

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON PROGRESS OF DESIGN CERTIFICATION  
REVIEW AND IMPLEMENTATION

Location: ROCKVILLE, MARYLAND

Date: JUNE 2, 1993

Pages: 88 PAGES

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

- - - -

BRIEFING ON PROGRESS OF DESIGN CERTIFICATION  
REVIEW AND IMPLEMENTATION

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

Wednesday, June 2, 1993

The Commission met in open session,  
pursuant to notice, at 10:00 a.m., Ivan Selin,  
Chairman, presiding.

COMMISSIONERS PRESENT:

IVAN SELIN, Chairman of the Commission  
KENNETH C. ROGERS, Commissioner  
JAMES R. CURTISS, Commissioner  
FORREST J. REMICK, Commissioner  
E. GAIL de PLANQUE, Commissioner

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STAFF SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

WILLIAM C. PARLER, General Counsel

JAMES TAYLOR, Executive Director for Operations

THOMAS MURLEY, Director, NRR

WILLIAM RUSSELL, Associate Director for Inspection and  
Tech. Assessment, NRR

DENNIS CRUTCHFIELD, Associate Director, Advanced  
Reactors and License Renewal

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

10:00 a.m.

CHAIRMAN SELIN: Good morning, ladies and gentlemen.

This morning the Commission will receive its periodic briefing from the staff on the progress of design certification reviews and implementation. I'm actually so interested in this topic I'm considering drinking decaf.

A number of activities have progressed significantly since we were last briefed by the staff on this effort. The Commission considers the design certification issues to be of the highest priority. We look forward to hearing a status report on where the staff stands with regard to the certification for both the evolutionary and advanced light water reactor designs.

Do any of the follow Commissioners have anything to say?

Well, Mr. Taylor, without further adieu.

MR. TAYLOR: Mr. Chairman, with me at the table are Tom Murley, Bill Russell and Denny Crutchfield from NRR, and there will be two principal presenters. First Denny and then Bill has some areas he will cover.

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1 Denny, will you start, please?

2 MR. CRUTCHFIELD: Good morning.

3 We last briefed you in November of 1992,  
4 so we're about six months or seven months beyond where  
5 we usually do that. So, it's time for another one.

6 (Slide) Since our last briefing, if I  
7 could have the first slide, please, there have been a  
8 number of changes. We have accepted the Westinghouse  
9 AP-600 design for review. We've also accepted the  
10 SBWR for review and we have requests for additional  
11 information going out on both of those projects. The  
12 SBWR was just recently accepted on the 27th of May.

13 The three projects of most interest right  
14 now for us are the ABWR and the CE System 80+, which  
15 are both the evolutionary designs, as well as the  
16 passive utility requirements document for EPRI. We've  
17 been working on those, along with industry, for the  
18 past five years and we're kind of coming to the end  
19 point for all of those. We're at the point now where  
20 we are preparing the final safety evaluation report  
21 for EPRI and that document should be up to you within  
22 the next month or so. The FSERs for both the ABWR and  
23 the CE System 80+ should be up to you in the next six  
24 or eight months, according to the schedules.

25 A lot of work has been put into them.

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1 There's a lot of effort going on. We're resolving  
2 open items with the vendors and developing the ITAAC  
3 with the vendors. So, those things are moving along  
4 pretty well, we think.

5 We still have recommendations out to you  
6 in SECY-93-087, which we sent you on the 2nd of April.  
7 This deals with the policy issues associated with the  
8 evolutionary and the passive designs. There are about  
9 20 of those. What we are doing for the evolutionary  
10 designs is assuming the position that the staff  
11 provided in the recommendation and doing the review  
12 with that assumption in place. So, the SERs that you  
13 will be seeing will reflect the staff's  
14 recommendations.

15 COMMISSIONER REMICK: Denny, on that, if  
16 I recall at the meeting we had with the staff on 087,  
17 there was a mention of an EPRI letter in early May.  
18 If I recall, the staff was going to provide that to  
19 the Commission. I haven't seen it yet and that's  
20 holding up my consideration of 087.

21 MR. TAYLOR: We'll get that to you.

22 MR. CRUTCHFIELD: We'll be sure that you  
23 get that.

24 COMMISSIONER REMICK: Okay. Am I correct  
25 there was an EPRI --

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1 MR. CRUTCHFIELD: I believe there was May  
2 7th or so.

3 MR. RUSSELL: It's also correct that there  
4 are comments coming in from some of the other vendors  
5 as well.

6 DOCTOR MURLEY: Okay.

7 MR. CRUTCHFIELD: We also included in that  
8 document several key policy issues for the passive  
9 design as well as there are three issues for the  
10 passive design for which we have not gotten you  
11 positions yet. This is the reg. treatment of non-  
12 safety systems, the emergency preparedness relief that  
13 we understand EPRI wants to seek for the passive  
14 designs, as well as the source term. As we get into  
15 that passive review effort also, there may be  
16 additional policy items that come forward and we'll  
17 bring them to you for consideration.

18 (Slide) If I could have the next slide,  
19 please.

20 The major schedule milestones are shown on  
21 this next slide and it indicates where we intend to be  
22 and what we've given you in SECY-93-097. Now, those  
23 assumptions include timely high quality submittals  
24 from the applicant. They assume the availability  
25 resources on the part of the staff that things don't

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1 stretch out so we're trying to fit everything in the  
2 appropriate window, and we can continue to do that,  
3 and it also includes a resolution of those policy  
4 issues at a relatively early stage. So, if there is  
5 any changes, we can factor that in promptly and get  
6 that taken care of.

7 CHAIRMAN SELIN: Mr. Crutchfield, I'd like  
8 you to address those first two assumptions. Not  
9 necessarily at this point, but someplace along the --

10 MR. CRUTCHFIELD: Okay. I think Bill is  
11 going to talk about the status of the submittals.

12 MR. RUSSELL: I'm going to be covering  
13 that.

14 CHAIRMAN SELIN: The Commission, of  
15 course, will show wisdom on a timely basis, so we  
16 don't have to worry about that. But the first two are  
17 things we'd like to hear about.

18 MR. CRUTCHFIELD: Sure.

19 There is no margin in there. We didn't  
20 provide any margin or contingency in the SECY-93-097  
21 for some of the items. In other words, we're looking  
22 at a point now where we have five major review  
23 activities underway at the same time right now and  
24 this is not something we had anticipated being in.  
25 So, this is going to do some moving around of

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1 resources necessary to cover it all.

