such that now, if a BWR does an
4 inspection during an outage, finds some degradation or
5 cracking, they have staff reviewed and approved methods to
6 deal with that, and it basically gets us out of the loop.
7 So, it's very proactive.

8 CHAIRMAN JACKSON: You mentioned topical reports,
9 and I understand that sometimes there is not a lead plant
10 identified for the implementation of or use of the topical
11 report, and so, the question becomes -- and I'm going to put
12 it to the staff but also any member -- chairman of any of
13 the owners groups, I'd appreciate an answer.

14 How does the NRC -- you know, we have declining
15 resources and etcetera, etcetera.

16 How does the NRC assign priority and resources to
17 these reviews, not knowing whether the topical report will
18 be utilized but at the same time trying to be responsive to
19 the owners groups and to prepare the NRC and the industry
20 for the future, because I've actually had criticism come to
21 us because people feel that not sufficient attention has
22 been given to a given topical report, but at the same time,
23 in trying to align resources, there isn't always a lead
24 plant or someone who really wants to make use of it.

25 So, I'm just happy to hear from anyone. Maybe

1 I'll just go down the line, as I used to do when I was a
2 professor. If nobody raises his hand, and Commissioner Diaz
3 knows this, then you just go down the line.

4 MR. LIBERATORI: I guess, from the Westinghouse
5 owners group perspective, most of our submittals will be
6 associated with if not followed up by a lead plant. There
7 are some that come through that we're still, you know,
8 trying to identify the specific lead plant, but the generic
9 review can be started, but more often than not, I would say
10 we submit our topicals with the lead plant.

11 We find that's most effective, because at the
12 utility end, working on a common issue with a common
13 submittal certainly helps our resources, and on the staff's
14 end, they can review a generic submittal.

15 That sets the ground rules for specific
16 implementation. It saves time at the back end on the
17 individual plant applications.

18 So, we've always looked at the topical review
19 process as a win-win situation.

20 MR. PILMER: For the Combustion Engineering Owners
21 Group, I think you have to go back a bit in history.

22 As Brian mentioned, there were a number of topical
23 reports produced in the post-TMI period. There were no lead
24 plants for these. These all got expeditious review because
25 of a keen interest on the part of the staff.

1 In more recent times, we don't expect topical
2 reports to be reviewed unless there is a lead plant
3 submitted.

4 So, we understand the reality of the situation.

5 CHAIRMAN JACKSON: Mr. Rausch?

6 MR. RAUSCH: We're kind of -- I think all the
7 owners groups are fairly similar.

8 I think, if you are talking about a CBLE type of
9 effort, then early in the process I would expect the staff
10 to ask if we had a lead plant identified, or we would just
11 offer one, but many of our efforts, as Dave Pilmer
12 mentioned, are on issues that are high on your priorities
13 list, as well, and it is not necessary, such as suction
14 strainers, to have a lead plant for a comprehensive
15 methodology, because everybody is going to be using it.

16 CHAIRMAN JACKSON: Mr. Foster.

17 MR. FOSTER: I guess the only thing I would add is
18 that, from the B&W owners group perspective, the way we
19 approach license renewal is we put together topical reports
20 that our members could use in their submittals, and we have
21 submitted those to the NRC, and we have followed up after
22 that with the submittal of Oconee for license renewal.

23 Now, for that application from Oconee to be
24 completed, there's still a couple of topical reports that
25 have not -- that have been submitted for a long time but

1 haven't been completed that will be necessary to be
2 completed prior to that application being able to get
3 approved.

4 CHAIRMAN JACKSON: Mr. Sheron, can you speak to
5 that?

6 MR. SHERON: Well, with regard to the priorities
7 that we assign, I think, you know, the way we try and
8 approach it is that we try to serve the most people that we
9 can.

10 So, if, for example, there's a topical that comes
11 in in which there, for example, are 10 plants which have
12 indicated a need for it, versus, say, one, we would
13 obviously give that one higher priority.

14 We like to have a lead plant, because it does
15 indicate that there is a definite use for it and it is not
16 just something that we would be doing that might sit on a
17 shelf for a while.

18 We want to make sure that the stuff we're doing is
19 the highest priority for the industry, as well as for
20 ourselves.

21 There are situations where we will review topicals
22 where there may not be a lead plant.

23 I think the BWR VIP was a good example where, if
24 the topical report has a real contribution to safety, we
25 will review that regardless of whether there is a lead plant

1 to make a finding so that now the BWR owners can use those
2 topicalals.

3 CHAIRMAN JACKSON: Has this been a point of
4 neuralgia between us and the owners groups in terms of how
5 we prioritize or the priority we assign to these?

6 MR. SHERON: Sometimes it has. I think that, for
7 those topicalals where we felt they may be more
8 cost-beneficial but not really have a real nexus to safety,
9 we would normally focus on those that had the nexus to
10 safety and then, once we finish those, we would work on the
11 others.

12 The other kind -- for example, on the barrel
13 baffle bolting issue, the owners group, I believe, does have
14 topicalals which they would like us to approve in order to go
15 forward with that.

16 We are just limited by the number of resources in
17 terms of those topicalals to meet their schedule, and there
18 was a scheduler problem that I think they wanted to have the
19 topicalals reviewed by this fall, and I think we couldn't
20 really get to it until -- finish them until next spring, and
21 so, we were looking for alternative ways in which they could
22 either go forward and deal with the technical issue, which
23 might -- you know, broken bolts that hold the core formers
24 on, without having a specific NRC review in hand.

25 I'm not sure where that is right now, but yes,

1 there are some areas where we have had difficulties in
2 reaching agreement on priority and schedule.

3 COMMISSIONER McGAFFIGAN: Is this an area where
4 you get complaints at RAIs and about lack of discipline in
5 our process.

6 I think the Chairman and I are both exploring --
7 we've heard general criticisms, and obviously, in many
8 areas, we've heard that RAIs are undisciplined -- I mean
9 sort of kicking the can down the road, and is that part of
10 the concern here, as well?

11 If you could do more topicalals more promptly with
12 fewer RAIs, maybe the same resources could get a few more
13 topicalals behind us.

14 CHAIRMAN JACKSON: Is the problem in the process
15 or is it in the prioritization and the schedule that goes
16 with it?

17 MR. SHERON: I guess, from my point of view, it's
18 just in the prioritization, in trying to find staff
19 available to work on it, rather than working on other -- you
20 know, either higher-priority topicalals or licensing --

21 CHAIRMAN JACKSON: So, it's not that it takes an
22 excessively long time once you get --

23 MR. SHERON: I won't deny that there may be some
24 that have taken excessively long, and I certainly can't deny
25 that we may have asked questions that perhaps went outside

1 the box a little bit, but I'm not aware that that's some
2 sort of an endemic problem, at least not in the topicals,
3 but I'd probably want to defer to the chairmen here to see
4 if --

5 COMMISSIONER McGAFFIGAN: If you're going to defer
6 to the chairmen, one last question. Did they give you any
7 help at times in sorting out -- if there's a bunch of
8 topicals in and you don't have enough resources, do they
9 help you, say well our group believes you should work on
10 this one first, even though it will disadvantage plant Y?

11 MR. SHERON: Yes. We've asked -- usually, at the
12 periodic meetings we have with the owners group, we have
13 periodically sat down and gone through the list of topical
14 reports and asked whether or not they were still -- you
15 know, what their priority was, were they still the top
16 priority, did they move down, were there others that were
17 higher, so that we could focus our resources on the ones
18 that they felt were most important to them.

19 MR. LIBERATORI: I was going to add to what Brian
20 said.

21 We maintain a running table. Every time we have
22 one of our management meetings with staff, we throw the
23 table up, and that table is prioritized from our
24 perspective, and again, our priority doesn't always match,
25 you know, staff's priority.

1 We do have different drivers, at least in some
2 levels, and we go over those priorities, and not only do we
3 talk about the ones that they have in hand, but we also give
4 them a heads-up on those topicals that we see coming, those
5 that will be submitted in the next three to six months or
6 so, so the staff has a heads-up as to what's coming, as
7 well.

8 So, we certainly do that at our periodic meetings.

9 CHAIRMAN JACKSON: Please.

10 MR. FOSTER: While my comment may not be directly
11 related to just topicals, your questions about requests for
12 additional information is a good one.

13 I think that you've gotten some feedback that
14 indicates that there is some room for improvement there, and
15 I would certainly think that there is.

16 MR. RAUSCH: I would like to second that, also. I
17 think there are plenty of occasions where the RAI process
18 for generic submittals went very smoothly, and I think it
19 depends a lot on the issue and the reviewers involved.

20 A couple of specific instances where I think there
21 could be improvement would be, for example, when there is
22 turnover in the reviewer or in the contractor and you see
23 the same RAI 18 months later.

24 CHAIRMAN JACKSON: I see. So, more continuity of
25 --

1 MR. RAUSCH: That's one type of thing.

2 CHAIRMAN JACKSON: -- of approach. Okay.

3 MR. FOSTER: Or just get it right the first time.
4 Let's get the questions on the table we need to address and
5 let's address them. It would save us a lot of time in going
6 through a number of cycles.

7 MR. RAUSCH: Another area concerning us is --

8 CHAIRMAN JACKSON: Although, in principle, some
9 things -- some questions don't -- you don't know till you
10 start reviewing.

11 MR. FOSTER: That's correct.

12 MR. RAUSCH: There's another issue that I think
13 NEI's been involved in, also, in that occasionally the RAIs
14 will include words about reconfirming all commitments from
15 previous SERs.

16 That's been very sporadic, but it's something we
17 want to be careful about, having to recreate a licensing
18 basis through the RAI process.

19 CHAIRMAN JACKSON: Do you have any comments,
20 Brian?

21 MR. SHERON: The best I could say is that, as you
22 know, in a tasking memo, one of the items that I'm
23 responsible for is looking into the RAI issue, and so, we're
24 aware of a lot of these concerns, as well as others, and
25 we've put in motion a number of initiatives to try and

1 improve the process and work better with the industry on the
2 whole review process from start to finish, from the time a
3 submittal comes in to the time an SER goes out, you know,
4 hopefully to minimize a lot of these problems, and obviously
5 we'll be talking to you more on that.

6 COMMISSIONER McGAFFIGAN: I might just follow up.
7 Some of the higher-priority generic submittals that we have
8 at the moment -- and that's the -- obviously the Babcock and
9 Wilcox topicals that are needed for Oconee, but there also
10 are, I think, on the order of 12 to 20 Westinghouse and GE
11 topicals in that will be used by Hatch, Turkey Point, and
12 presumably lots of other folks, since most of the plants are
13 GE and Westinghouse plants.

14 How are you going to get -- we're also under
15 pressure to -- you know, appropriate pressure to do better
16 after the first couple license renewal applications on the
17 585-day cycle that we have for staff review. So, getting
18 these topicals done before the submittals come in would
19 probably get -- you know, I don't know what -- I mean I'd be
20 here in 2001 when you're giving your direction, but you may
21 be down to a 345-day period for -- from 585, or God knows
22 what.

23 We won't be at Corbin McNeil's three months or six
24 months, because NEPA won't allow it, but we'll be at -- be
25 under constant pressure to shorten the renewal -- the review

1 time, because we presumably will be learning.

2 But if the topicalals haven't been looked at ahead
3 of time, you may not be able to improve the timing.

4 So, how do you see Westinghouse and GE topicalals
5 getting reviewed this coming year, before we get the Hatch
6 and Turkey Point applications?

7 MR. SHERON: We've put additional resources. Most
8 of these are in the Division of Engineering. That's the
9 principle division that has most of the license renewal
10 work.

11 They are -- they have looked at their resources in
12 terms of what is needed in order to meet these schedules.

13 Two things that will help the situation -- one is
14 we've finished the AP600, and that will free up a number of
15 reviewers which we will now be able to move onto these
16 topicalals which we did not have before, and the other is we
17 do have some generic issues that are going to be finishing
18 up.

19 For example, the 8A46, the seismic, we've pretty
20 much finished that now, and hopefully, the Generic Letter
21 89-10, the pumps -- I'm sorry, the valves program -- is
22 going to finish up, and so, we've got some reviewers that
23 will be freed up and be able to move over onto these
24 topicalals.

25 With the B&W topicalals, I just checked on the

1 status of those about a week ago, and my understanding is
2 they are imminent in terms of going out, and the other thing
3 is that, when topicalals do come in -- for example, I believe
4 the BWR VIP topicalals have appendices that address the
5 license renewal aspects of that technical issue, and we put
6 higher priority on them when they have the license renewal
7 appendix on them.

8 CHAIRMAN JACKSON: How well supported by the
9 plants who have things at stake vis a vis license renewal --
10 how much support are they providing to your topical review
11 process if, in fact, the given topical report has
12 implications for them with license renewal?

13 MR. SHERON: I personally don't know, because I
14 think, when we interact in terms of the review, we interact
15 with the owners group. Okay. So, the extent -- to the
16 extent that they step forward within the owners group to
17 answer questions, perhaps the chairmen might answer that
18 better than I could.

19 MR. LIBERATORI: Yes. License renewal is one of
20 those cases where you have a chicken-and-egg situation.

21 You'd like to have a lead plant to maybe give a
22 higher priority to the review, but on the other hand, some
23 of these are very basic generic issues that have to be
24 resolved for the long term, and a lot of the members felt
25 that some of these generic topicalals needed to be reviewed to

1 remove some of the regulatory uncertainty from the process
2 before they were willing to commit.

3 So, this is a little bit of a complicated issue at
4 the most because of the broad-based nature of the
5 information that we're dealing with here, but we have 15
6 reports we've developed, though, for the last five years
7 we've been working on license renewal, five of which we've
8 submitted to staff for review.

9 CHAIRMAN JACKSON: Do you do a risk ranking? I
10 mean do you have a risk-informed prioritization scheme?

11 MR. SHERON: Of the topicals?

12 CHAIRMAN JACKSON: Yes. I mean assuming they are
13 ones that don't necessarily have a specific licensee who's
14 interested.

15 MR. SHERON: I wouldn't call it a risk ranking,
16 but we use a prioritization scheme, as I said, where we will
17 ask the owners groups what they believe is most important to
18 them.

19 Then, as I said, we will also look and say -- you
20 know, we will try and review those which we think have the
21 most safety significance as well as the most potential
22 users.

23 So, it's not a very, you know, pure, you know,
24 risk -- you know, it's risk-informed if you want to say it.
25 We take a lot of things into consideration.

1 CHAIRMAN JACKSON: Okay.

2 MR. SHERON: Could I have slide four, please?

3 One of the areas that we are focusing on right
4 now, as I just said before, is DSI-13, the role of the
5 industry, which basically involves addressing how we will
6 utilize more efficiently and effectively both industry
7 consensus standards as well as industry initiatives to
8 address regulatory issues.

9 We just had a stakeholder meeting September 1st in
10 Chicago to address the issues on the DSI-13, including codes
11 and standards, as well as industry initiatives and reporting
12 requirements, and I believe there will be Commission papers
13 coming up with the results of that stakeholder meeting,
14 along with the recommendations, over the next couple of
15 months.