2 We were hoping not to have a bunch of  
3 interactions with the vendors on these things. In  
4 other words, we're hoping to sit down at one time, get  
5 resolution of the issue and have it resolved and go  
6 forward and not have to interact back and forth on a  
7 number of situations.

8 CHAIRMAN SELIN: Well, since you've gone  
9 into that, do you have adequate resources now to meet  
10 these schedules, assuming that you get reviews -- I  
11 mean inputs from the vendors of the expected quality  
12 at the expected schedule?

13 MR. CRUTCHFIELD: Yes, I believe we do.

14 CHAIRMAN SELIN: Even with all five coming  
15 together?

16 MR. CRUTCHFIELD: With all five coming,  
17 it's going to be a puzzle to try and make sure we get  
18 everything taken care of. Some areas like PRA and  
19 severe accidents, we're tight in those areas and if we  
20 get any slips it's going to directly impact some of  
21 the other reviews. No question about that.

22 MR. RUSSELL: Maybe we can come back to  
23 that after we've gone through the brief.

24 CHAIRMAN SELIN: I didn't raise it, he  
25 repeated it.

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1 COMMISSIONER REMICK: Denny, before  
2 leaving that slide, for example on the AP-600 you show  
3 applicants' responses to the request for additional  
4 information in September. If I recall in 93-097 you  
5 indicated the staff would have their final set of  
6 questions this month. Are you going to meet that  
7 schedule?

8 MR. CRUTCHFIELD: We will be close. As I  
9 said, in some areas with PRA and severe accidents,  
10 it's going to be a little tighter for us to try and  
11 meet that. We may miss that by a few weeks, but  
12 hopefully since we've gotten a number of questions out  
13 to Westinghouse early, they will have gotten them  
14 behind them, so when these show up it will be easier  
15 for them to respond and they won't take the three  
16 months necessary.

17 COMMISSIONER REMICK: Okay. And if I  
18 recall, on the SBWR final RAIs in October you  
19 indicated, do you expect that you'll be able to meet  
20 that?

21 MR. CRUTCHFIELD: With the delayed  
22 acceptance by the staff, we've put the ABWR review  
23 ahead of the SBWR at GE's request. So, wherever  
24 resources are necessary, we support the ABWR at the  
25 expense of the SBWR. So, there may be some impacts on

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1 the SBWR.

2 COMMISSIONER REMICK: Okay.

3 DOCTOR MURLEY: I could add a point,  
4 Commissioner, that we're still resolving this question  
5 of regulatory treatment of non-safety systems and that  
6 could lead to some more questions and dialogue with  
7 Westinghouse. In fact, I think it will, with both  
8 Westinghouse and GE.

9 MR. RUSSELL: There are also review areas  
10 that are heavily impacted by ITAAC reviews and other  
11 things which I'll discuss in a moment. So, there may  
12 be some particular review areas where the questions  
13 will be coming out later. As Denny said, we did get  
14 quite a number out already because we anticipated  
15 some, but there will be continuing review in some  
16 areas. There may be questions, for example, from the  
17 testing program. The testing program is not going to  
18 be completed until December. If we haven't seen the  
19 test results until December, it's very hard for us to  
20 generate questions at this point in time.

21 COMMISSIONER REMICK: No, I realize there  
22 could be follow-on, but if you get most -- maybe I  
23 shouldn't call it final. That's what you say I think  
24 in 097. But most of your questions -- now, I don't  
25 want to anticipate your slide, but I thought you were

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1 going to tell us later on that on May 20th you came to  
2 resolution on that.

3 MR. RUSSELL: Yes. I'll cover that.

4 COMMISSIONER REMICK: Okay. All right.  
5 But you're saying that you still might have some  
6 questions that go beyond that June date?

7 MR. CRUTCHFIELD: We came to resolution on  
8 the overall policy. Now we've got to work with  
9 Westinghouse to make sure the implementation is  
10 satisfactory.

11 COMMISSIONER REMICK: Okay.

12 COMMISSIONER ROGERS: Just before we move  
13 on, there were some questions raised by ACRS on 5 --  
14 or five questions raised by them on fire protection,  
15 hydrogen and core debris coolability and things of  
16 that sort. Where does that stand, closure on those?

17 MR. CRUTCHFIELD: We have responded to the  
18 ACRS.

19 COMMISSIONER ROGERS: You consider that  
20 those are closed now or --

21 MR. RUSSELL: We have three issues that  
22 were ACRS questions that we're still tracking that I  
23 can cover when we get to the severe accident portion  
24 and I'll tell you what those are.

25 COMMISSIONER ROGERS: Okay.

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1 MR. CRUTCHFIELD: Okay. The remaining  
2 milestones that we have for the ABWR and CE System 80+  
3 include the resolution of the open issues that we have  
4 out there currently. We're running about 40 or 50  
5 open items with General Electric Company and  
6 Combustion Engineering. The number of open issues is  
7 still substantially higher. After they have been  
8 resolved we'll get the final ITAAC in, the staff will  
9 review those ITAAC. In the meantime, Combustion and  
10 GE will be working to put together their final  
11 certified verified document where they will assure  
12 that the SSAR, the ITAAC, design control document, et  
13 cetera, are all consistent with each other and there's  
14 no inconsistencies between them.

15 We then also will be beginning to do our  
16 internal, if you will independent quality review. The  
17 task force that looks at the ITAAC that Jim Sneizek's  
18 group put together that said we ought to -- that was  
19 one of their recommendations and that's one of the  
20 things we're going to follow-up with. Finally, we  
21 have the ACRS full committee meeting and subcommittee  
22 meeting. We have the Commission to brief and then we  
23 will publish the FSER. So, there's a lot of work  
24 ahead of us, but we think things are moving and we're  
25 making substantial progress.

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1 (Slide) If I could have the next slide,  
2 please.

3 In addition to the technical matters that  
4 are going on along with these certification reviews,  
5 there are a number of procedural and admin issues that  
6 are going on. OGC has forwarded a paper on the  
7 rulemaking procedures. The Commission has spoken on  
8 that and those things will be moving forward.

9 We've been trying to get public input on  
10 what the design certification form and content ought  
11 to be. So, we're going to go out and ask the public  
12 that. We're going to put a Federal Register notice  
13 out and seek their views as to what they think ought  
14 to be included. We do have a May 25th letter from  
15 NUMARC with their comments on that that we will also  
16 consider.

17 One of the areas that's caused some  
18 concern out there in industry is the so-called design  
19 control document. We are planning to get some  
20 guidance out to the vendors as to what our  
21 understanding and definition of that document would  
22 be. In general it's the SSAR minus the proprietary  
23 information, minus what is called secondary  
24 references. In some cases we're going to have to look  
25 at the probabilistic risk assessment. I don't think

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1 we want to include the PRA in there, but the insights  
2 that come out of the PRA probably ought to be  
3 considered in that design control document. So, we're  
4 intending to get some guidance out to the industry  
5 within the next month or so.

6 COMMISSIONER REMICK: In light of the  
7 NUMARC May 25th letter that you referred to, does the  
8 staff change any of their recommendations in 287 or  
9 287A?

10 MR. CRUTCHFIELD: We haven't fully  
11 digested it yet.

12 COMMISSIONER REMICK: Since you're waiting  
13 for our vote, how should I interpret that? Shall we  
14 wait for you to digest?

15 MR. CRUTCHFIELD: If you'd like us to get  
16 your comments back on that, we'll be happy to or we can  
17 answer the NUMARC letter and send you copies of what  
18 we say back to NUMARC.

19 COMMISSIONER REMICK: That seems like a  
20 reasonable approach. I don't want to delay you, but  
21 at the same time if you are considering changing your  
22 positions or recommendations, it would be helpful to  
23 know.

24 MR. CRUTCHFIELD: We'll do that.

25 COMMISSIONER CURTISS: Your proposal at

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1 this point though is to take the Commission's actions  
2 on 287 and 287A and put that out for further public  
3 comment in some form before those positions would be  
4 finalized?

5 MR. CRUTCHFIELD: Yes.

6 COMMISSIONER CURTISS: My only thought is  
7 that's not what you recommend in 287A. I don't agree  
8 or disagree with it, but I want to make sure that what  
9 you're not proposing is given the interest in the  
10 subject that we'd have some sort of public comment  
11 process through a Federal Register notice on the --

12 MR. CRUTCHFIELD: On the form and content.

13 COMMISSIONER CURTISS: -- what would be  
14 the preliminary Commission decisions on 287 and 287A,  
15 form and content for the design certification rule.

16 MR. CRUTCHFIELD: Right. We will lock  
17 this in when we prepare the ABWR one. We're just  
18 trying to get a leg up to make sure we understand  
19 everybody's views and make sure we've concluded and  
20 included the things that the Commission wants us to  
21 include in there.

22 COMMISSIONER CURTISS: Is it your  
23 intention then to treat the NUMARC comments as part of  
24 that process and respond to those?

25 MR. CRUTCHFIELD: Our initial view of the

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1 NUMARC comments is we don't see any need to change  
2 anything from what we've proposed to the Commission.  
3 We feel comfortable with what we've said. We  
4 understand their comments, but we don't think there's  
5 a need to change our position.

6 COMMISSIONER CURTISS: Okay.

7 DOCTOR MURLEY: I think what we should do  
8 is formally reply to them and then send a copy to the  
9 Commission so you have their views.

10 COMMISSIONER CURTISS: Okay.

11 DOCTOR MURLEY: I'll commit to do that  
12 fairly quickly.

13 COMMISSIONER CURTISS: I'm wondering, in  
14 view of the public comment process that you have in  
15 mind whether in voting on the paper, and I have not  
16 voted on it yet, the Commission should wait for  
17 whatever input or response you have to the NUMARC  
18 comments before voting or go ahead and vote on this,  
19 recognizing that we have the NUMARC comments now and  
20 then put this out for comment or just what the  
21 chronology is here of your response. Will you be  
22 responding to NUMARC here in the next couple weeks?

23 MR. CRUTCHFIELD: We hope to be responding  
24 to them in the next couple of weeks, yes.

25 CHAIRMAN SELIN: I'm sorry, I'm sort of

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1 confused now. I thought I understood what the process  
2 was and it looks to me as if we're giving some people  
3 a chance to comment in advance and then everybody  
4 afterwards. What is it --

5 MR. CRUTCHFIELD: Well, we put the  
6 document out as a draft document initially and we put  
7 it out as a Commission paper. Then, in accordance  
8 with the guidance, we made it publicly available.

9 CHAIRMAN SELIN: Right.

10 MR. CRUTCHFIELD: Now, when we make it  
11 publicly available, typically the industry gets it but  
12 not necessarily those groups that are intervenor  
13 groups. They traditionally read the Federal Register.

14 CHAIRMAN SELIN: Right.

15 MR. CRUTCHFIELD: So, in an attempt to try  
16 and get to them now, we want to take that document and  
17 put it in the Federal Register to solicit their views,  
18 if they have any also. Whether we will get any or  
19 not, I don't know.

20 COMMISSIONER CURTISS: Just to be  
21 precise --

22 MR. CRUTCHFIELD: The question is whether  
23 we get Commission approval before or after we do that.

24 CHAIRMAN SELIN: My view is the Commission  
25 ought to vote on what we have, put it out, take

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1 account of NUMARC comments and intervenor comments at  
2 the same time because otherwise in effect we would be  
3 giving the benefit to those who are better equipped to  
4 go to the PDR and make comments at this point. It's  
5 very important that we do all these --

6 MR. CRUTCHFIELD: I guess the staff view  
7 is we would not like to delay getting this thing out  
8 there and in place, if you would.

9 CHAIRMAN SELIN: So, in effect, you'd be  
10 asking the Commission for approval to publish for  
11 comment rather than a final statement?

12 MR. CRUTCHFIELD: Correct.

13 CHAIRMAN SELIN: I didn't understand that,  
14 but that's fine.

15 MR. CRUTCHFIELD: If there are no further  
16 questions, I'd like to turn it over to Bill Russell  
17 now who will talk about some of the issues and  
18 approaches that we're using for closure of open issues  
19 and final resolution of the process.

20 CHAIRMAN SELIN: Before we go to that, I'd  
21 like to ask the General Counsel a question and the EDO  
22 the same question.

23 The schedule that you now see for  
24 establishing the form and content, in other words  
25 getting Commission approval, publish the Federal

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1     Register notice, getting comment from the public,  
2     doing the next steps to get the rule all established,  
3     are they consistent with the overall schedules that  
4     we've set for the Part 52 process?