16 But I think, in the context of DSI-13, we have
17 been looking -- actually, we kind of started this some time
18 ago, where we have been looking to the owners groups to
19 proactively address issues and thereby avoid the staff
20 having to take certain regulatory actions, particularly
21 generic letters, and so, I would say that, you know, we have
22 a lot of good success stories there.

23 I know the one I always talk about is the BWR VIP,
24 where we issued a generic letter when we first noticed core
25 shroud cracking.

1 The generic letter focused strictly on the core
2 shrouds, but then the next obvious questions were what about
3 the rest of the internals, and rather than sit there and
4 crank out more generic letters, you know, what are going to
5 do about this or that, we engaged the owners group, they set
6 up the vessel internals program, and they said we will
7 proactively address how we will deal with other internals
8 from the standpoint of inspection, you know, the repair,
9 etcetera, on that, and the staff basically went into a
10 monitoring mode.

11 CHAIRMAN JACKSON: How do you know that all
12 licensees have committed to and implemented the given
13 industry initiative?

14 MR. SHERON: That's been a question we've been --
15 we've actually put to most of the owners groups as one of
16 the remaining issues that we still need to deal with under
17 DSI-13, and that is, for voluntary initiatives, how do we
18 know that, you know, six months or six years later, a
19 utility won't, you know, back out of a commitment?

20 We're looking at different ways to do it. Some
21 is, if committing to an action actually affects the design,
22 then it should be reflected in the FSER, which then involves
23 a commitment.

24 The other is, is that a lot of times -- for
25 example, we agreed with the BWR VIP reports that they --

1 that based -- that our review of those reports basically
2 constituted an acceptable means of dealing with the
3 internals from the standpoint of doing inspections, and
4 therefore, provided a licensee went in and did an inspection
5 and therefore did a repair in accordance with those
6 topical, we would be satisfied, and that only if they
7 decided to deviate from the topical should they come in and
8 inform the staff.

9 We still haven't worked out all the details on
10 every case, okay?

11 But I think we're making some headway so that,
12 basically, for these voluntary initiatives, we will have
13 some way of having assurance that the utilities will either,
14 you know, continue to abide by the commitments or inform the
15 staff.

16 Other --

17 CHAIRMAN JACKSON: What happens if you have
18 licensees that don't implement the initiative?

19 MR. SHERON: We would have to decide what to do on
20 a plant-specific basis.

21 For example, you know, if a group of licensees
22 decided not to abide by an owners group solution, the burden
23 would be on us to go out and either do -- either issue
24 plant-specific 50.54(f) letters asking how they were going
25 to address the issue and then look at their responses and

1 determine their acceptability on a plant-specific basis.

2 CHAIRMAN JACKSON: But at this point, you don't
3 have necessarily a complete scheme of determining the degree
4 of implementation. Is that what you're telling me?

5 MR. SHERON: For the most part, we have been
6 asking utilities, the owners groups, to provide us with some
7 indication of, you know, how many of their owners have
8 agreed to implement certain actions, either by referencing
9 or sending in a letter or hopefully by documenting it in
10 some sort of a design basis document.

11 You know, a lot of times, though, the information
12 in the topical reports are not really part of the design; it
13 basically is just a method.

14 And so, as I said, you know, we're still not
15 100-percent there in terms of saying that we have
16 100-percent assurance that every licensee will abide by
17 something and not, you know, change their commitment.

18 COMMISSIONER DIAZ: Would that be a good idea to
19 have the owners groups, you know, discuss with the
20 responsible party in the NRC what level of, say, voluntary
21 commitment is being abided by or how many plants have done
22 it?

23 Does that get into, you know, conflicts of
24 interest, or how does that work?

25 MR. LIBERATORI: Well, for the Westinghouse owners

1 group, on those issues that warrant that kind of attention,
2 we typically try to address those at our semi-annual
3 meeting.

4 There are issues where we've submitted letters to
5 staff, where they've asked for what's the status of -- for
6 example, the burnable poison fuel issue on the Westinghouse
7 plants -- we submitted a letter identify plant by plant
8 who's addressed it, who still has it in, what the dates
9 were.

10 So, I've seen it done both ways, in writing and
11 through discussion.

12 CHAIRMAN JACKSON: It strikes me that this is the
13 kind of situation where it's potentially easy to lose your
14 way.

15 If you start out from the point of view that there
16 is an issue that the agency feels it normally would issue a
17 generic communication for, which may have embodied in it --
18 and there are various types of generic communications --
19 certain requirements, but there's an industry voluntary
20 initiative in lieu of that, then it strikes me that, at the
21 first instance, the staff has to decide, the NRC has to
22 decide, is the voluntary initiative going to cover the
23 waterfront from the point of view of the regulator, and if
24 so, to what extent? Does it have to be 100 percent or not?
25 And then one has to know, is, in fact, the waterfront

1 covered. You have to have that information. And then, if
2 not, then what are you going to do about it?

3 And I haven't totally heard a totally coherent
4 scheme in terms of those kinds of decision points that would
5 work across the board.

6 COMMISSIONER McGAFFIGAN: I might just add that I
7 think it's further complicated by backfit considerations,
8 which is another issue that we hear a lot about.

9 I think generic communications aren't supposed to
10 -- aren't subject to backfit because they're not -- they
11 don't impose requirements, they're information requests or
12 whatever, and I'm trying to remember what the lawyers write
13 for us.

14 MR. CHANDLER: As a general matter, that's true.

15 COMMISSIONER McGAFFIGAN: Right.

16 So, if it's a true requirement, some sort of
17 backfit analysis is required, and many of these items may
18 not pass the substantial increase test in 51.09.

19 So, there's -- I think there are backfit issues
20 that lurk in trying to find how this all works, as well,
21 that I don't claim to understand. I just know that they're
22 probably there somewhere.

23 CHAIRMAN JACKSON: Does OGC have an opinion on the
24 -- a view on the issue of relying upon industry actions
25 instead of NRC issuing some kind of generic communication?

1 MR. CHANDLER: In terms -- they're essentially
2 comparable to generic communications in terms of whether
3 they create binding obligations on the parts of licensees.

4 Generic communications, as we've discussed on
5 other occasions, don't create a binding obligation. They
6 may present an acceptable -- a means acceptable to the staff
7 for satisfying a particular requirement, much in the same
8 way as an industry commitment might or a licensee commitment
9 might, might do the same.

10 If more formal binding requirements are necessary,
11 other steps need to be taken.

12 COMMISSIONER DIAZ: Is there a way of -- I mean do
13 we track this somehow? I mean that's the bottom line. Do
14 we track what is happening? I think that's what we -- you
15 know, if we have that information, then we can --

16 MR. SHERON: I think now we are starting, you
17 know, as part of the DSI-13, to actually, you know, come up
18 with a way to track these commitments, because again, you
19 know, we are not dealing with where we have formal
20 submittals in response to a specific generic letter.

21 I would add on generic letters that generic
22 letters do not impose any backfits. They are -- I think
23 every generic letter is a 50.54(f) request for information.

24 I think the concern that the industry has and has
25 always had is the way they're worded, okay? Because a lot

1 of times we question whether or not a utility remains in
2 compliance because of some new information, and when we
3 write the generic letter out, we ask them to tell us, why do
4 you believe you are still in compliance given this, this,
5 and this, and that is interpreted sort of as, you know, I
6 better fix something or they're going to tell me I'm not in
7 compliance.

8 That's really -- you know, the letter does not
9 impose anything, but it does put a burden on the licensee to
10 justify why they still believe they're in compliance based
11 on this new information, and that seems to be where the
12 point of contention is many times.

13 MR. CALLAN: There is another aspect to the
14 licensees' frustration, I think, about generic
15 communications, and that is, to the extent that they are
16 followed up on through the inspection process, oftentimes,
17 too, that inspection process -- there is utility or licensee
18 concern that additional requirements are backfit on them due
19 to inspector expectations.

20 COMMISSIONER MCGAFFIGAN: And I might, in a less
21 than uniform way.

22 MR. CALLAN: Less than uniform way.

23 CHAIRMAN JACKSON: That's why the issue of the
24 coherent scheme and what Commissioner Diaz raised about
25 being able to track what's going on. I mean you can

1 re-normalize the process.

2 MR. CHANDLER: The other possibility is they have
3 -- they reflect the changed position which also may have
4 some backfit implications. That's what I was referring to
5 before.

6 CHAIRMAN JACKSON: Right.

7 MR. SHERON: But I think, on a positive note, we
8 have -- I think, with the BWR VIP, we probably avoided two
9 additional generic letters as a minimum.

10 We never sent one out on the barrel baffle bolting
11 with the Westinghouse owners, because they took a proactive
12 stand on that.

13 We have, right now, another where we have engaged
14 NEI to look at a concern we had with regard to the Oconee
15 HPI line crack at the weld and the fact that the inspection
16 techniques were missing -- I won't say missing, but there
17 appeared to be a discrepancy in the ASME code, and rather
18 than, again, issue out a generic letter, we asked NEI to
19 engage the industry to say, you know, here's the issue,
20 okay? It's not something of immediate safety concern and
21 the like, but nonetheless, you know, if you would like to
22 proactively deal with this, we'll, you know -- you know,
23 we'll be willing to sit back and, you know, see what you
24 come up with on that.

25 So, it is working, and I think -- I checked, and I

1 think the staff had come -- I don't know if I brought it
2 with me.

3 A lot of people probably don't understand that, in
4 total, we have canceled more generic letters this year than
5 we issued. So, we are changing our whole approach on
6 generic letters.

7 CHAIRMAN JACKSON: Now, on the other hand -- I'm
8 already jumping ahead to your recent successes, slide five.
9 Let me say this.

10 You issued a generic letter in July of this year
11 on, you know, protective coating deficiencies and foreign
12 material in containment, and from a big-picture perspective,
13 it seems that we've been dealing with and discussing ECCS
14 strainers and foreign material in containment for more than
15 five years, and so, what's the problem?

16 Why has it not come to resolution? I mean is it
17 an important issue or is it not?

18 MR. SHERON: It's an important issue from design
19 base. From a risk perspective, I think we're taking a hard
20 look at that.

21 For example, on the -- the whole coating issue
22 came about because it was brought to our attention from
23 outside the agency that there were coatings inside
24 containment that were, in theory, qualified, okay, that were
25 actually flaking off, and so, it represented a source of

1 debris which hadn't been considered in any of the
2 calculations.

3 In dealing with it, the generic letter, in
4 essence, asked the industry to tell us what is your program
5 for dealing with the coatings.

6 CHAIRMAN JACKSON: Is this an issue that's being
7 dealt with by the owners groups?

8 MR. SHERON: The owners groups, I believe --
9 Tom, you can probably speak to what you're doing.

10 MR. RAUSCH: Yes, they're all engaged to some
11 degree.

12 The BWRs -- it's inseparable from the suction
13 strainer resolution issue. So, we were several years ahead
14 on that issue.

15 The BWRs are quite different from the PWRs, both
16 from a design and risk standpoint on the issue.

17 So, we saw that we really needed to link
18 resolution of coatings to the suction strainer issue, and
19 we're well in the process of doing that, with the same
20 personnel on the staff that we've been interacting with all
21 along.

22 CHAIRMAN JACKSON: So, when do you expect to come
23 to some -- at least iterate to a stable point?

24 MR. SHERON: Well, the industry has submitted
25 information for -- I mean one thing you're looking at is to

1 get credit for leak before break, because if you don't have
2 the jet impingement loads hitting the containment and
3 basically flaking off the paint, then you don't have the
4 debris source.

5 So, that's one thing we're looking at, is the
6 ability to give credit for leak before break. That's still
7 under consideration by the staff. As a matter of fact, it
8 went to our risk-informed panel, I think, last week. But
9 that may be one approach to dealing with it.

10 But basically we've kind of characterized it as
11 that, you know, the industry really needs to come back and
12 tell us what is their opinion on this.

13 If their FSAR says that they have qualified
14 coatings and the coatings are falling off, then, you know, I
15 think they either need to tell us that -- they need to
16 change their FSAR and say it's not a qualified coating and
17 here's why it's okay or you go in and you remove it and put
18 a qualified coating on.

19 So, we've kind of said that this is really, you
20 know, not our problem that we dreamed up. That was
21 something that just -- you know, it's an aging problem that
22 needs to be dealt with.

23 CHAIRMAN JACKSON: Okay.

24 MR. SHERON: Okay. The next slide, please, number
25 five.

1 This is just a list of some of the, I would call,
2 recent successes that we've had.

3 One area, I think, of note was the vendor audits,
4 the last item there, where we had the issue with the Siemens
5 inspection on the ECCS and found difficulties, and the
6 question arose of, gee, aren't licensees supposed to audit
7 their vendors, and what we were concerned with was that the
8 audits were probably more of a paper audit than an in-depth
9 technical audit, and we raised -- rather than go out, again,
10 with a generic communication of sorts to the industry, we
11 engaged them to address the issue, and my understanding is
12 they've created NUPEC, which is -- in essence, what they're
13 doing is getting technical experts from various utilities
14 that have the expertise and going out and doing in-depth
15 technical audits of the vendors, okay?

16 So, you're not doing the paper audits; you're
17 doing these in-depth technical ones that look at
18 correlations, look at validation, and so forth.

19 So, again, I think that was a real success in the
20 industry, you know, acknowledged what the issue was and
21 picked up the ball and ran with it.

22 In summary -- last slide, please.

23 COMMISSIONER MCGAFFIGAN: Could I just ask one
24 question?

25 MR. SHERON: Sure.

1 COMMISSIONER McGAFFIGAN: The definition of the
2 word "recent" or the adjective "recent" -- some of these
3 look like they're fairly old, in the early '90s or maybe
4 even late '80s type things. Is that fair to say?

5 MR. SHERON: I think most of these were probably
6 within the last three or four years.

7 COMMISSIONER McGAFFIGAN: Standard tech specs?
8 The emergency operating procedures?

9 MR. SHERON: Well, the emergency operating
10 procedures have been an ongoing -- you know, I think that
11 we're reaching resolution on those now because the industry,
12 you know -- but they did take the initiative to go forward
13 and develop the emergency operating procedures.

14 Yes, there's probably a mixed bag here. Some may
15 have actually originated back in the early '90s, but I think
16 --

17 CHAIRMAN JACKSON: So, "recent" means recently
18 coming to some state of fruition.

19 MR. SHERON: Yes, although some of them actually
20 were identified and resolved recently. As I said, the
21 vendor audits, the barrel baffle bolting, the BWR internals
22 projects, suction strainer -- these were all, I think,
23 within the past three or four years.

24 CHAIRMAN JACKSON: Okay.

25 COMMISSIONER DIAZ: Let's see. One issue here --

1 you know, we have a passing interest in risk information.
2 That, you know, keeps occurring.

3 How have you been working in this area with the
4 owners group? I know that the Westinghouse owners group and
5 EPRI have their own ISIs. Do you consider that, you know, a
6 success? Is that matching up with what the agency is trying
7 to do in some areas?