5             MR. PARLER: I wouldn't be able to answer  
6     that question at this time because I didn't know until  
7     I just heard it that we were going to go out for  
8     comment on the 287 and the 287A. I'll have to get  
9     back to you, Mr. Chairman.

10            I may say one thing. A number of the  
11     items in this NUMARC letter of May the 25th that has  
12     been referred to are legal type and process type  
13     issues. We are trying to arrange, along with the  
14     staff, for a briefing of the staffs of the offices as  
15     early as we can this week so that you will have some  
16     sort of a better idea as to whether the recommendation  
17     would have to be changed.

18            CHAIRMAN SELIN: Mr. Taylor, just to save  
19     a little time, I think it's fair to say given the  
20     Commission's lack of complete understanding of what  
21     the process is from here and on the General Counsel's  
22     expression that he's also a little bit surprised, I  
23     think it's fair that the Commission -- I certainly  
24     would like to see just a memo that says, "Here is the  
25     process that we have in mind to get from here to the

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1 final rules on form and content, with some estimated  
2 schedule."

3 MR. TAYLOR: In order that it supports the  
4 ABWR.

5 CHAIRMAN SELIN: Well, without trying to  
6 constrain what dates come out, I'd just like, you  
7 know, to set out what the steps are. We do something,  
8 public comments, what the next steps are, what the  
9 schedule is as an informational memo. Not requiring  
10 that it make a certain schedule or not make a certain  
11 schedule.

12 MR. TAYLOR: We'll provide that, sir.  
13 We'll work with the General Counsel.

14 MR. RUSSELL: (Slide) If I could have the  
15 next slide, please.

16 I've started the process of issuing about  
17 every two to three months to the divisions and the  
18 technical staff the priorities for resources as it  
19 relates to the advanced reactor reviews. In the last  
20 memo that was issued, the priority is to closure of  
21 the open items on the ABWR and the System 80 design  
22 reviews. Currently on ABWR we have approximately 40  
23 to 42 open items, of which 21 have the potential for  
24 impacting the ITAAC and I'll cover that more in a  
25 moment. We've actually gone through a process where

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1 we've had division level meetings to review the status  
2 of each open item, what it would take to close and  
3 this reflects elimination of duplication when issues  
4 were open in more than one review area. We're going  
5 to be going through a similar process on the  
6 Combustion Engineering design.

7 The next priority is completion of the  
8 final safety evaluation inputs on the EPRI passive  
9 utility requirements document.

10 Third is to be capable of conducting a  
11 parallel ABWR and System 80+ ITAAC review and the SER  
12 preparation as it relates to the ITAAC.

13 CHAIRMAN SELIN: Could I stop you? I  
14 assume what that means is that you'll be able to  
15 conduct independent reviews.

16 MR. RUSSELL: That's correct.

17 CHAIRMAN SELIN: But that if one is ahead  
18 of the other --

19 MR. RUSSELL: Ah-ha.

20 CHAIRMAN SELIN: -- that neither one --

21 MR. RUSSELL: I anticipate that there is  
22 right now about a one month lead --

23 CHAIRMAN SELIN: Well, I'm not asking you  
24 for speculation at the schedule. All I'm saying is  
25 that if either of them advances compared to the other,

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1 the second one would not be held up dependent on --

2 MR. RUSSELL: That is correct.

3 CHAIRMAN SELIN: So, I'm really not trying  
4 to play games with your words, but --

5 MR. RUSSELL: I'll cover that in more  
6 detail.

7 CHAIRMAN SELIN: -- it's not parallel but  
8 independent that you're talking.

9 MR. RUSSELL: We have actually -- and I'll  
10 cover it in some detail. The process that we've put  
11 in place to accomplish this, but if the ABWR, for  
12 example, starts earlier because they are closer on  
13 completing the closed items, if that review progresses  
14 well, it could be finished earlier. If that review  
15 runs into trouble, we have resources available to  
16 complete the CE review. So, it will be definitely a  
17 function of the quality of the information received  
18 from the vendor and it will not be for a lack of staff  
19 resources. So, we have the capability to do the two  
20 in parallel if it occurs that way or to do them with  
21 some significant overlap.

22 CHAIRMAN SELIN: Okay.

23 MR. RUSSELL: The next priority, because  
24 of the importance, is to ensure that there is high  
25 priority on the vendor testing for the passive plant

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1 designs. This testing is ongoing this summer through  
2 December and we need to be in a position to understand  
3 the test results, observe them and factor that into  
4 the review.

5 COMMISSIONER ROGERS: Is everything on  
6 schedule there for those tests with respect to --

7 MR. RUSSELL: I believe the schedule still  
8 shows them --

9 COMMISSIONER ROGERS: -- hardware and so  
10 on and so forth?

11 MR. RUSSELL: Yes. There was a visit.  
12 Tom actually went to SPES and some of the other  
13 facilities and the report I had back is it still looks  
14 favorable for completing the testing by December of  
15 '93. So, we are gearing up to complete those reviews  
16 parallel with that testing work.

17 COMMISSIONER REMICK: How is the Oregon  
18 State facility coming along?

19 MR. RUSSELL: I'll have to get back to  
20 you. I do not have that information.

21 COMMISSIONER REMICK: Okay. All right.

22 MR. RUSSELL: We're also developing a  
23 request for additional information on design features  
24 associated with the passive plants as resources are  
25 available.

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1 (Slide) If I could have the next slide,  
2 please.

3 What I've done is I've combined what are,  
4 in the staff's views, the significant issues that are  
5 open, and these have been grouped, that apply to both  
6 the ABWR review and the CE 80+ review. The PRA is  
7 still open on both. We are getting close to  
8 completion on the ABWR. There are a number of items,  
9 on the order of 6, that are open, some of which  
10 clearly impact the ITAAC, particularly what I will  
11 characterize are the PRA insights about important  
12 design features to make sure that those design  
13 features are incorporated into ITAAC and that clearly  
14 cuts across systems and across design.

15 In the severe accident closure area there  
16 are a number of issues which are still open. I had  
17 misspoken earlier. We have two issues that the ACRS  
18 had raised that we are tracking out of a total of nine  
19 that are open in the severe accident closure area.  
20 One related to some concerns the ACRS raised on  
21 suppression pool pH control and the other on the  
22 effects of the grading staging within the containment  
23 on the progression of fuel coolant interaction or core  
24 melt.

25 Other issues, the ones that are fairly

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1 significant, we have some details remaining open on  
2 containment sump design and containment bypass. The  
3 third area, which is one that the staff has initiated,  
4 is to gain insights regarding sensitivity. We are  
5 doing our own MELCOR analyses and we are going to be  
6 comparing those to the vendors and we hope to have  
7 some of those preliminary results to review with  
8 General Electric starting next week. We actually have  
9 meetings to try and reach closure on these nine items  
10 on severe accidents, on PRA, next week.

11 COMMISSIONER REMICK: On the PRAs, I have  
12 the impression, right or wrong, that the PRAs are not  
13 being used in the way that I thought was intended that  
14 the PRAs would be used during the design to help  
15 identify possible accident initiators and so forth and  
16 therefore design around those. I get the impression  
17 that PRAs are being done after design is completed.  
18 Am I correct or incorrect? Now, I realize that even  
19 though you do an early PRA to help you in a design,  
20 that eventually it must be modified according to the  
21 final design and equipment and things like that are  
22 installed. But I'm talking about its use as a design  
23 tool.

24 MR. RUSSELL: I agree with the comment,  
25 but it's not a black and white case. Clearly there

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1 are a lot of insights that you have in making design  
2 decisions. The PRA has been used throughout the  
3 process and we are attempting to gather information  
4 now from the licensee -- the applicants to basically  
5 document what kinds of insights, what kinds of design  
6 changes were made, how was the PRA used to influence  
7 the design and that will be a part of the report.

8 In addition, we're very interested in  
9 importance measures. Sensitivity studies have been  
10 done which identify the key insights from the PRA as  
11 to what are the important features so that those can  
12 be captured.

13 COMMISSIONER REMICK: Is it possible the  
14 reason you're having difficulty getting the  
15 documentation that the PRA wasn't used in that manner?

16 MR. RUSSELL: It was rebaselined late.  
17 It's very hard to say in some cases whether it was an  
18 insight from the PRA that caused the design change or  
19 whether it was from operating experience that caused  
20 the design change or it was from the engineering  
21 designer. So, it's very difficult in some cases to  
22 attribute the reason for a change. What we are trying  
23 to do is to get it to be used earlier and I think I  
24 would characterize a major lesson learned at this  
25 point from the evolutionary reviews that we've got to

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1 do better on the passive designs is that the PRA and  
2 the severe accident closure issues were not started  
3 early enough in the review process and they are now on  
4 the controlling path for completing the technical  
5 review.

6 Another issue that has not been previously  
7 discussed with the Commission that I'd like to  
8 highlight is the issue of technical specifications for  
9 these facilities.

10 We are using the standard technical  
11 specifications for the ABWR, the BWR-6 model, and  
12 we're going to conform those to the design. So, where  
13 there are design differences they need to be  
14 conformed. However, there is a major issue, I think,  
15 as well and that is these designs have more  
16 flexibility, they have additional features that have  
17 been provided and it's not appropriate to restrict  
18 technical specifications to the kinds of completion  
19 times and requirements that we have in the current  
20 BWR-6 where the design may not be as flexible or have  
21 some of the other options.

22 The issue becomes one though of  
23 documenting the bases for those relaxed requirements.  
24 This needs to be done specifically to identify where  
25 there is additional design features and how those

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1 features are considered and we think this is one that  
2 should be done using the PRA for insights to address  
3 some of these issues. This is one that is behind  
4 schedule with respect to input from the vendors. We  
5 also have a fairly significant work effort to ensure  
6 that the bases for the technical specifications are,  
7 in fact, consistent.

8 It is fair to say, however, that these  
9 issues cannot be closed finally until the design  
10 issues are closed. That is you need to understand  
11 what the design is so that you can write the tech  
12 specs and the bases and close those issues just as  
13 it's not possible to complete the ITAAC until you have  
14 completed the design issues and closed them. There is  
15 some interaction back and forth. But this issue is  
16 one that is going to take significant resources. We  
17 have started developing plans for how to manage this  
18 internally within NRR and we're going to a team  
19 approach to do it with a number of individuals focused  
20 on the tech spec review with support from the  
21 technical branches and the interface with the people  
22 doing the ITAAC. That planning is underway now and we  
23 have a meeting planned with General Electric next week  
24 to go over how this will be accomplished and what it's  
25 going to require on their part to support this with

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1 technical input and resources.

2 COMMISSIONER CURTISS: Bill, is the  
3 principal focus here on allowed outage times for  
4 equipment?

5 MR. RUSSELL: That is the principal area  
6 of relief, yes.

7 COMMISSIONER CURTISS: And what you've  
8 described, I take it, the staff believes that the PRA  
9 ought to be used in an aggressive and comprehensive  
10 way for purposes of evaluating permissible AOTs given  
11 the design capabilities of the system of the plant?

12 MR. RUSSELL: That's correct, and we  
13 believe that needs to be done on a case specific basis  
14 for each AOT where it is different from the standards  
15 which have been reviewed and approved and have a long  
16 history. So, that effort, we think, is fairly  
17 significant. The default would be if the applicant  
18 does not have the resources to support this we could  
19 clearly go with the current standards which are  
20 reflected in the BWR-6 design, and absent getting an  
21 appropriate justification for an extension of  
22 completion times, the staff would propose to use the  
23 current completion times. This is an area where there  
24 would need to be some significant resources applied on  
25 the part of the vendor.

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1 CHAIRMAN SELIN: Is that just an issue on  
2 the boiling --

3 MR. RUSSELL: No, it's for both. The  
4 first three apply to both.

5 CHAIRMAN SELIN: But given that the  
6 flexibility on a boiler is much greater, is there a  
7 bigger issue?

8 MR. RUSSELL: It's a greater issue, I  
9 believe, on the BWR based upon the fact that in some  
10 cases they have four trains, in other cases they have  
11 three. In some cases they have two. So, whether you  
12 characterize it as two and a half or three and a half,  
13 they do have more capability, particularly in some of  
14 the I&C areas. In fact, the I&C tech specs are  
15 probably the ones that are on the controlling path for  
16 completing the tech spec review.

17 We briefed you yesterday on reactor vessel  
18 water level indication. This is an issue that's still  
19 open on the ABWR only and that issue needs to be  
20 resolved. The staff believes, as we indicated, that  
21 this requires a hardware modification.

22 The issues you raised yesterday,  
23 Commissioner Rogers, regarding diversity, we will also  
24 explore at this time as to whether it's appropriate  
25 for the ABWR design.