8 How do you see the, quote, "risk-informed" efforts
9 by the owner groups or if there's, you know, significant
10 coupling with what the agency is doing, at least?

11 MR. SHERON: Well, I think that the risk-informed
12 efforts that the owners groups are participating in, you
13 know, basically are aligned with, you know, where the staff
14 -- you know, what the staff was working on, in areas, for
15 example, of PRA certification.

16 The risk-informed ISI and IST -- those efforts,
17 you know, as they relate to the various owners group -- as
18 you know, one of the ISI methods was a Westinghouse method
19 and so forth.

20 COMMISSIONER DIAZ: Is that a success? I mean is
21 it something that happened and is finished?

22 MR. SHERON: It's not quite finished. I'm not
23 going to call it a complete success. It was a long review.
24 I think there was problems probably on both sides that I
25 could point to, so I'm not going to point fingers. You

1 know, I don't want to point blame.

2 We're trying to bring it to closure now. We do
3 have a schedule for completing the IST topical and the
4 pilot plants.

5 We have a meeting set up with NEI, I believe, at
6 the end of this month to address the concerns that were
7 expressed in a recent letter that was addressed to me.

8 There are two issues with regard to implementing
9 ISI.

10 One is the question of the goodness of a PRA. To
11 what extent does the staff have to understand and, you know,
12 assure itself that the PRA being used to develop the
13 risk-informed ISI program -- you know, is it adequate for
14 that?

15 The second is that the topical reports are
16 generic, and we have to have some assurance that they're
17 applicable to the specific plants that want to use them.

18 And so, these are the two key items that we have
19 on the agenda with our meeting with NEI to see if we can
20 bring those two to resolution, and hopefully, when that's
21 done, we will be able to very quickly process any license
22 amendments that propose to use the risk-informed ISI as an
23 alternative to the current ASME code.

24 COMMISSIONER DIAZ: And what do you mean by close
25 to resolution? Six months?

1 MR. SHERON: I'm hoping by the beginning of the
2 calendar year.

3 COMMISSIONER DIAZ: Okay.

4 MR. SHERON: Slide six, just to summarize, I
5 think, overall, the owners groups have been very proactive
6 in addressing issues, and I think they're playing an
7 increasingly more important role, in particular with regard
8 to DSI-13 and its implementation.

9 I think the successes that we've talked about
10 basically have saved staff resources as well as, I think,
11 come up with -- in my mind, it comes up with a better
12 solution.

13 I've always said that the utilities know their
14 plants the best, and therefore, I think they're in the best
15 position to really define what is the right solution, and I
16 would just close by saying we certainly encourage the owners
17 group to continue working in a proactive way.

18 CHAIRMAN JACKSON: Okay.

19 MR. SHERON: Thank you.

20 CHAIRMAN JACKSON: Thank you.

21 Who is going to lead off in speaking for the
22 owners groups?

23 MR. FOSTER: I am, Chairman.

24 My name is Bill Foster. I work for Duke Energy
25 Corporation at Oconee Nuclear Station, and I'm the chairman

1 of the steering committee of the B&W owners group.

2 I have two parts I want to play here. One is some
3 general comments about all the owners groups and then some
4 specifics about the B&W owners group.

5 Slide one, please? Next slide, please.

6 All of the domestic operating plants are members
7 of one or more owners groups. There is significant
8 international participation in our owners groups, and a very
9 key element of owners groups is our NSSS vendor who
10 participates within each of the owners groups.

11 CHAIRMAN JACKSON: Do your international partners
12 actually work on the resolution of the issues, and do they
13 implement the recommendations?

14 MR. FOSTER: I'll let one of the -- some of the
15 other guys -- the B&W owners group has very small
16 participation internationally.

17 CHAIRMAN JACKSON: Westinghouse is a good
18 candidate.

19 MR. LIBERATORI: We have eight international
20 members right now of the Westinghouse owners group, and we
21 see varying levels of participation, some very active,
22 attend all the meetings, even send members to some of our
23 subcommittee meetings. Others are in it just for the
24 information. So, it runs the whole gamut as far as we've
25 seen.

1 CHAIRMAN JACKSON: What about CE?

2 MR. PILMER: CE has one international member, the
3 Korean electric power, three operating units. They express
4 a high degree of interest in the products of the owners
5 group, but as far as what they do with them, I have no
6 direct information on that.

7 MR. RAUSCH: We have very large international
8 participation, very similar to Westinghouse in terms of --
9 depending on the issue that we're actively engaged.

10 We have actually two European efforts. A special
11 conference is held on risk issues, another one on valve
12 issues, annually, and we're in the process of encouraging
13 more international participation on the issues directly. We
14 have a new effort, in fact, that is doing that from the
15 beginning.

16 But typically, it's an out-flow from the U.S. to
17 the associate members, we call them.

18 COMMISSIONER McGAFFIGAN: This is ringing a bell
19 with something I read in the last couple days, I'm not sure
20 which publication, but a recent IAEA meeting, Ed Jordan was
21 there representing the United States, apparently, and there
22 was some discussion among regulators present about not
23 duplicating each other's regulatory decisions and having an
24 IAEA database of regulatory decisions that are made in
25 various countries, and it appeared, based on the news

1 report, to have been accepted by this conference as a
2 recommendation.

3 It strikes me that these groups, plus others -- I
4 mean, presumably Framatome or whoever has owners groups --
5 that they would need -- if this is actually going to happen
6 in IAEA space, you all would have to feed in -- or maybe
7 it's the regulator's job to say what regulatory decisions
8 are made, but when you have voluntary commitments in lieu of
9 a regulatory decision or as an acceptable means of meeting
10 the regulatory requirement, then that sort of information
11 has to feed into this database.

12 It's a very interesting concept. I'm not sure
13 whether -- how much in the way of resources are going to be
14 required to fill this IAEA database, but you all probably
15 have an interest in it.

16 MR. LIBERATORI: The industry itself has become
17 very global, obviously, and we do spend a lot of time with
18 the French and the Japanese exchanging data, now more so
19 than certainly we have in the past, and the international
20 members also take the opportunity to make presentations to
21 our owners groups, at our owners group meetings, as well.
22 So, there is very active participation.

23 CHAIRMAN JACKSON: Okay.

24 MR. FOSTER: Plant expenditures collectively for
25 the owners groups for 1998 should approximate \$35 million.

1 Next slide, please.

2 All of the owners groups have essentially common
3 objectives, one of those being to resolve common regulatory
4 issues.

5 We normally do that through our owners groups
6 committee activities, and as we talked about earlier, when
7 necessary we do respond through our regulatory response
8 groups.

9 We address generic issues in a cost-effective
10 manner by sharing cost for the work we accomplish. We
11 undertake projects for our technical and economic benefit,
12 and the owners groups do provide an excellent forum for
13 sharing of information and best practices.

14 CHAIRMAN JACKSON: Do you -- have you had any
15 indications that deregulation and competition is in any way
16 affecting the level of support for owners group activities?

17 MR. FOSTER: Certainly, from my perspective with
18 the B&W owners group, there's certainly budgetary impacts of
19 us all wanting to become more efficient.

20 CHAIRMAN JACKSON: And so, what does that mean in
21 terms of the impact on the owners?

22 MR. FOSTER: There's a pressure to reduce the
23 amount of money that's put into the owners group, or maybe a
24 better way to say that is the owners group budget becomes
25 more competitive with other dollars spent than the utility

1 as to where that split will be for the available dollars.

2 Next slide, please.

3 The owners group does provide a good forum for
4 communication with all parts of our industry, and that
5 certainly includes the NRC, and as mentioned already, we do
6 have regularly scheduled meetings with NRC senior management
7 with all the owners groups, and we do work directly with the
8 staff on specific issues, whether they're from a technical
9 or licensing basis.

10 All of the owners groups do work together with the
11 aid of the NEI. I do know all of the various owners group
12 chairmen here through interactions with the joint owners
13 group. We had a meeting yesterday, as a matter of fact. We
14 do discuss industry issues in that forum.

15 A joint owners group effort on air-operated valves
16 was recently initiated to develop maintenance and testing
17 guides for the industry. I think that's an excellent
18 example of a joint owners group activity.

19 We also participate with NEI in task force, as
20 appropriate.

21 CHAIRMAN JACKSON: Is there a role for joint
22 owners groups in terms of the development of probabilistic
23 safety assessment standards and certification?

24 MR. FOSTER: I'm not sure that I could answer
25 that.

1 MR. RAUSCH: It's already started. There's an
2 effort entitled PSA certification. I believe the staff has
3 held a workshop in that regard, and I believe the BWR owners
4 group initiated it. I think Westinghouse owners group is on
5 board. I'm not sure how many other ones are on board. I
6 think we've all been sharing the information.

7 CHAIRMAN JACKSON: So, you're actually part of
8 that effort.

9 MR. RAUSCH: Yes.

10 CHAIRMAN JACKSON: Okay.

11 MR. LIBERATORI: And we all work through the NEI
12 task force on that, as well.

13 MR. FOSTER: Next slide.

14 Each of the owners groups also works with INPO and
15 EPRI.

16 INPO provides the owners groups with performance
17 measures and performance data. We also acquire from them
18 industry experience, lessons learned.

19 From EPRI, they frequently attend our meetings.
20 They share their information with us. We understand their
21 initiatives, and as necessary, we do use their services in
22 helping us with our various projects and efforts.

23 Next slide, please.

24 At this point, I'll move to providing you some
25 information about the B&W owners group.

1 Next slide, please.

2 The B&W owners group is rather small compared to
3 the other owners groups. We're made up of five utilities
4 that have the B&W NSSS system. That includes seven
5 operating units.

6 We work through a typical structure of an
7 executive and a steering committee that provides direction
8 to our various committees, task forces, and working groups.

9 We do have a Framatome project team that's kind of
10 the glue that holds us together and supports our collective
11 efforts.

12 Currently we have underway over 80 projects. I'll
13 be covering just a few of those projects at a high level and
14 give you a feel for some of our activities.

15 Next slide, please.

16 CHAIRMAN JACKSON: Actually, I noted that you have
17 these two distinct groups -- risk-based --

18 MR. FOSTER: Yes.

19 CHAIRMAN JACKSON: -- applications --

20 MR. FOSTER: -- working group, yes, ma'am.

21 CHAIRMAN JACKSON: -- and the regulatory
22 reduction. I mean how are they intertwined? They're not?

23 MR. FOSTER: The risk-based applications working
24 group is primarily looking at probability risk assessment
25 issues.

1 The regulatory reduction working group was most
2 active when we were looking at cost-beneficial licensing
3 actions. There's not a lot of work in that particular arena
4 yet, a good bit of work over in the probability area.

5 CHAIRMAN JACKSON: Okay.

6 MR. FOSTER: Next slide, please.

7 I need to back up one slide, please. Thank you.

8 Steam generator lifecycle management takes about
9 40 percent of our budget or better over the last several
10 years, and we have projects ongoing in numbers of our
11 committees that support our steam generator efforts.

12 That includes our analysis committee, chemistry
13 committee, NDE committee, certainly the steam generator
14 committee.

15 Just to mention a couple of our more prominent
16 efforts, we have an effort underway for some time to develop
17 an alternate repair criteria for inter-granular attack and
18 primary water stress corrosion cracking degradation
19 mechanisms.

20 As an owners group, we work together to prepare
21 generic letter responses for the steam generator generic
22 letters.

23 Each of our utilities has participated in tube
24 pull projects in our generators to help us understand the
25 various degradation mechanisms that we've gained after

1 analysis of those tube specimens, and we currently and
2 continually have projects underway to improve our eddy
3 current production and analysis techniques.

4 Next slide, please.

5 We have numerous efforts underway supporting the
6 integrity of our reactor vessels. This includes irradiation
7 of surveillance specimens in our vessels. We use this
8 collected radiation data, then, to test those specimens, and
9 then we use that data to meet our 10 CFR 50 requirements.

10 We also actively support industry development of
11 analysis and test methods.

12 CHAIRMAN JACKSON: Let me ask you a question about
13 reactor pressure vessel integrity.

14 Whatever happened to annealing? That died on the
15 vine?

16 MR. LIBERATORI: It didn't. I have it on one of
17 my later slides.

18 CHAIRMAN JACKSON: Oh, you do? I'll wait.

19 MR. LIBERATORI: Okay.

20 CHAIRMAN JACKSON: The second question, though,
21 which relates to this, and maybe others will cover it, and
22 that is, you know, when I was in Japan a couple of years
23 ago, they were doing work to be able to look more directly
24 at the reactor pressure vessel in situ, because the
25 specimens, surveillance capsules sometimes, or as they call

1 them, the coupons, you know, there was a question about the
2 degree of their fidelity to the actual composition of the
3 welds of the reactor pressure vessels, as well as the
4 coupons themselves are not subject to the same -- quite the
5 same environment in terms of stress and so forth, because
6 it's not just irradiation but, you know, the other factors.

7 Are you doing anything along those lines in terms
8 of in situ measurements of the integrity of the reactor
9 vessel? Have you had any international interactions or
10 cooperation in that regard?

11 MR. FOSTER: I'm not aware of any nor am I
12 prepared to answer that question.

13 MR. LIBERATORI: I'm not prepared to answer in
14 detail. What I can say, though, is the industry is
15 formulating a materials reliability program effort that's
16 similar to what's been in function with respect to steam
17 generators.

18 CHAIRMAN JACKSON: Steam generators.

19 MR. LIBERATORI: And the intent is to deal with
20 material issues that relate to all PWRs, and I know reactor
21 vessel integrity is one of the first three items that they
22 want to look at.

23 CHAIRMAN JACKSON: Okay.

24 MR. PILMER: I'm going to address reactor vessel
25 issues, also. CE manufactured 53 of the domestic reactor

1 vessels in this country, and we have a big program on that,
2 but I've never heard that there was a real concern with the
3 faithfulness of the capsules to indicate embrittlement.
4 There are uncertainties, of course, and I believe they're
5 well accounted for.

6 CHAIRMAN JACKSON: I'll be interested when you
7 come around to talk about how you, in fact, bound those
8 uncertainties.

9 MR. PILMER: Okay.

10 CHAIRMAN JACKSON: Okay. Thanks.

11 MR. FOSTER: Next slide, please.

12 We do have a very active materials committee in
13 the B&W owners group, and we have been active participants
14 in the formation and work that's going on in this industry,
15 PWR material reliability project that Lou just mentioned.

16 In the materials area, we do have projects
17 underway looking at reactor vessel internals bolting, and
18 I'll address that a little further in a minute.

19 We have activities underway that address industry
20 issues relative to the control rod drive nozzle weld PWSVC
21 issues. Our work in that area included development of
22 inspection and repair techniques and then the inspection of
23 our most susceptible units.

24 We have an ongoing program to inspect in-service
25 control rod drives. The effort there is to measure wear on

1 those drives and see if we can't extend the life expectancy
2 of those existing drives.