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1           In the human factors area on the ABWR, we  
2           have two issues. We believe that these are coming to  
3           closure. One is factoring operating experience into  
4           the design process for completion of control room  
5           design and the other is on the minimum inventory.  
6           When they initially proposed it it was larger. They  
7           had not really focused on whether it was the minimum  
8           that would be necessary to execute the EOPs, so there  
9           is some reduction being done there and that is  
10          currently under staff review. I don't see that either  
11          of those are critical path items, but they are ones  
12          we've been working on for some time and it appears  
13          we're getting close to closure.

14                 COMMISSIONER REMICK: No question on the  
15          System 80+ in that area?

16                 MR. RUSSELL: No. Those issues are  
17          essentially being resolved on the System 80+ and the  
18          staff is satisfied with the approach.

19                 In the digital I&C diversity, when we  
20          briefed you earlier I had indicated that there was  
21          some technical analysis work being done on the ABWR.  
22          We've been informed recently that they have decided to  
23          add capability for manual actuation of high pressure  
24          core flutter for one train from the control room and  
25          that there were some issues with the capability of the

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1 analysis to reflect response for a large LOCA with low  
2 flow from the CRD pumps. So they have essentially  
3 stopped that analytical work and have adopted the  
4 position which the staff had identified some six  
5 months ago. So that issue is essentially being closed  
6 on the ABWR review.

7 The diversity issue, we've reached  
8 agreement on design for the CE 80+. There are some  
9 issues with respect to time for operator action for  
10 some manual actions from the control room.

11 The next two issues we'll cover together.  
12 That's the ITAAC and the certified design description.  
13 The design description is based upon the SSAR and it's  
14 an extraction from the SSAR, and then the ITAAC are  
15 the vehicle by which you confirm the design  
16 commitments that are in the design description, how  
17 they will be inspected, tested, or what analysis will  
18 be done and what acceptance criteria is to be  
19 specified.

20 COMMISSIONER REMICK: What's the  
21 difference or the commonality between the certified  
22 design description and design control document?

23 MR. RUSSELL: The design description is  
24 one that would be at the level of a rule, what the  
25 staff has called tier 1. That is it's codified by

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1 rulemaking, where the design control document is  
2 essentially the SSAR, it is tier 2 material and there  
3 are change provisions which can be used to make  
4 changes to that or to amend it, either at the time of  
5 an application by a COL applicant if they propose an  
6 alternate approach, for example for an analysis method  
7 that's described or something like that. So --

8 COMMISSIONER REMICK: But it's limited to  
9 tier 2?

10 MR. RUSSELL: It's limited to tier 2,  
11 where the certified design description and the ITAAC  
12 are tier 1.

13 COMMISSIONER CURTISS: Is the design  
14 control document synonymous with tier 2? Is it the  
15 same thing as?

16 MR. RUSSELL: No, because tier 2 includes  
17 materials which may be incorporated by reference or it  
18 includes information such as the PRA which we have  
19 proposed not be incorporated into the design control  
20 document. So, the SSAR is bigger and the SSAR is  
21 generally tier 2. Materials that we review by way of  
22 audits, if we find it's necessary for example in  
23 auditing analysis or records such as the seismic  
24 audits to incorporate that into our evaluation, then  
25 that would be pulled up and put into the SSAR.

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1 COMMISSIONER CURTISS: The design control  
2 document though includes some of the things, but not  
3 everything that's in tier 2.

4 MR. RUSSELL: It would be a subset of the  
5 SSAR, excluding proprietary information, as Denny  
6 mentioned. We don't see the need for having the full  
7 PRA, but we do see a need to have the PRA insights,  
8 for example. So, we see that it is a subset. We  
9 don't want to have additional review to be done. We'd  
10 like the word processor to run and basically delete  
11 materials so that it is not a difficult effort to  
12 develop a design control document.

13 COMMISSIONER CURTISS: Okay. And the  
14 change control process that would apply to the design  
15 control document would be the same as would apply to  
16 tier 2 --

17 MR. RUSSELL: That's correct.

18 COMMISSIONER CURTISS: -- as the staff has  
19 proposed in 287A, that would be 50.109.

20 MR. CRUTCHFIELD: There is tier 1 material  
21 in a design control document also.

22 MR. RUSSELL: Yes.

23 MR. CRUTCHFIELD: It's combined tier 1 and  
24 tier 2. So, if you're changing the tier 1, you've got  
25 to use that process.

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1 COMMISSIONER CURTISS: Right.

2 MR. CRUTCHFIELD: If you're changing the  
3 tier 2, you have to use the tier 2 process.

4 MR. RUSSELL: The design control document  
5 would include also the design description and the  
6 ITAAC, the site parameters and the interface  
7 requirements, plus the SSAR minus proprietary  
8 information, secondary references in the PRA.

9 COMMISSIONER CURTISS: What procedurally  
10 or technically do you accomplish by designating this  
11 subset of information as a design control document  
12 that you wouldn't have accomplished as a result of the  
13 change control mechanisms that apply normally to tier  
14 1 and tier 2? What in addition would this accomplish?

15 MR. CRUTCHFIELD: You need to take out the  
16 proprietary information and the secondary references  
17 to get yourself published in the Federal Register as  
18 a rule. So that's essentially why we're going to this  
19 design control document, to allow us procedurally to  
20 do that.

21 DOCTOR MURLEY: It wasn't driven by change  
22 control.

23 COMMISSIONER CURTISS: Okay.

24 CHAIRMAN SELIN: I heard your answer to  
25 Commissioner Curtiss and you don't accomplish anything

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1 from a change control.

2 MR. CRUTCHFIELD: Correct.

3 MR. RUSSELL: That's correct.

4 COMMISSIONER CURTISS: The focus here --

5 CHAIRMAN SELIN: You maintain tier 1 and  
6 tier 2 and then publish a subset of --

7 MR. CRUTCHFIELD: Correct.

8 COMMISSIONER CURTISS: The objective here  
9 is driven by proprietary considerations.

10 MR. RUSSELL: And secondary references.

11 MR. CRUTCHFIELD: And secondary  
12 references.

13 COMMISSIONER CURTISS: Okay.

14 MR. RUSSELL: Also, we feel that the PRA  
15 should be updated, as we discussed in the earlier  
16 Commission paper on a design specific basis when you  
17 get the details so that we don't see a need to carry  
18 forward the complete PRA, but the PRA insights we  
19 would carry forward because we would expect each COL  
20 applicant to update the PRA and maintain it on a  
21 living basis.