3 We've been systematically in our materials
4 committee reviewing our reactor coolant alloy 600 materials.

5 Our core performance committee has regular ongoing
6 projects to review spent fuel, looking for the effects of
7 swelling, wear, corrosion on those fuel assemblies.

8 Our operation support committee has been reviewing
9 generic emergency operating procedure guidance, and where
10 our various utilities may have a need to deviate from that
11 guidance, we've been working through an effort to minimize
12 the need for any deviations.

13 And as part of our steam generator life management
14 efforts, our chemistry committee has a project that they've
15 been reviewing and working on that's looking at the
16 capabilities of titanium injections to delay or stop tube
17 degradation. We have injected titanium in two of our
18 generators, two of our utilities' generators.

19 Next slide, please.

20 At this point, I'll review just a few of -- a
21 couple of our issues that we consider successes in the B&W
22 owners group.

23 One such effort was our response to the Prairie
24 Island partial length control rod housing cracking issue.
25 Unlike Westinghouse that just has a few rods with those

1 similar weld metals, all of our drives have similar welds.

2 Our plan there inspected a statistically
3 significant number of the plant motor tubes. We also did
4 extensive reviews of our material and construction data.

5 From those inspections and those reviews, we
6 completed a preliminary safety assessment and have submitted
7 a topical report that indicates we're safe in that arena.
8 We found no cracking similar to Prairie Island, and we did
9 review the results of our work and findings with the staff.

10 Next slide, please.

11 In response to international issues relative to
12 reactor vessel bolting problems, we completed a preliminary
13 safety assessment that showed that our design differences
14 and lower bolt stresses eliminated immediate safety concern.

15 We have put in place a six-year project to
16 continue to look into this issue. That project includes the
17 identification of inspection, repair, and replacement
18 techniques, and materials that could be used in that arena.

19 We're also continuing to evaluate radiation
20 assisted stress corrosion cracking issues, and our project
21 also includes development of plans for potential internal
22 inspections down the road.

23 We also presented that information to the NRC
24 staff.

25 Last slide, please.

1 The last recent effort to discuss was our generic
2 license renewal efforts. This was a joint effort to support
3 member potential applications. Initially, four of our five
4 utilities funded this project. We still have three of those
5 five supporting it.

6 As I mentioned earlier, we did submit our first
7 application in July, when the Oconee submittal was made, and
8 our effort, as we discussed, develop generic topical reports
9 that could be referenced by member utilities.

10 I've listed those topical reports and their status
11 currently.

12 This concludes my portion of the presentation,
13 Chairman, in support of B&W efforts. At this time, I'll
14 turn it over to Tom Rausch for the boiling water reactors.

15 MR. RAUSCH: Thank you, Bill.

16 Well, it's certainly my pleasure to be here today.
17 I have been very heavily involved in the BWR owners group
18 for about 10 years, starting as the chairman of a large
19 committee, then as my company's representative -- that's
20 Commonwealth Edison -- and now, recently as chairman of the
21 owners group.

22 I'm a strong believer in the value of the owners
23 group to both us and to the NRC.

24 Could I have the organization slide?

25 I'm not going to dwell on organization other than

1 to say that we are from different outstanding working groups
2 or subcommittees. The big box at the bottom is really where
3 all our action is.

4 Each activity is separately managed and funded.
5 The net result is similar to the PWRs, and we have a large
6 number of people involved, since each of our 45 or so
7 efforts has its own roster.

8 Also, as much as I'd like to take credit for all
9 the glowing words Brian has had for the PWR vessel internals
10 project, it is a separate organization. We are awfully
11 close.

12 For a lot of reasons, it was decided to fund it
13 separately and manage it separately, although there is a
14 very large overlap in the executive leadership, so that we
15 come from similar molds.

16 Next slide, please.

17 We have a particularly active executive oversight
18 committee that's a subgroup of the executive's.

19 They help to ensure that our priorities stay
20 aligned with what the owners need, and when you look at the
21 list of activities, which I won't have time to talk about in
22 much detail, you'll see that many of our priorities are key
23 NRC issue, as well.

24 The BWR fleet is somewhat heterogenous. Very
25 early, we evolved into an organization that works both on

1 what we call a generic basis, where everybody participates,
2 and on a cafeteria basis, which is even more common in our
3 own risk group.

4 CHAIRMAN JACKSON: Now, when you say
5 participation, you mean in industry initiatives?

6 MR. RAUSCH: Means in owners group activities. We
7 may have an activity that involves five owners, all who have
8 the same type of containment, and the other 15 or 16 owners
9 don't have anything to do with it.

10 CHAIRMAN JACKSON: I understand that, but I'm
11 talking more relative to generic issues.

12 MR. RAUSCH: To generic issues, everybody
13 participates. The rules don't allow -- there's a voting
14 criteria. Three-quarters vote on a new effort, and
15 everybody has to participate.

16 So, our approach is a very flexible organization,
17 since we're very specific to the issue, and it's very
18 executive-driven.

19 Next slide, please.

20 Now, I've somewhat artificially just separated the
21 issues into categories just to help go through them, but
22 they really -- we really don't bin our activities.

23 This just gives you an idea of what we've been
24 working on. I'll highlight just a few of these. There's
25 too many to talk about all of them.

1 The regulatory issues are perhaps what we're best
2 known for, but as you can see, there's a number of other
3 activities which are aimed at improving safety, sharing
4 information, or reducing costs.

5 Examples in this category range from developing
6 optimum outage schedules to preparing guidelines for
7 reactivity management at a site.

8 The first three regulatory issues we've already
9 discussed somewhat. They're all interrelated -- suction
10 strainers, NPSH, and containment coatings.

11 We've worked closely with the staff on all of
12 these issues, as well as with NEI and the PWRs, where
13 appropriate, and we view resolution of the suction strainers
14 as a success story and as appropriate frequent open
15 communication with the staff, really at various phases of
16 the issue, without which we don't think we would have been
17 successful.

18 CHAIRMAN JACKSON: Before you go, what do you mean
19 by integrated risk-based regulation, and how does that play
20 off against the NEI initiative to revise the regulations to
21 be more risk-informed?

22 MR. RAUSCH: It's pretty much a good example of
23 how the NEI initiative would be of global importance to the
24 light-water industry, light-water reactor industry, and our
25 owners group committee -- its leader is a member of that

1 task force, and so, what we do is -- it's kind of like a
2 seamless transition from the industry's perspective and then
3 take it down to a more technical level on the boiling water
4 reactors.

5 That committee really has a large number of
6 efforts it's done. One example would have been -- was on
7 MOV 89-10 issues.

8 CHAIRMAN JACKSON: I'm really talking about, with
9 risk-based, do you mean purely PRA-driven?

10 MR. RAUSCH: Yes.

11 CHAIRMAN JACKSON: I see.

12 MR. RAUSCH: They worked with NEI.

13 CHAIRMAN JACKSON: Okay. So then that takes me to
14 PSA certification.

15 MR. RAUSCH: We are the initiators of that.

16 CHAIRMAN JACKSON: And you're working with ASME on
17 PSA certification?

18 MR. RAUSCH: We've communicated with them. I'm
19 not real familiar with the effort.

20 MR. SHERON: ASME is developing the PRA guide.
21 Certification, though, I think is strictly a
22 utility-industry effort.

23 CHAIRMAN JACKSON: Okay.

24 COMMISSIONER DIAZ: Could you comment, then, on
25 license renewal?

1 MR. RAUSCH: We've had varying degrees of activity
2 in license renewal. We were very actively funded several
3 years ago, and you asked about impact of deregulation.
4 Right about that time, the budget pressures and number of
5 utilities who felt that they were not going to run 60 years
6 led us to turning it into what we call a cafeteria effort as
7 opposed to a generic effort. It's been scaled down quite a
8 bit.

9 Although the vessel internals project is still
10 very important, it's very generic, and we do work with that,
11 also with EPRI, and we do have some generic topical, but
12 we're not at the same scale of effort as some of the other
13 owners groups.

14 Could I have the next slide, please?

15 This slide simply illustrates a little bit of
16 other types of activities we're involved in. Both materials
17 items listed involve obtaining inspection relief.

18 CHAIRMAN JACKSON: Well, you know our thrust is
19 risk-informed regulation --

20 MR. RAUSCH: Yes.

21 CHAIRMAN JACKSON: -- not risk-based regulation.

22 MR. RAUSCH: And unfortunately I can't change the
23 title of the committee. I can ask them to change it.

24 The reason we have a smaller number of materials
25 issues -- pardon?

1 CHAIRMAN JACKSON: You should consider that.

2 MR. RAUSCH: Yes, we should.

3 The vessel internals project really handles most
4 of the materials issues.

5 The boilers are -- the first two issues listed
6 there are very important, improve water chemistry and
7 hydrogen addition. We're looking for some relief in
8 inspection frequency, and we're working well with the staff
9 on that, as well as on the second issue, due to improved UT
10 techniques.

11 Briefly mention the year 2000 program. GE is
12 working with us to identify all potentially susceptible
13 equipment they've ever delivered to every licensee and
14 providing an initial assessment of Y2K readiness. That's
15 kind of accelerating owners efforts and providing like a QA
16 check on their own assessment.

17 CHAIRMAN JACKSON: From the NSSS perspective, do
18 you have some sense in terms of bounding the problem? How
19 big an issue is it and how much in the way of resources do
20 you think will be required to resolve the issue?

21 MR. RAUSCH: It's a big issue in the sense of it
22 does take a lot of resources to make sure we don't have a
23 problem. I'm not aware of very many plant hardware embedded
24 circuit-type issues that have arisen on the boiler side.
25 The ones we have looked at have been benign.

1 CHAIRMAN JACKSON: Have all the assessments been
2 completed?

3 MR. RAUSCH: No. The utilities are in a varying
4 range of completion on assessments, but I think -- we just
5 had an NEI-joint owners group meeting yesterday, and I can't
6 recall the figure, but by the end of the year, it will be
7 very high -- high fraction of assessments will have been
8 completed.

9 CHAIRMAN JACKSON: All right. Because you know
10 the NRC is, in fact, beginning inspections of that area.

11 MR. RAUSCH: Right. I think our Byron Station and
12 our Braitwood Station is on the list.

13 CHAIRMAN JACKSON: And the issue of embedded --

14 MR. RAUSCH: Yes.

15 CHAIRMAN JACKSON: -- chips and that kind of thing
16 is -- has a high Congressional focus.

17 MR. RAUSCH: Yes. I don't want -- I certainly
18 can't trivialize the issue, because you have to go way down
19 to the chip level --

20 CHAIRMAN JACKSON: Right.

21 MR. RAUSCH: -- make sure you have it
22 characterized.

23 CHAIRMAN JACKSON: Well, that's why it's important
24 -- I mean -- and you know, you kind of answered it quickly,
25 but the issue of how far along you are in doing assessments,

1 and it's not just for you --

2 MR. RAUSCH: Right.

3 CHAIRMAN JACKSON: -- it's for, you know, all of
4 the -- can you tell me how far along the assessments are?

5 MR. RAUSCH: Alex Marion is here from NEI.

6 Do you recall, Alex?

7 By the end of the year, 80-percent complete.

8 CHAIRMAN JACKSON: And that is for assessment.

9 MR. RAUSCH: Yes.

10 CHAIRMAN JACKSON: Is there an integrated approach
11 for what happens then, based on what you find?

12 MR. RAUSCH: You go into the next phase. I mean
13 there's testing and re-radiation, depending on what the
14 assessment was, if you have a lot of items that need to be
15 be further tested or --

16 CHAIRMAN JACKSON: I understand the process,
17 because we go through it ourselves as an agency. The
18 question really becomes, you know, what the planning is in
19 terms of knowing how good or how bad your situation is, what
20 your contingency planning is.

21 MR. RAUSCH: All I can say is what the industry --
22 what I'm aware of, what we're doing, and both us, NEI, and
23 EPRI are fulfilling an information sharing role, and in the
24 area of standards, I know we have plans to address
25 contingency planning at the BWR owners group just from the

1 standpoint of what others are doing to end up with a better
2 product.

3 So, beyond that, I know the EPRI effort is
4 massive. I think 600 people were at the last workshop. I
5 think that was the number.

6 CHAIRMAN JACKSON: Okay.

7 MR. RAUSCH: I'm going to mention just one other
8 issue on this slide.

9 Design basis issues is an example of where an
10 owners group can complement NEI activities, in this case
11 taking NEI 97-04, which is their document intended to
12 substantially clarify 50.2 down to more level of detail, and
13 then our effort, which is somewhat new, is to take it to
14 another further level of detail for BWRs.

15 There's room to -- the more precise we can be and
16 consistent we can be in what exactly is design basis and
17 what isn't, I think it's good for all of us. It's an issue
18 affecting everything from operability and reportability to
19 50.59.

20 Next slide, please.

21 Certainly suction strainers and related activities
22 have been discussed enough. It belongs high on the list of
23 recent successes, and I won't discuss it further.

24 The next bullet, briefly, we have a joint owners
25 group effort on motor-operated valve period verification.

1 You may be aware of it. This is a real good example of how
2 owners groups can work with the NRC and with each other.

3 We have a high percentage of owners involved in --
4 of all the light-water reactors, addressing Generic Letter
5 96-05.

6 In this case what we're doing is having -- sharing
7 test burdens. A lot of testing involved. By using 37
8 utilities and 94 units, we dramatically reduce individual
9 owner testing requirements and adding a high degree of
10 consistency to what testing is done.

11 So, this is a very good example of a win-win
12 situation.

13 We've already briefly talked about PSA
14 certification.

15 Next slide?

16 Bill's already mentioned the joint owners group
17 efforts on the AOVs. I like to list it as a success story
18 primarily because all four owners groups are working
19 together from the very beginning of the issue.

20 We couldn't tell for sure if this is the first
21 time this has ever been done, but it's certainly the first
22 time in recent memory that the four owners groups are
23 actually tackling a concern from the very beginning.

24 In this case, we're using operating experience,
25 and we intend to proactively define a utility program. We

1 intend to share the results with the NRC and believe that we
2 can end up with a very high-quality effort without a lot of
3 effort on the staff's point.

4 The other examples listed here go back in time
5 somewhat. They range from the regulatory response group on
6 sticking pilot valve diaphragms to stability and accident
7 management guidelines. So, as you'd like, we can talk about
8 these later.

9 Any questions?

10 CHAIRMAN JACKSON: Well, actually, questions as we
11 go along.

12 MR. RAUSCH: Sure.

13 CHAIRMAN JACKSON: What value in terms of risk
14 reduction do you believe the severe accident management
15 guidelines have had?

16 MR. RAUSCH: I don't think the owners -- at least
17 our owners group -- I don't think we've ever really come up
18 with a position on that. I'd have to give you a personal
19 one.

20 I know, from what I've heard of people on the
21 implementing side, there is some -- a little bit of
22 frustration since the boiling waters reactors already had
23 EOPs that transcended design basis accidents. So, there's
24 frustration that we're going even further out into very
25 low-frequency events.

1 But other than that, you know, I think there's
2 definitely improvement, particularly organizationally.
3 Again, I don't think we have a real position on that.

4 Any other owners groups?

5 MR. LIBERATORI: I guess I would offer that, you
6 know, we've learned a lot since TMI.

7 The state of knowledge of core degradation
8 progression and so forth is much more well-known now,
9 obviously, than it was then, and I think what we've done
10 here is taken what we've learned and put it in a framework
11 that could be used, you know, should such a situation arise.

12 So, it's captured, it's organized, it can be used
13 by utility emergency planning organizations should the
14 situation arise.

15 CHAIRMAN JACKSON: So that's the sense in which
16 it's a success. Okay.

17 MR. LIBERATORI: It's when you've gotten to the
18 last EOP and it hasn't worked, what do you turn to next?
19 You go here.

20 CHAIRMAN JACKSON: Right. Okay. Thank you.

21 MR. RAUSCH: Next slide, please.

22 I'd like to close with this issue, high-exposure
23 channel bow, simply because it's a good example of how we
24 can reduce the impact of an issue or how the owners group
25 can reduce the impact of an issue both to ourselves and to

1 the staff.

2 Recently, a boiling water reactor experienced
3 degradation in scram time performance, and it's just a
4 single drive.

5 During the refueling outage, they noticed visibly
6 evident channel bow on one assembly. It turned out to be a
7 high-exposure assembly in that same cell that the control
8 blade was slow.

9 They were able to detect it well before any safety
10 significance, in this case because they were still well
11 within the tech spec scram time, but they had been
12 conservative and disarmed the valves in that drive and left
13 the rod inserted anyway.

14 But where we came in is GE had performed an
15 initial assessment, communicating the results to all the
16 owners and to the NRC, and when the staff started reviewing
17 it, they had a lot of questions.

18 They called me and asked questions related to the
19 impact on the fleet and the safety significance, and between
20 the owners group and GE, we were able to very rapidly answer
21 the questions and develop a monitoring program. In fact, we
22 did it inside of two weeks.

23 CHAIRMAN JACKSON: Was this handled through the
24 regulatory response group?

25 MR. RAUSCH: No, it wasn't. I think the level of

1 concern was -- probably wasn't there, but it was -- I'm not
2 sure where it fell on the threshold. I think, absent our
3 information, it may have.

4 MR. SHERON: I don't profess to know back when,
5 you know, exactly what prompted the staff to just, you know,
6 contact the owners group directly versus direct response,
7 but my guess is, as Tom said, it didn't reach the threshold
8 where we would consider activating the RRG.

9 CHAIRMAN JACKSON: I see. Okay.

10 MR. RAUSCH: I think, early on, we knew it was a
11 small subset of channels that were susceptible, but exactly
12 how wide that was wasn't known.

13 CHAIRMAN JACKSON: Very good.

14 MR. RAUSCH: That's it with this.

15 I'd like to introduce Dave Pilmer, CE owners
16 group.

17 MR. PILMER: Thank you, Tom.

18 I work for Southern California Edison and the San
19 Onofre Nuclear Generating Station. I've been chairman of
20 the CE owners group for the past two-and-a-half years.

21 The CE owners group consists domestically of eight
22 utility members. We have 14 operating units. A recent
23 defector of our group was Maine Yankee.

24 I'd like to draw your attention to the
25 organization chart. I'm not going to dwell on this, because

1 it follows a description that you've already heard twice
2 now.

3 I would point out that we have 14 functional areas
4 depicted in the boxes under there. I'm going to refer to
5 those as subcommittees, even though you'll see three
6 different terminologies used.

7 The subcommittee term usually refers to a standing
8 or permanent organization with a functional interest as
9 shown by the name. The working groups and the task forces
10 are more narrowly focused and come into existence and go out
11 of existence when their function has been served.

12 I would also -- to give you a flavor of what
13 owners groups are really about, I would point out that, of
14 the 14 boxes you see there, four of those are aligned with
15 the station direct line functions, whereas the other 10 I
16 would characterize as being engineering support functions,
17 the point being that this owners group -- and I think it's
18 fair to say the others, too -- are primarily an engineering
19 support organization.

20 Let me run through a few of the selected
21 activities of the CE owners group.

22 The first bullet you see there refers to steam
23 generators, and let me comment that we have tried to focus
24 our activities in terms of what we call strategic issues.
25 The number one strategic issue that our owners group faces

1 is steam generators and the management of steam generators
2 and their preservation.

3 The first task you see there is quite a large one.
4 It involves developing an alternative repair criteria to
5 deal with axial tube crack indications.

6 I believe it's fair to say that the practice in --
7 amongst the CE plants is that any indication, no matter how
8 slight, results in the tube being plugged for lack of any
9 definitive alternate repair criteria or regulatory approved
10 means of keeping cracks in service.

11 I'm going to come back and mention some other
12 steam generator activities which are not -- which have been
13 completed. The selected activities I'm talking about now
14 are work in progress.

15 The second one -- since we're irreverently
16 referred to risk-based products -- you can see, I still use
17 that term, also.

18 CHAIRMAN JACKSON: You can have risk-based
19 products. I'm just saying that we talk about risk-informed
20 regulation.

21 MR. PILMER: Risk-based products are the basis for
22 which we can make risk-informed decisions.

23 CHAIRMAN JACKSON: They're used in risk-informed
24 decision-making.

25 MR. PILMER: I still get it wrong.

1 CHAIRMAN JACKSON: We'll keep working at it.

2 COMMISSIONER McGAFFIGAN: Talk to your lawyers.

3 CHAIRMAN JACKSON: That's right. Talk to your
4 lawyers. That's right. And our lawyers.

5 MR. PILMER: The first I'd like to mention are
6 revisions to our technical specifications dealing with
7 allowed outage times, and I'm happy to say that we have, for
8 our pilot plant or our lead plant, approval now for the
9 first two on this list, which deals with taking a
10 low-pressure safety injection and the safety injection tanks
11 out of service longer than the standard period of time.

12 In all of these cases, I would point out that the
13 risk assessments performed indicate that taking them out of
14 service in mode one for a longer period of time is a safer
15 course of action than to drive the plant to a mode five
16 shutdown to affect the action that would be indicated.

17 We have pending, nearing completion, one on
18 emergency diesel generators, and in an earlier stage of
19 review, high-pressure safety injection and containment spray
20 pumps.

21 As part and parcel of that, we have, through the
22 owners group, developed a configuration risk management
23 program, guidelines to apply to our members and which has
24 been shared with the industry for -- which I think will be
25 valuable as others proceed in this area, as well.

1 And I don't know if I agree with -- I guess I
2 agree with Tom that they started the certification program,
3 we picked up that idea, but we've been working on it for
4 quite some time, at least two years, and it has revealed a
5 lot of valuable insights as to how various people do IPEs
6 and IPEEEs, their risk assessments.

7 I think that the product of this will provide a
8 great deal of credibility and value to the whole area of
9 risk assessment.

10 I won't say anything more about sump strainer
11 performance. It's been mentioned quite at length.

12 Going on to the next slide, we have an active
13 program within our owners group to -- improving plant
14 performance in the areas of plant unreliability and
15 equipment failures, to identify these contributors and to
16 improve our plant performance.

17 Needless to say, it's both from a safety
18 perspective as well as economic that one wants to have a
19 high quality of operations and to avoid forced outages.

20 CHAIRMAN JACKSON: What have you identified? Or
21 let me put it this way, not that you need to give me some
22 enumeration, but when you've identified the largest
23 contributors to plant unreliability and equipment failures,
24 how do those contributors play off against the assumptions
25 in the IPEs for CE PWRs?

1 MR. PILMER: Well, there is a link there, but I am
2 not aware that we have identified that would indicate a
3 shortcoming on the IPEs.

4 These are more of the practical things that lead
5 to improving plant availability, and as far as I know, they
6 are consistent with assumptions on --

7 CHAIRMAN JACKSON: But have you done an explicit
8 payoff of one --

9 MR. PILMER: Really, that's not the focus.

10 CHAIRMAN JACKSON: No, I understand that. Okay.
11 So, that's not the focus, but perhaps -- I mean that is a
12 useful activity, because if one has PSAs that are predicated
13 on certain assumptions that, you know, identify these as
14 part of a risk assessment --

15 MR. PILMER: Yes, that is a good link and, I
16 think, a useful thing to do.

17 CHAIRMAN JACKSON: Right.

18 MR. PILMER: I agree.

19 The focus of this, of course, is to find out where
20 we have problem equipment or processes or procedures and to
21 improve them, to get the reliability up.

22 CHAIRMAN JACKSON: Yes.

23 COMMISSIONER McGAFFIGAN: Could I address a
24 question that is on this point, at least peripherally.
25 Maybe others could answer it, as well.

1 There was a little excerpt in Nuclear News Flashes
2 yesterday that said only 20 -- the NRC employee talking is
3 Dale Rasmussen -- only 20 utilities so far have signed up to
4 use a failure database NRC has collected. NRC queried
5 utilities of their interest early last month via
6 administrative letter. The database covers '80 to '95,
7 includes events from LERs and in PRDs, etcetera. Rasmussen
8 said NRC would like to expand the availability of the
9 database but has not worked out the details for sharing
10 partially proprietary information.

11 Where does this stand? I'm not sure whether I
12 should ask Brian or you all. Were we expecting a larger
13 reply than 20 utilities? It's on the issue of sharing a
14 failure database that we have compiled.

15 MR. SHERON: Well, the database was developed by
16 EEOD.

17 COMMISSIONER McGAFFIGAN: Right.

18 MR. SHERON: Mr. Rasmussen works there.

19 I'm not that familiar with it. I think, on the
20 one meeting I did have, I think the expectation was, is that
21 we would probably get a lot more subscribers, you might say,
22 to use it in terms of its value.

23 COMMISSIONER McGAFFIGAN: And do any of the owners
24 group folks have any indication as to why people aren't
25 signing up for this database?

1 MR. LIBERATORI: I don't have information to
2 respond right now.

3 COMMISSIONER McGAFFIGAN: Okay.

4 MR. PILMER: I think, in that scenario, we'll
5 always be glad as an owners group to communicate with the
6 staff what the view is of our members.

7 COMMISSIONER McGAFFIGAN: I don't know how much
8 we're charging. Maybe we're charging a fortune, too.

9 MR. PILMER: I'm not personally familiar with it.
10 I do understand that we make use of some other commercial
11 failure database.

12 I'd like to make one remark about Y2K readiness.
13 The owners group -- our owners group has a project that
14 looks at all of the digital equipment supplied by -- as part
15 of the NSSS for all of our members.

16 It's gone to the preliminary assessment. It's
17 practically complete with a detailed assessment, and it's my
18 understanding we expect to be -- at least for that part, the
19 NSSS-supplied equipment, we expect to be complete by the end
20 of this year with respect to both identifying any required
21 testing or remedial measures to be taken.

22 The next one, I think, is worthy of attention
23 here, and that is an outage readiness peer review program
24 that we have initiated, where we take some of our members
25 and experts in the outage planning process and we go to the

1 -- each of our other member plants a few months before they
2 begin an outage.

3 We perform a readiness review. This gets down to
4 the nuts and bolts of performing outages and sharing
5 experiences, and it's been very valuable in improving the
6 efficiency of our outages.

7 I am going to mention another one later about
8 dealing with -- let me put it this way. We're going to do
9 similar things in the area of plant performance and design
10 basis issues, as well, to help our members in a similar
11 fashion.

12 They're not developed enough for me to report on
13 at this time.

14 You've already heard much here, I think, about the
15 ASME programs on risk-informed IST/ISI. We are part of
16 that, as well. In fact, one of our members is the pilot
17 program in the -- of the EPRI program, and other activities
18 include the implementation of the improved standard
19 technical specifications.

20 We currently have two of our members, two out of
21 eight, that have implemented the improved standard tech
22 specs, and there are others nearing that point of
23 implementation.

24 So, those are examples of work in progress by our
25 owners group, and in terms of things that are largely

1 complete that I'm going to label successes here, to begin
2 with are the emergency procedure guidelines that were an
3 outgrowth of the TMI action plan.

4 Initially, the Commission required that emergency
5 procedures be submitted for review and approval by the NRC
6 staff. That was back in the early '80s. What that actually
7 ended up with was approval of NSSS generic emergency
8 procedure guidelines.

9 But the work did not stop there, and I think we
10 can be proud of the fact that, through experience and
11 emergency exercises and new insights into failure modes and
12 so forth, these emergency procedures guidelines that were
13 originally approved more than 10 years ago have undergone an
14 order of magnitude improvement based upon that experience.

15 So, they're at a very high degree of development
16 at this time.

17 We continue to make improvements. We do not
18 continue to ask for the NRC to review these. There's no
19 requirement for that, and given your resources, probably,
20 wouldn't merit it anyway.

21 We do provide them, though, for information to
22 staff, so that we keep the staff up to date as to where we
23 stand with these.

24 And secondly, the severe accident management
25 guidelines, which is an owners group product and is out

1 there for all of our members, as far as I know, being
2 complied with by all our members, for implementation by the
3 end of this year, which is the basic time schedule.

4 I'm going to jump down to the last one here on
5 steam generator management.

6 We have an in situ pressure testing guidelines
7 which has been valuable in understanding the nature of eddy
8 current indications and whether or not these constitute
9 unstable cracks or not.

10 By the way, we do in situ pressure testing where
11 we have a crack indication. As I already indicated, all of
12 those tubes get plugged, however they go through testing to
13 show that the analysis by the -- done for those indications
14 is valid.

15 The last two items are related. We have an
16 extensive eddy current flaw library and steam generator
17 defect database, and these are specific to the CE design
18 steam generators. They wouldn't be applicable to the other
19 PWRs.

20 And finally, on the generic material integrity
21 concerns, the alloy 600 reactor vessel head penetrations, I
22 think that we've been agreeable to providing information to
23 the staff. We've even included susceptibility ranking for
24 the CE plants anyway.

25 We've had one plant that's undergone a

1 comprehensive inspection of the head nozzles. That was our
2 most highly susceptible plant.

3 We have another plant that underwent a partial
4 inspection, and we have a third plant, also high on the
5 susceptibility ranking, scheduled to undergo complete
6 inspection by the middle of next year.

7 And what we have seen so far, all the information
8 available to us does not indicate that there's any real
9 safety concern.

10 Last, I'm going to mention here the reactor vessel
11 work that we have done. This work has been focused on weld
12 materials and properties. As I already mentioned, there are
13 53 of the commercial vessels in this country that were
14 constructed by Combustion Engineering.

15 So, our working group on this includes many
16 utilities which are not members of the CE owners group but
17 own a CE vessel.

18 The nature of the work was to gather all available
19 weld chemistry data from many sources that were not known,
20 certainly to the NRC, to have existed, but we have found
21 extensive new data, and these have been used to improve the
22 characterization, draw confidence intervals on our knowledge
23 of the copper and nickel content for those welds.