22 COMMISSIONER CURTISS: I'm not sure I  
23 understand all the nuances of the design control  
24 document, but perhaps it would be useful as you  
25 prepare the description that, Denny, you alluded to

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1 earlier, in the next month or so when you get that  
2 ready, provide that to the Commission at the same time  
3 that you make it available so that we can look at the  
4 details of that more carefully.

5 MR. CRUTCHFIELD: I'm sure we'll do that.

6 COMMISSIONER CURTISS: Okay. Thank you.

7 MR. RUSSELL: The last item I have --

8 COMMISSIONER REMICK: Excuse me, Bill. I  
9 have a little bit of confusion yet. When you defined  
10 what was in the certified design description I wrote  
11 down tier 1.

12 MR. RUSSELL: Yes.

13 COMMISSIONER REMICK: When you talked  
14 about design control document you said tier 2. Not  
15 everything in tier 2 --

16 MR. RUSSELL: I misspoke. The design  
17 control document includes tier 1 and tier 2. I have  
18 been focusing on the difference because we are getting  
19 a separate document from the applicants that will  
20 include design description, the ITAAC, the site  
21 parameters and the interface requirements. So, in my  
22 own mind I -- since that's coming in as a separate  
23 document, that would also be used with the SSAR minus  
24 the proprietary secondary references PRA. Those two  
25 together would constitute the design control document.

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1 COMMISSIONER REMICK: I agree with  
2 Commissioner Curtiss. I'd be interested to see the  
3 guidance when it's developed. Maybe it will help me.

4 MR. RUSSELL: The final point here is that  
5 we've concluded because of findings related to quality  
6 and maintaining consistency that there needs to be a  
7 final review by the staff to compare the SSAR from the  
8 applicant to the details on the ITAAC and the design  
9 descriptions for consistency. This is an issue where  
10 we've been working with draft SSAR material, draft  
11 ITAAC material and we need to make sure that there is  
12 a final QA done to ensure consistency amongst these  
13 documents for the purposes of going forward with an  
14 FDA. That will be done in parallel with the review  
15 process.

16 That is, we expect to complete our final  
17 SER and forward it and we will do that QA while that  
18 is undergoing review by the ACRS and the Commission.  
19 So, there may be some changes that we find, but they  
20 would be changes to ensure consistency. There should  
21 not be additional technical review.

22 COMMISSIONER ROGERS: Just how are you  
23 going to do that, Bill?

24 MR. RUSSELL: We're going to structure it  
25 with a separate review team. It will be made up of

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1 people that have field experience and it will be  
2 managed out of one of the branches in NRR. We are  
3 planning that now and have some proposals on how to do  
4 it. But it will be essentially doing a completeness  
5 check to look for essentially taking the design  
6 description and making sure the design description is  
7 consistent with the SSAR and then making sure that the  
8 ITAAC requirements are consistent with the SSAR. So,  
9 it's a QA review for consistency. We expect that to  
10 be done by the vendor first at the time they make  
11 their final submittals, but based upon our experience  
12 today we feel it's necessary to take an extra step and  
13 do an independent review after that's completed. It  
14 will be done by individuals who are not involved in  
15 doing the initial review and --

16 COMMISSIONER ROGERS: Roughly how many  
17 people do you expect?

18 MR. RUSSELL: I expect this will probably  
19 take on the order of six to eight people on the order  
20 of six weeks to eight weeks to complete this.

21 MR. CRUTCHFIELD: We have a month  
22 scheduled for it.

23 MR. RUSSELL: Right.

24 CHAIRMAN SELIN: Do you have resources  
25 also?

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1 MR. RUSSELL: Yes.

2 CHAIRMAN SELIN: I mean these are --

3 MR. RUSSELL: They will be resources that  
4 are pulled off of other things, but yes, we believe we  
5 can accomplish this task.

6 CHAIRMAN SELIN: What kind of other  
7 things?

8 MR. RUSSELL: Principally be coming out of  
9 inspection activities.

10 CHAIRMAN SELIN: You mean that's already  
11 scheduled?

12 MR. RUSSELL: We have deferred some  
13 inspection activity in order to make the resource  
14 available. What's happened is the schedule has been  
15 slipping and so we've been deferring the initiation of  
16 this until after we get the final QA documents from  
17 the vendors.

18 DOCTOR MURLEY: Well, the real answer is  
19 what we do is pull individuals from various things and  
20 it's hard to say that we're slipping any integrated  
21 activity. We're just pulling people off of their  
22 normal jobs.

23 MR. RUSSELL: But it will be a task force  
24 type activity in a short period of time.

25 COMMISSIONER ROGERS: Can you get any

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1 assistance from using software to do word searches and  
2 things of this sort?

3 MR. RUSSELL: I don't believe so because  
4 the documents are going to be coming in. We're not  
5 getting them all in electronic format and frankly I  
6 think it takes engineers to look at it because the  
7 statements in most of the design descriptions are not  
8 identical to the SSAR. In some cases they are  
9 paraphrases of them and you need to look at them and  
10 make sure that they are consistent one to the other.  
11 So, it takes engineering judgment in doing --

12 COMMISSIONER ROGERS: Oh, yes. Well,  
13 obviously. Sure. You can't just turn it over to a  
14 computer, but sometimes there can be considerable aids  
15 in being able to use word processing software that  
16 allows you to pick up the use of a word or key phrase  
17 in different sections of different documents and see  
18 just how they are being interpreted.

19 MR. RUSSELL: We had not considered that.  
20 We'll look into it.

21 (Slide) If I could have the next slide,  
22 please.

23 COMMISSIONER CURTISS: Bill, before you go  
24 on, just one other quick question under the heading of  
25 PRA, on the subject of the reliability of the

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1 maintenance chapter. Is that part and parcel of the  
2 discussion that you went through on PRA in terms of  
3 the schedule?

4 MR. RUSSELL: Yes. We believe that the  
5 issues on reliability assurance are closed. We've  
6 completed our review of what's been proposed by the  
7 applicant and we believe that that's consistent with  
8 the maintenance rule. So, that issue, we think, is  
9 behind us. It's not one of the issues that are  
10 currently open on the punch list.

11 COMMISSIONER CURTISS: All right. Is that  
12 chapter going to come up discreetly to the Commission  
13 or what is your thinking there?