24 CHAIRMAN JACKSON: Do the coupons have the same
25 content?

1 MR. PILMER: The coupons are well within the
2 tolerance of the data that's known. The weld chemistry
3 includes the coupons.

4 Now, the coupons are made from the same material.
5 They're made at the same time that the welds are put in
6 place.

7 But from one part of -- as we found out, one
8 sample of the same -- five samples of the same weld, they
9 don't give precisely the same data on chemistry content.
10 But they are statistically bounded, and the coupons are
11 included in there.

12 I think your earlier comment about the
13 representativeness of coupons refers more to the uncertainty
14 on the fluence applied to those coupons.

15 The fluence is calculated, and it's different from
16 the fluence at the vessel wall, and of course, the coupons
17 are closer and experience higher fluence in the vessel, so
18 that there's an adjustment made to that.

19 CHAIRMAN JACKSON: Well, there is also a question
20 -- and, you know, this is not to get into a technical
21 debate, but the vessel itself has stresses on it that the
22 coupon does not.

23 MR. PILMER: Very true, yes.

24 CHAIRMAN JACKSON: Okay.

25 MR. PILMER: The owners group program on this has

1 been -- dealt with the issue of variability of the chemistry
2 in the weld material.

3 That's been the focus of our task, and that's
4 complete now, and I believe that the staff is pleased with
5 the information we have developed on that. It resolves some
6 very important problems indicated where there appeared to be
7 high variability in these weld materials, and I think we
8 have the best knowledge we can have at this point in time on
9 that variability.

10 CHAIRMAN JACKSON: Tell me about the direct
11 measurement of fracture toughness.

12 MR. PILMER: Well, that is a -- the way
13 embrittlement is monitored today, we look at the shift in
14 the sharp data taken at a different energy level than the
15 fracture toughness.

16 So, all I can say is that they're looking at --
17 they have a research program in which these coupons
18 themselves would be the direct measurement of fracture
19 toughness, using a different measurement technique, and I
20 regret to say I'm not a materials man, and so, I don't know
21 the --

22 I would also point out that not all of our members
23 are participants in this work. We have different distinct
24 classes of vessels out there.

25 We have everything ranging from -- one of the

1 plants -- one of our members had directly participated in
2 the vessel annealing program because they anticipated
3 potential need for that for their vessel, all the way to --
4 and I'll name by name -- the Palo Verde vessel, which is the
5 vessels which are good for 1,000 years.

6 So, there's not a lot of interest on their part in
7 pursuing this type of work.

8 That's also true of the San Onofre vessels, not
9 good for 1,000 years but well beyond any possible lifetime.

10 That completes my --

11 CHAIRMAN JACKSON: What about the 22-day benchmark
12 outage?

13 MR. PILMER: I'm trying to speed things along, and
14 that's -- this is an economic one.

15 We have an outage management working group, as you
16 could find on our organization chart. They have exchanged
17 information. They've worked on the ideal outage, producing
18 a reference outage, and it is a 22 -- we call it a 22-day
19 benchmark outage.

20 To that one adds other specific items of work
21 that's not in that benchmark outage, but we think that we
22 can improve the efficiency of our outages, and I think the
23 operating experience data indicates that the whole industry,
24 not just the CE fleet, are, indeed, making big strides in
25 that.

1 CHAIRMAN JACKSON: How much of a transfer of
2 activity to on-line maintenance does this require, and how
3 are risk assessments used?

4 MR. PILMER: This benchmark outage does not depend
5 upon shifting work to on-line. This is directed at
6 improving the efficiency, eliminating the dead times during
7 outages, and to help people learn how to do a better
8 planning job.

9 CHAIRMAN JACKSON: Okay. Thank you.

10 MR. PILMER: Thank you.

11 I'll turn it over now to Lou Liberatori from the
12 Westinghouse owners group.

13 MR. LIBERATORI: Thank you, Dave.

14 As Dave said, my name is Lou Liberatori. I'm
15 currently employed by Consolidated Edison Company of New
16 York. I've been associated with the owners group as a
17 primary representative for a number of years now. I've been
18 chairman since the beginning of this year.

19 Could I have the organizational slide, please?

20 Let me just dwell here for a few moments.

21 You can contrast the owners group -- at least the
22 Westinghouse owners group organization with the BWR owners
23 group right now. We have five standing subcommittees that
24 are aligned with functional areas -- analysis, licensing,
25 operations, materials, systems and equipment engineering.

1 The large majority of our work tends to be
2 generic, although we do have cafeteria-style options -- we
3 call them subgroups -- where smaller groups of utilities can
4 group together to perform work, but the majority of the
5 owners group work does tend to be generic.

6 We have 23 domestic utility members, and we have
7 eight international members, plus Westinghouse, who is also
8 a paying member of the owners group.

9 We require a three-quarter vote, as Tom mentioned
10 the boilers do. So, any program that makes it through the
11 owners group has the approval of at least 18 utilities. So,
12 any product that comes out of the owners group has
13 wide-range backing.

14 If you look at the organizational chart, we have a
15 steering committee that's elected by the primary
16 representatives, we have ties to a full-time project office
17 within Westinghouse, we have ties to an executive advisory
18 committee. Every member has a single executive on that
19 committee. They meet once a year with the steering
20 committee.

21 We also have a smaller subgroup, called the
22 executive management group, of five executives that meet
23 with the steering committee quarterly and provide more
24 direct input to us strategically in progress of the work we
25 have going on.

1 If you look just below the steering committee box,
2 you'll see our regulatory response group, also issues review
3 group and potential issues core team. All of those are
4 varying degrees with which the owners group handles emerging
5 issues.

6 Obviously, the RRG is the one that's been in place
7 since TMI, and these other functions have evolved over time
8 to deal with issues that don't warrant the attention that an
9 RRG activation would give.

10 So, we've built layers of ways of dealing with
11 emerging issues within the owners group, and that chairman
12 reports directly to the steering committee, as you can see
13 on the chart.

14 We do have working groups, as some of the other
15 owners groups do, that are either issue-specific or
16 functionally specific.

17 To the bottom right, we do have our, if you'll
18 excuse the title, risk-based technologies working group.
19 They function both in PSA peer-review type of work and also
20 provide consultation to the rest of the subcommittees and
21 working groups that may want risk-informed input into the
22 work that they're doing. So, we utilize them sort of across
23 the board.

24 I'll go through some selected activities below. I
25 won't touch base with all of them, but I'll mention some of

1 them that I think will be of interest.

2 We, at any time, have approximately 70 or so
3 active projects, again spread throughout the owners group
4 organization. I've listed some of the ones that are
5 regulatory related on the next two slides.

6 On the first slide there, the first couple of
7 issues are ones that evolve from plant experiences, things
8 that were discovered at other plants.

9 The part-length housing issue from Prairie Island
10 we've talked about before.

11 The high burn-up fuel was the reactivity insertion
12 accident issue that actually had its origins with some
13 French experience, and the next one is the vessel head
14 nozzle issue we've talked about.

15 All of those, the owners group is dealing with
16 internally as well as interacting with the rest of the
17 industry on.

18 Moving down the list, shutdown regulations, we
19 have a shutdown issues working group, if you noticed on the
20 chart up there, that was involved in providing comments to
21 the draft rules over the last few years, but also,
22 internally, it gave us the opportunity to share best
23 practices in terms of outage management, similar to some of
24 the things that the CE owners group has done, and I'll
25 mention one particular product that came out of that on a

1 later slide.

2 We've looked at things such as increased break
3 opening time for pipe rupture assumptions.

4 And the last one -- let me point out -- the core
5 damage assessment methodology. This is another one of those
6 issues that really hasn't been touched since Three Mile
7 Island. A lot has been learned; a lot of our thinking has
8 changed.

9 In fact, some of this current thinking is being
10 incorporated into the severe accident management guidelines
11 that all the utilities are implementing right now, and what
12 we did is basically submit -- this is one of our topicals we
13 have in to the staff, basically a revised core damage
14 assessment methodology based on the state of knowledge of
15 core damage progression to date.

16 At the top of the next slide, post-accident
17 sampling requirements, this is a nature followup that we
18 currently have working -- we have not submitted a report yet
19 -- where we're actually taking the core damage assessment
20 methodology as revised and are proposing changes to the
21 post-accident sampling requirements, or will propose, based
22 on what we think makes sense today based on where the core
23 damage assessment methodology understanding is.

24 The next several here are all projects that we
25 have working internally but are interacting with the

1 industry on.

2 We've mentioned the joint MOV program and some of
3 the vessel integrity issues where we're feeding the industry
4 effort.

5 We've also had internal efforts on improved tech
6 specs and on addressing our piece, or the Westinghouse NSSS
7 vendor piece, of the steam generator internals degradation
8 issue and response to that generic letter.

9 And the last bullet on that slide, license
10 renewal, as I touched on briefly earlier, we're in the fifth
11 year of license renewal work within the owners group.

12 It has typically taken about 20 percent of our
13 budget, so we've put a lot of time and effort into this, and
14 we've submitted the generic topical reports on key issues,
15 similar to the reports that Bill talked about earlier that
16 the B&W owners group has submitted, and I'll also mention
17 some products in a later slide that we have been able to use
18 right now.

19 So, there have been some benefits that apply today
20 from our license renewal work.

21 The next slide, please?

22 Some of these areas didn't start as regulatory
23 issues, so I categorized them as safety performance
24 enhancements.

25 Obviously, the risk-informed applications has

1 evolved into a major industry and staff issue. We have lead
2 plants for all of the various activities for the ISI and
3 IST, and we're working through the integrated industry
4 effort without pilot plants.

5 In fact, Surry is the one that Brian was referring
6 to earlier that we're hoping to get the SER on by the end of
7 this year.

8 PSA peer review we also have a pilot effort on to
9 do such a review. It's ongoing right now. Our intent is to
10 use that as a -- to develop a methodology for benchmarking
11 for the rest of our members to use for their PSA peer
12 reviews.

13 Baffle barrel bolting -- we affectionately call it
14 BQ so we don't have to try to say that, but this is an item
15 that came out of license renewal as a start. It was an
16 aging management concern that, when we looked at it, the
17 information told us it wasn't just a life extension issue
18 but it was also an issue that needed to be dealt with within
19 the current license dates of our members, and we put
20 together a very proactive program.

21 We went to our executives and got supplemental
22 funding to start this in a mid-year. It's a multi-year
23 effort, on the order of three to four years, and millions of
24 dollars to address this.

25 We have lead plants that, this fall, we'll be

1 inspecting and removing bolts, and the owners group is
2 funding hot cell work for those bolts so that we understand,
3 if cracking exists, what those mechanisms are, so that we
4 can compare that to the French experience, which is what
5 brought it to our attention in the first place.

6 So, we have a very active program, and again,
7 that's probably taking something on the order of 20 to 25
8 percent of our budget, as well.

9 We continue to support the EOPs on a generic
10 basis. The ERGs, or the emergency response guidelines, are
11 the WOG generic version of the EOPs.

12 We have a maintenance program that's still ongoing
13 that allows utilities to feed back questions of any nature
14 at any time. We've revised our EOPs probably on the order
15 of three or four times over the 15 years that they've been
16 on the street.

17 So, we are constantly evaluating and updating the
18 EOPs as information becomes available to us.

19 The last two items on that slide are just vessel
20 integrity materials chemistry issues, similar to what you've
21 heard from the other owners groups. That's the Westinghouse
22 input to basically the industry efforts on those.

23 Next slide, please.

24 Here we have several what I'll call internal
25 initiatives.

1 Many of our owners wanted to get together and
2 discuss reactor coolant chemistry, and there was such
3 tremendous interest in it that we actually formed a working
4 group for it.

5 This is a case where many of the members felt that
6 they needed to share experiences, and we wanted to learn
7 best practices from others. So, that's one of those
8 initiatives that we started on our own.

9 The GOTHIC shutdown model came out of our work
10 when we were looking at the -- actually commenting on the
11 shutdown rule.

12 We started comparing how people set down their
13 outages, how they determined decay heat, how they determined
14 at what points in the outage could you do certain things,
15 such as drain-down to mid-loop operation and detention ahead
16 and things like that, and it looked like many utilities were
17 trying to develop their own way of calculating that or
18 simplifying that calculation, and we got together as an
19 owners group and actually developed a model for us to use,
20 you know, internally for our own use, for the shutdown risk
21 studies.

22 So, this is a case where we took some of our
23 discretionary funding and developed a model that was useful
24 to us.

25 CHAIRMAN JACKSON: The staff did a fairly

1 extensive review of W-GOTHIC, the modified version, as part
2 of the AP600 review. Have you been able to make use of any
3 of that in terms of any enhancements or updates to GOTHIC?

4 MR. LIBERATORI: Well, we took the W-GOTHIC and
5 modified it for shutdown purposes.

6 CHAIRMAN JACKSON: Okay.

7 MR. LIBERATORI: That's what we did here,
8 specifically for shutdown management.

9 Guide tube pin replacement -- this was the cracked
10 pin at Vogle, and the owners group funded some money in
11 there to assist in the determination of the cause and for
12 what the appropriate replacement material would be. So, we
13 helped fund the plant-specific effort there and gained
14 generic benefit from it.

15 ASIX is a chip-based replacement model for the
16 protection systems, the cards and the protection system. It
17 was a firm-ware option that the owners group -- that's still
18 an open program to develop replacement cards for the future,
19 as the older cards become obsolete.

20 Pressurized thermal transients -- this is another
21 case where we proactively went out and installed temperature
22 monitoring probes on several plants to determine the effects
23 of startups and shutdowns on the pressurizer itself, to
24 develop additional operating procedure guidelines to reduce
25 the type of, you know, thermal stresses that the pressurizer

1 would see over the life of the plant.

2 So, those are some of the initiatives that we
3 started basically without, at least initially, regulatory
4 input.

5 Down on the recent successes slide, we talked
6 earlier about regulatory response groups.

7 We've been activated twice in the last three
8 years.

9 The two issues were the incomplete rod insertion
10 issue, which occurred at two of our plants, and the
11 part-length control rod drive weld defect issue, which
12 occurred at Prairie Island, which we talked about earlier.

13 In both of these cases, the regulatory response
14 group functioned as was originally envisioned. TMI, I
15 think, worked to both ourselves and the staff's advantage.

16 In the case of the incomplete rod insertion, we
17 did get an initial bulletin out to licensees on that issue.
18 However, the follow-up longer-term work that the utilities
19 did was able to allow staff not to issue a supplement to
20 that bulletin, and right now, we're continuing to manage
21 this as an industry issue.

22 This, I would say, is one of those issues that
23 staff is monitoring what we're doing.

24 The part-length control rod drive issue -- that's
25 another issue that's currently still ongoing. We've had

1 several utilities remove the housings themselves for further
2 examination.

3 We have other utilities do in situ non-destructive
4 examination of those, and we're still looking to the people
5 that have these part-length rod housings to determine the
6 long-range plan. We're still working with staff on that.
7 But to date, staff has not had a generic communication or
8 seen the need to issue a generic communication on that
9 issue.

10 COMMISSIONER DIAZ: I understand the staff had
11 some questions or problems with the part-length -- the way
12 this was being resolved?

13 MR. LIBERATORI: I would just categorize it as
14 we're working with staff to determine, you know, how many
15 inspections are really needed to give both of us the level
16 of confidence we need, that this was a unique fabrication
17 defect and that it wasn't a random event.

18 CHAIRMAN JACKSON: I hate to do this to you, but
19 we have a publicly-scheduled affirmation. So, I'm going to
20 have to ask you to --

21 MR. LIBERATORI: Sure.

22 Proactive management of baffle barrel bolts we
23 talked about earlier.

24 Why don't we just go to the closing slide?

25 COMMISSIONER McGAFFIGAN: Could I catch you before

1 you get to the closing slide?

2 MR. LIBERATORI: Sure.

3 COMMISSIONER McGAFFIGAN: The 15 license renewal
4 generic technical reports -- have those all been submitted
5 to the staff?

6 MR. LIBERATORI: No.

7 COMMISSIONER McGAFFIGAN: How many require review?

8 MR. LIBERATORI: We had intended to submit five to
9 the staff, which we have, basically key ones -- reactor
10 vessel internals, pressurizer, RCS supports, class one
11 piping containment. Those are the ones that we've submitted
12 to staff.

13 If we get agreement on the approaches in those
14 major issues, the other less complicated, more direct issues
15 would fall in place. We see no need to have all of the
16 license renewal work we're doing at those levels to get
17 staff review.

18 COMMISSIONER McGAFFIGAN: Are there anymore coming
19 other than those five?

20 MR. LIBERATORI: No. The five are all we have
21 planned to submit.

22 COMMISSIONER McGAFFIGAN: Okay.

23 MR. LIBERATORI: The closing slide, please?

24 CHAIRMAN JACKSON: I didn't mean to keep you from
25 hitting some high points, if there were some others you

1 wanted --

2 MR. LIBERATORI: That's okay. Oh, I'm sorry. I
3 should back up to the vessel annealing. You did ask a
4 question earlier.

5 We did have a window of opportunity there with the
6 Marble Hill reactor vessel, and Westinghouse and Cooper Heat
7 and DOE had put funding in place to do that, but there was
8 still a shortfall in some funding.

9 So, the owners group stepped up, and I believe we
10 contributed something on the order of three-quarters of a
11 million dollars, and some individual utilities also provided
12 additional funding so that we could go forward and actually
13 complete the effort.

14 So, the effort was completed. I don't know that
15 we have a final report at this time, but we were able to get
16 it completed.

17 That was an issue where we felt that, generically,
18 we had the window of opportunity and it may be something
19 we'd need in the future. So, we did step up and provide
20 funding.

21 CHAIRMAN JACKSON: Do you plan to have a report?

22 MR. LIBERATORI: Yes. I think the issue is just
23 in the funding right now. Okay. I understand it was
24 issued. We found the money.

25 CHAIRMAN JACKSON: Thank you.

1 MR. LIBERATORI: Okay. So, I'd just like to
2 provide some concluding remarks on behalf of all four owners
3 groups at this point.

4 The first observation I'd like to make is that the
5 owners groups provide a broad focus, including key
6 regulatory issues, and at the time of TMI, when most of us
7 were formed, you know, clearly the effort was 100-percent
8 regulatory reactive-driven at that time.

9 We have moved to where we have a split -- and it's
10 different among the owners groups -- where we do have
11 funding in place in time to work on discretionary items that
12 help us as utilities, as well as deal with regulatory
13 issues.

14 The second point I'd like to make is that the
15 owners groups do produce high-quality products for a number
16 of reasons.

17 One is that there is tremendous operational
18 experience that is brought to bear at the owners groups.

19 As you've heard, every utility that has a licensed
20 plant has representatives both at the primary group level as
21 well as subcommittee level. We get the benefit of that
22 experience.

23 We have the benefit of direct NSSS involvement.
24 So, the technical expertise of the NSSS vendors is brought
25 to bear.

1 And there is extensive review and consensus
2 processes within the owners group workings that lead to a
3 very well-developed, high-quality product when we're done.

4 Clearly -- I think we talked about this earlier --
5 it's certainly an efficient use of resources.

6 Not only is there cost-sharing benefits but also
7 the benefit in just having common approaches to common
8 issues, and in terms of NRC staff, certainly, if they could
9 review an issue once generically, this is clearly a win-win
10 situation.

11 And I think, collectively, we agree that, in the
12 almost 20 years that the owners groups have been in place,
13 the products have been highly effective in enhancing both
14 safety as well as the reliability of our plants.

15 So, I thank you on behalf of my colleagues here
16 for being able to make this presentation.

17 CHAIRMAN JACKSON: Well, I would like to thank the
18 owners group representatives and the NRC staff for an
19 informative and full briefing on the many diverse activities
20 and initiatives that the owners groups have contributed to.

21 In fact, I believe that your efforts have gone a
22 long way toward the resolution of a number of key safety
23 issues, and probably your success is due to your own
24 front-line experiences with design and operational issues at
25 the various licensee facilities and the fact that that

1 allows you to -- drawing on your own NSSS base, to provide
2 unique insights.

3 But I thought I would kind of give you three
4 points I think we all need to continue to focus on.

5 First is to act promptly, and that's on our side
6 and your side, on safety issues, including generic design
7 questions.

8 Secondly, which you're already focused on, but as
9 we go along, I think we have to continue to study and
10 resolve equipment aging issues.

11 And the third is to pursue risk-informed
12 initiatives vigorously but to pursue them with the knowledge
13 that the initiatives can end up -- can cut both ways.

14 That is to say that they can provide regulatory
15 relief where it's justified, and will, I believe, but it can
16 also result in increased regulatory oversight where
17 warranted and that it has to be a chips-fall-where-they-may
18 understanding.

19 But I encourage you to continue your efforts and
20 to actively participate along with our other stakeholders in
21 ensuring safe plant operations, and again, I thank you, and
22 unless my colleagues have any comments, we're adjourned.

23 [Whereupon, at 4:15 p.m., the meeting was
24 concluded.]

25

CERTIFICATE

This is to certify that the attached description of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING BY REACTOR VENDORS OWNERS
GROUPS --
PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Tuesday, September 15, 1998

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company

Transcriber: Tamara Shipp

Reporter: Mark Mahoney



**NUCLEAR STEAM SYSTEM SUPPLY (NSSS)
OWNERS GROUPS**

**September 15, 1998
Rockville, MD**

**Dr. Brian W. Sheron
Acting Associate Director for Technical Review
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission**

NSSS OWNERS GROUPS

- **Unique and Valuable Resource for Resolution of Technical Issues Applicable to a Specific Vendor Product Line**
- **Assist Utilities in Carrying Out Their Safety Function in an Effective and Efficient Manner**
- **Improvements in Operational Safety in a Cost-Effective Manner**
- **Contribute Operational Experience and Technical Competence to the Discussion of Problems**
- **Regulatory Response Group Capable of Quick Assessment of Emerging Safety Issues**
- **Direct Interface with the NRC**

NRC INTERFACE

- **NRR Project Manager Assigned to Each Owners Group to Serve as Focal Point for Actions**
- **Management Meetings are Typically Held on a Semi-Annual Basis with Owners Groups**
- **Senior NRR Management Attend (Office Director, ADT, Division Directors)**
- **Project Managers Provide Coordinated Review of Topical Reports and Vendor Specific Issues**
- **Efficient Utilization of Resources for NRC and Owners Groups**

THE ROLE OF INDUSTRY

- **DSI-13, “Role of Industry” - Encompasses Use of Standards and Industry Initiatives for Efficient Use of Regulatory Resources**
- **Meeting Planned with Stakeholders on Codes & Standards and Industry Initiatives as a Result of Recent Commission SRM**
- **Some Owners Group Initiatives have Proactively Avoided the Need for NRC Generic Communications - NRC Then Monitors and Reviews Industry Actions**

RECENT SUCCESSES

- **Generic Emergency Operating Procedures**
- **Standard Technical Specifications**
- **Severe Accident Management Guidelines**
- **ECCS Suction Strainer and Net Positive Suction Head Issues in General Electric Plants**
- **BWR Vessel and Internals Project**
- **Baffle Barrel Bolting Issue in Westinghouse Plants**
- **Vendor Audits**

SUMMARY

- **Owners Groups Have Been Doing a Good Job in Proactively Addressing Issues**
- **Sucesses Have Resulted in More Efficient Use of Licensee and Staff Resources, More Effective Solutions that Recognize Licensees' Unique Knowledge of their Plants, and Therefore Reduced Burden to Both Licensees and Staff**
- **Owners Groups are Encouraged to Continue to Proactively Address Regulatory and Safety Issues**



NSSS Owners Groups Chairmen

Presentations to NRC Commissioners

September 15, 1998



Owners Groups

B&WOG

BWROG

CEOG

WOG

- All domestic operating plants are members
- International utility participation
- NSSS Vendor participation
- Planned 1998 expenditures approx. \$35 Million

Objectives

- Resolve common regulatory issues through:
 - Committees
 - Regulatory Response Groups (RRGs)
- Address generic issues in a cost-effective manner
- Enhance communications
- Share “Best” practices

Industry Relationships

Owners Groups provide a vehicle for interacting with:

- NRC
 - ◆ Routine senior management meetings
 - ◆ Issue-specific meetings and correspondence
- NEI
 - ◆ Quarterly Joint Owners Group Chairmen’s meeting
 - ◆ NEI task force participation

Industry Relationships

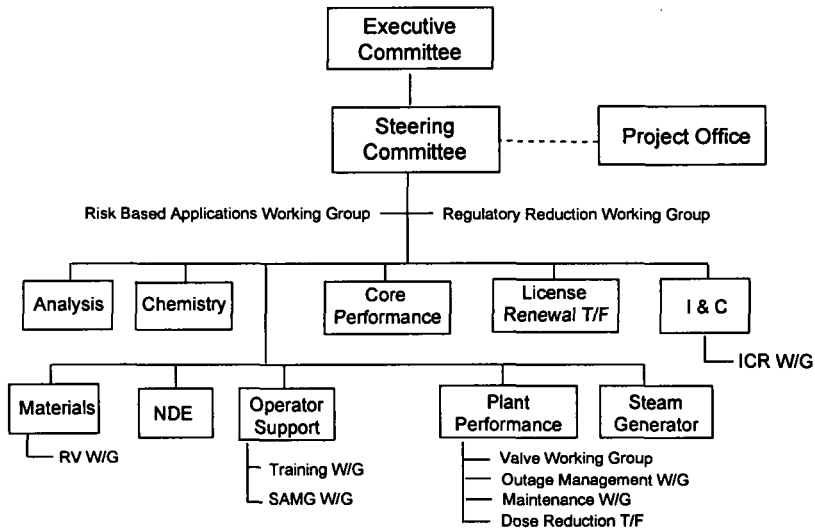
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 - ◆ Exchange of information through designated points of contact
- EPRI
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Babcock and Wilcox Owners Group

Presentation to NRC Commissioners

Bill Foster, Chairman
September 15, 1998

Organization



Selected Activities

Once Through Steam Generator Life Cycle Management:

- Alternate repair criteria for IGA & PWSCC
- SG integrity & internals generic letter responses
- SG tube pull project
- ECT production improvements

Selected Activities

Reactor Pressure Vessel Integrity:

- Irradiation of surveillance capsules
- Materials testing
- Reactor vessel material analyses in compliance with 10CFR50
- Support of industry development of analysis and test methods

Selected Activities

RCS Materials Activities:

- RV internals bolting
- CRDM nozzle PWSCC
- CRDM LifeX program
- Other alloy 600 issues

Fuel post irradiation examination effort

EOP deviation minimization effort

Titanium inhibitor applications

Recent Successes

CRDM Motor Tube Cracking

- Developed issue assessment plan
- Inspected 77 B&WOG plant motor tubes (three different types)
- Researched construction/material histories
- Completed preliminary safety assessment

Recent Successes

RV Internals Bolting Project

- Completed preliminary safety assessment
- Developed comprehensive six-year plan
- Identified inspection, repair, and replacement techniques
- Evaluating IASCC issues
- Developing potential internals inspection plan

Recent Successes

License Renewal Efforts

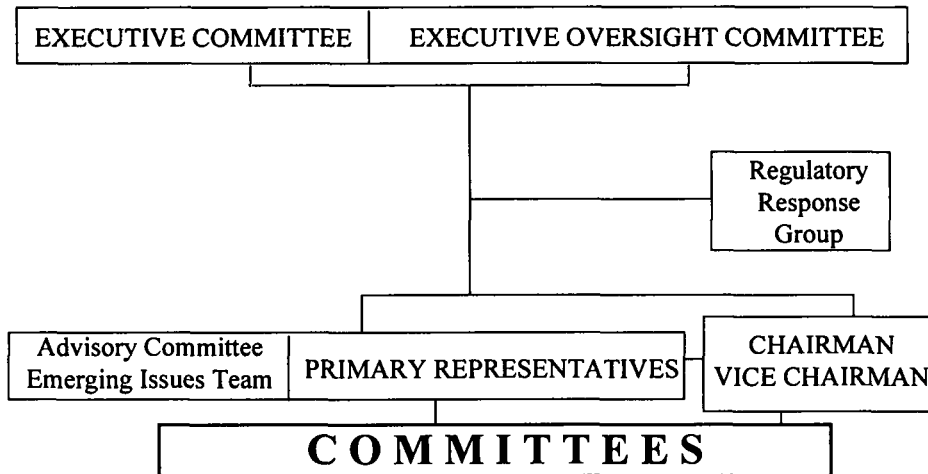
- Generic effort to support member applications
- RCS topical report approved by NRC
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- Reactor vessel topical report submitted to NRC
- Reactor vessel internals topical report submitted to the NRC

Boiling Water Reactor Owners Group

Presentation to NRC Commissioners

Tom Rausch, Chairman
September 15, 1998

Organization



Activities

- Active executive oversight/involvement
- Priorities aligned with key issues; NRC issues considered key issues
- Flexible processes
 - Generic and “Cafeteria-Style” participation
 - Subsets of owners frequently work together
- Emerging issues process
 - Accelerates action
 - Proactive philosophy

Selected Activities

Regulatory Issues

- ECCS Suction Strainers (Bulletin 96-03)
- NPSH Issues (GL 97-04)
- Containment Coatings
- Appendix R Circuit Analysis Issues
- MOV-Periodic Verification (GL 96-05)
- Integrated Risk-Based Regulation (MOV, Maint. Prioritization, RGs/SRP)
- PSA Certification
- License Renewal

Safety, Operations & Maintenance

- Emergency Procedure Guidelines
- Scram Frequency Reduction
- Outage Management
- Turbine Outage Optimization
- BWR Maintenance
- Radiation Protection/ALARA
- Reload Analysis & Core Management
- Reactivity Controls Review
- Refueling Platform
- Air-Operated Valves

Selected Activities

Materials & Inspections

- Improved water chemistry
- FW nozzle inspection relief re: NUREG 0619

Utility-Driven Cost Effective Initiatives

- Y2000 Issues
- GE turbine controls
- Large breaker maintenance
- Design-bases issues



Recent Successes

- ECCS suction strainer & related activities
- Joint Owners' Group (JOG) MOV-periodic verification
- Integrated risk-based regulation
- PSA certification



Recent Successes

- JOG Air-Operated Valves (AOVs) Program
- Scram solenoid pilot valve diaphragms
- BWR stability
- Severe Accident Management (SAM)
- Regulatory Guide 1.97

Success Highlights

High Exposure Channel Bow Issue

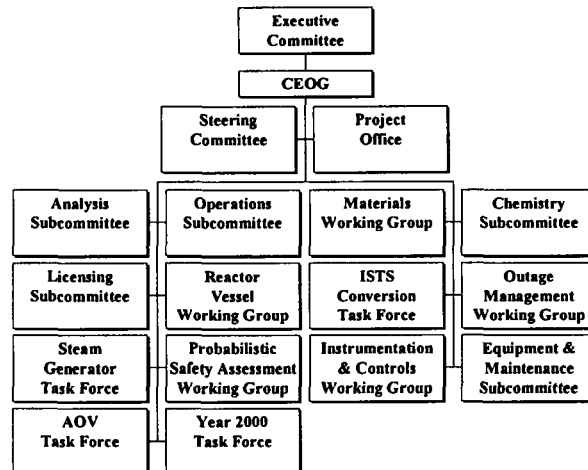
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- GE provided requested information to NRC and determined issue to be of low safety significance
- BWROG rapidly prepared monitoring program
- Continuing close communication with the Staff through issue closure

Combustion Engineering Owners Group

Presentation to NRC Commissioners

David Pilmer, Chairman
September 15, 1998

Organization



Selected Activities

- Steam generator axial crack alternate repair criteria
- Development of numerous risk-based products:
 - Revisions to technical specifications to extend allowed outage times for LPSI, SIT, EDG, HPSI, and CS
 - Developed configuration risk management program guidelines for members/industry
 - PSA certification program
- Safety assessment for ECCS sump strainer performance

Selected Activities


- Plant performance improvement program to identify largest contributors to plant unreliability and equipment failures
- Year 2000 readiness
- Outage readiness peer review program
- Development of risk informed IST and ISI programs
- Implementation of improved standard technical specifications
- Joint owners group program on AOV

Recent Successes

- Generic emergency procedures and severe accident management guidelines
- Development of improved standard technical specifications
- Numerous products to improve steam generator management including:
 - In-situ pressure testing guidelines
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Recent Successes

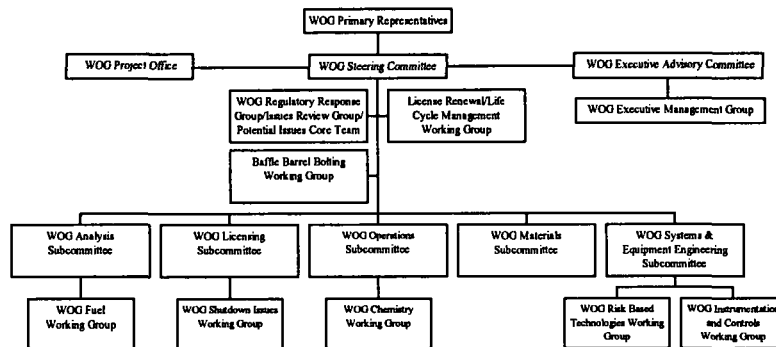
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Westinghouse Owners Group

Presentation to NRC Commissioners

Louis F. Liberatori, Jr., Chairman
September 15, 1998

1998 Westinghouse Owners Group Organization Structure



Selected Activities

Regulatory Related

- Part length CRDM housing issue
- High burn-up fuel
- RVHP Alloy 600 PWSCC
- Shutdown regulations
- Increased break opening time
- Core damage assessment methodology

Selected Activities

Regulatory Related, cont'd

- Post accident sampling requirements
- JOG MOV Program
- GL 92-01 Revision 1 Supplement 1 (RVI)
- Improved technical specifications
- SG internals degradation
- License renewal

Selected Activities

Safety/Performance Enhancements

- Risk informed applications for ISI & IST
- PSA peer review
- Baffle barrel bolting
- ERG/ARG maintenance
- Fracture toughness / master curve
- RPVDATA database

Selected Activities

Safety/Performance Enhancements, cont'd

- Reactor coolant chemistry
- GOTHIC shutdown model
- Guide tube replacement pin
- ASIC based RPS module
- Pressurizer thermal transients
- Joint Owners Group AOV Program

Recent Successes

- Regulatory Response Group
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Closing

- Broad focus including key regulatory issues
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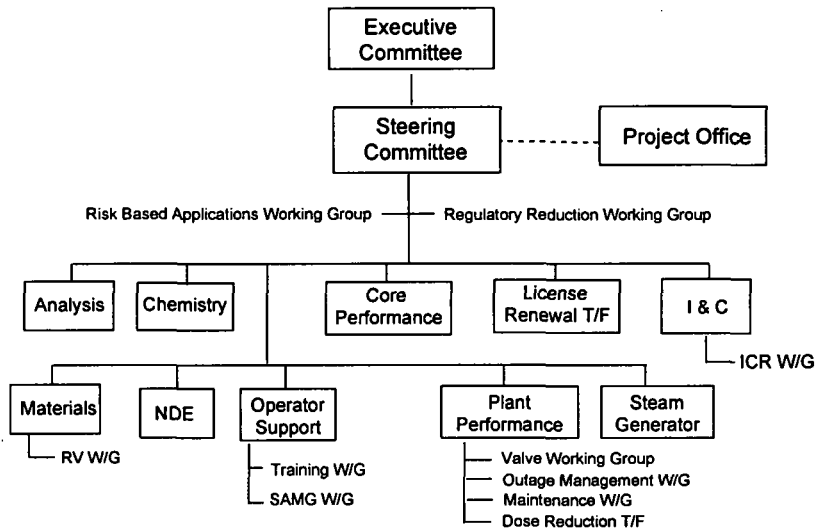
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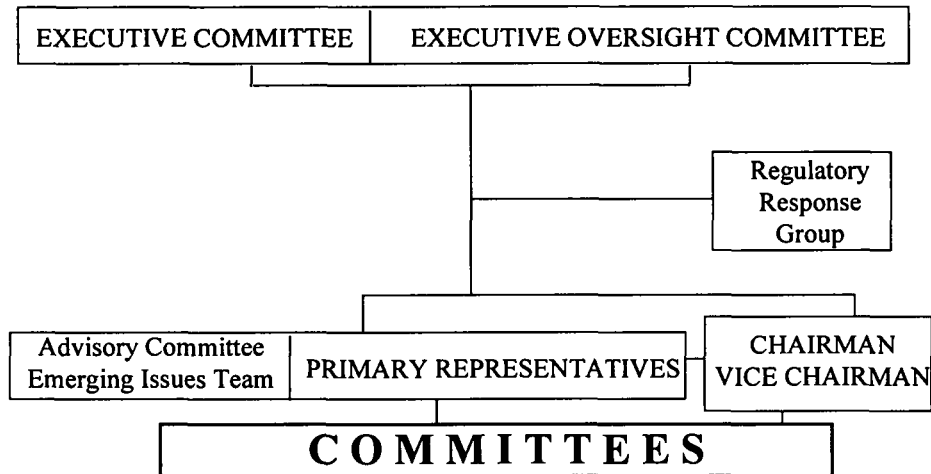
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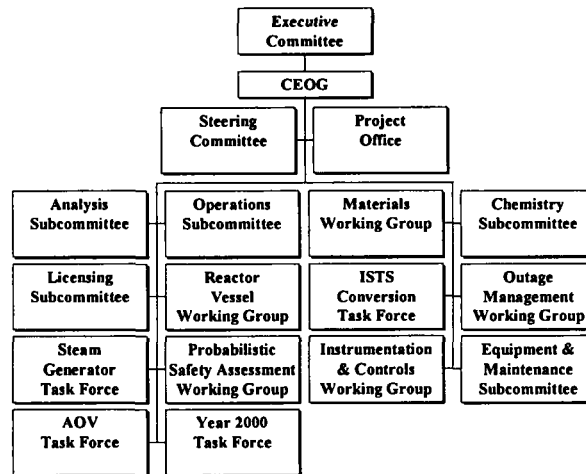
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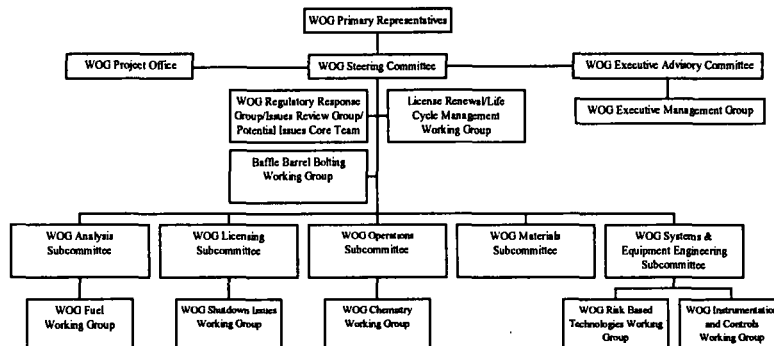
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Annette -
Pls handle

~~Done~~ John
Online Release to PDR

Van attach to
Transcript 9/15:
Commission meeting
Thanks

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

91

PAPER NUMBER: CRC-98-0974

LOGGING DATE: Oct 21 98

ACTION OFFICE: SECY

AUTHOR: D.F. PILMER

AFFILIATION:

ADDRESSEE: CHAIRMAN JACKSON

LETTER DATE: Oct 15 98 FILE CODE:

SUBJECT: DIRECT MEASUREMENT OF FRACTURE TOUGHNESS

ACTION: Appropriate

DISTRIBUTION: CHAIRMAN, COMRS, EDO

SPECIAL HANDLING: NONE

CONSTITUENT:

NOTES: OCM #15278---MAKE PART OF RECORD OF SEPTEMBER
15, 1998 COMMISSION MEETING

DATE DUE:

SIGNATURE:
AFFILIATION:

DATE SIGNED:



COMBUSTION ENGINEERING OWNERS GROUP

ABB Inc.	Baltimore Gas & Electric Calvert Cliffs 1, 2	Entergy Operations Inc. ANO 2 WSES Unit 3	Korea Electric Power Corp. YGN 3, 4 Ulchin 3, 4	Omaha Public Power District Ft. Calhoun
Arizona Public Service Co. Palo Verde 1, 2, 3	Consumers Energy Co. Palisades	Florida Power & Light Co. St. Lucie 1, 2	Northeast Utilities Service Co. Millstone 2	Southern California Edison SONGS 2, 3

CEOG-98-357
October 15, 1998

The Honorable Shirley A. Jackson, Chairman
United States Nuclear Regulatory Commission
Washington, DC 20555

Subject: Direct Measurement of Fracture Toughness

Dear Chairman Jackson:

During my presentation on September 15, 1998, you asked about the "direct measurement of fracture toughness." The following is a more complete response than I was able to provide at that time.


The direct measurement of fracture toughness is accomplished by taking Charpy V-notch (CVN) specimens specially prepared with a crack in the root of the notch and measuring deflection under load which causes the crack to grow. A fracture mechanics analysis of crack growth calculates the material's fracture toughness. Statistical analysis of the results of several measurements yields a median fracture toughness value, along with lower tolerance bounds for prescribed confidence levels. The median value is used to anchor the master curve that describes the variation of toughness with temperature. This process is termed the Master Curve Approach (MCA) for testing reactor vessel specimens and is an outgrowth of NRC funded research in the field of fracture mechanics.

The present, indirect approach for estimating fracture toughness employs Charpy impact energy and drop weight measurements to establish a reference temperature, RT_{NDT} , which is subsequently adjusted using Charpy impact tests on irradiated surveillance specimens. The adjusted RT_{NDT} is used to anchor the ASME Code K_{IC} curve. Both the current and master curve approaches rely on measurements to anchor a toughness curve; the current approach uses Charpy energy, the MCA uses fracture toughness. The master curve approach promises significant improvement in knowledge of vessel material embrittlement, more accurate determination of margin of safety, and longer vessel life.

For the past several years, the CEOG Reactor Vessel Working Group has been collecting fracture toughness data measured by the master curve approach for material specimens associated with the population of reactor vessels constructed by Combustion Engineering. The other Owners Groups have also been working toward developing data

using the master curve approach. Recently, responsibility for overall coordination has been vested in the newly established EPRI PWR Materials Reliability Program (MRP). Plans for fully developing and implementing this new MCA technology will be included in a presentation to the NRC staff in the near future by the EPRI MRP executive committee.

Respectfully,

A handwritten signature in black ink, appearing to read "D. F. Pilmer", written in a cursive style.

D. F. Pilmer, Chairman

cc: The Honorable Nils J. Diaz, Commissioner, NRC
The Honorable Edward McGaffigan, Jr., Commissioner, NRC
Mr. L. Joseph Callan, Executive Director for Operations, NRC
Mr. James M. Levine, Chairman, CEOG Executive Committee
Mr. Gordon C. Bischoff, Project Manager, ABB
Mr. Ralph Beedle, Sr. VP and Chief Nuclear Officer, NEI
Mr. Robin Jones, VP Nuclear Power Group, EPRI



COMBUSTION ENGINEERING OWNERS GROUP

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Korea Electric Power Corp.
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Omaha Public Power District
Ft. Calhoun

Arizona Public Service Co.
Palo Verde 1, 2, 3

Consumers Energy Co.
Palisades

Florida Power & Light Co.
St. Lucie 1, 2

Northeast Utilities Service Co.
Millstone 2

Southern California Edison
SONGS 2, 3

October 15, 1998

CEOG-98-373

The Honorable Nils J. Diaz, Commissioner
United States Nuclear Regulatory Commission
Washington D.C. 20555

Dear Commissioner Diaz:

On behalf of the Combustion Engineering Owners Group (CEOG), I was pleased to meet with the Commission on September 15th to discuss CEOG activities and issues important to our members.

You asked that I provide the highest priority regulatory issue that our members would like to see resolved at this time. We have considered a number of possibilities and identified implementation of risk informed regulation as a high priority.

The CEOG is the pilot for use of risk analysis in modifying Technical Specifications and currently has five topical reports under review by the Staff. Additional topical reports are in progress. Priority review of these applications which use risk informed decision making, would mutually benefit NRC and industry objectives through improvements important to safety.

As mentioned in my presentation, the periodic meetings by the CEOG Executive Committee and the NRC senior staff will continue to be an effective vehicle for discussing the many regulatory issues that are most important to our members.

Respectfully,

D. F. Pilmer, Chairman

cc: The Honorable Shirley A. Jackson, Chairman, NRC ✓
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CHAIRMAN REC'D

98 OCT 19 AM 10:21