14 MR. RUSSELL: That would be part of the  
15 overall review. We are not completing individual  
16 sections to send them up.

17 COMMISSIONER CURTISS: All right. But you  
18 have completed that part of the discussion?

19 MR. RUSSELL: Yes.

20 COMMISSIONER CURTISS: Could you just  
21 provide that for my information? I don't want to do  
22 anything other than look at it, but if you have a copy  
23 that you could provide, I'd appreciate that.

24 COMMISSIONER de PLANQUE: Bill, before you  
25 go on, back on the water level indication, do you have

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1 any idea yet where GE is headed on that hardware fix  
2 for this?

3 MR. RUSSELL: No. Their approach thus far  
4 has been that they did not wish to get in front of  
5 their customers and the owners group. So, that's why  
6 it's still an open issue. It's not that it's an issue  
7 that cannot be resolved. They've just chosen not to  
8 resolve it yet. So, that's for discussion next week  
9 with them. I should have mentioned that Tom and I  
10 have a management meeting at the executive level with  
11 them on June 10th and we have a number of meetings  
12 leading up to that to try and get closure of some of  
13 these issues.

14 COMMISSIONER de PLANQUE: Okay.

15 MR. RUSSELL: (Slide) If I can have the  
16 next slide, please, this gets into the approach that  
17 we're going to take to potentially manage these two  
18 reviews in parallel.

19 There are approximately 100 ITAAC systems  
20 for each design. We have promulgated a memorandum  
21 which has made assignments. We have seven teams that  
22 are functionally organized to address these. Each  
23 team has a specific number -- a specific ITAAC  
24 assigned to the team for responsibility for review.  
25 There is a section leader that is in charge of the

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1 team and a branch chief that is the manager that's  
2 held accountable.

3 We have set out an approach which is  
4 multidisciplinary. That is, there is a lead branch  
5 that has responsibility and there are support branches  
6 that will assign people to these teams, and the  
7 approach is that essentially the ITAAC as they're  
8 submitted will be reviewed by the teams, by the  
9 individuals assigned to the teams on an individual  
10 basis first and then there will be a team meeting  
11 where the team will get together and review each  
12 other's comments and will provide an integrated set of  
13 comments to the vendor.

14 CHAIRMAN SELIN: So it's not a matrix  
15 approach. The people from the subsidiary branches are  
16 assigned to the task?

17 MR. RUSSELL: People from the subsidiary  
18 groups are assigned to the task.

19 CHAIRMAN SELIN: So it's individuals who  
20 have the responsibility, not branches?

21 MR. RUSSELL: That's correct. It's what  
22 I told the staff. It's Management 101. I wanted to  
23 know who I could hold accountable for which ITAAC and  
24 when it was to be done, and so there is a name against  
25 each group with specific ITAAC assigned and there is

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1 a very simple management accountability scheme to get  
2 it completed.

3 COMMISSIONER REMICK: Does it appear as it  
4 the vendors are on schedule with their submissions?

5 MR. RUSSELL: We have been receiving some  
6 submissions. I would characterize, however, that  
7 we've closed probably on the order of 100 to 150  
8 issues in the last four or five weeks with GE. A  
9 similar large number have been closed with CE. Some  
10 of these came in earlier and we're going to be asking  
11 them to identify what impact the closure of those  
12 items have on the ITAAC. And it really raises a  
13 question which needs to be addressed with each vendor,  
14 and that is, does it make sense to proceed or should  
15 we request that they update their submittal to reflect  
16 the agreements that were reached on closing the design  
17 issues before we start these team reviews?

18 CHAIRMAN SELIN: That then implies that  
19 the ways that some of these were closed were different  
20 from what the vendors had expected?

21 MR. RUSSELL: Yes. In fact, in many cases  
22 there has been draft information submitted by way of  
23 SSAR mark-ups. There have been agreements reached and  
24 there are many confirmatory items which have to be  
25 confirmed. And what we found in ITAAC is it's very

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1 important to have the final words, the design details  
2 such that you can take that information and write it  
3 at the level of a rule, so it's difficult at times to  
4 do that without having seen the final words.

5 It may very well be that we will choose to  
6 go forward based upon the draft information we've seen  
7 with the draft ITAAC and start that knowing that we  
8 would have then potentially a larger QA effort at the  
9 end, but that's one of the issues that we'll be  
10 discussing at the management meeting on June 10th.

11 Basically, some submittals have come in,  
12 but I have not initiated the team effort. What we  
13 want to do is use this as a management decision,  
14 because when this starts we're going to have a lot of  
15 people very busy on very tight schedules. For  
16 example, we're giving them two weeks from the time we  
17 start to complete their reviews of the ITAAC, to have  
18 the team meetings and to give comments and to get  
19 those comments formally transmitted to the vendor by  
20 week 3.

21 After the comments come back, if the  
22 comments are not resolved and the issue closed within  
23 two weeks, we've decided to call it yellow, "code  
24 yellow," and that's the point where the branch chief  
25 and the division director are to attempt to resolve

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1 the issue. If it's not closed within 30 days of  
2 receiving the vendor's response, then the responsible  
3 team leader gets to meet with me in a thursday staff  
4 meeting and explain what the issues are and why it's  
5 now "code red," and we will continue our weekly  
6 briefings for Tom Murley.

7 We have a simple approach that we have.  
8 It does not take a lot of effort to keep track of  
9 accountability as to whose in-box the issue is in and  
10 whose responsibility it is to complete the review. We  
11 will have seven teams going in parallel. It's going  
12 to keep a significant number of staff busy and I want  
13 to make sure that when we start that that there are  
14 not administrative issues that will impact it, so I  
15 want to make sure that the design issues are in fact  
16 closed and that the quality of the information we  
17 receive would support that kind of massive staff  
18 effort.

19 CHAIRMAN SELIN: When you're all done, I'd  
20 be interested in your review of whether it did turn  
21 out to be a good idea to require the ITAAC before the  
22 design issues were closed. I'm not asking you to  
23 speculate on that at this point, because the  
24 assumption was you really couldn't review some of  
25 these designs without an ITAAC in hand, but there's

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1 also the converse which is as the designs are finished  
2 the ITAAC have to be --

3 MR. RUSSELL: What we're finding is that  
4 there is a significant interaction from the ITAAC back  
5 into the SSAR with respect to details as to how the  
6 ITAAC will be completed. It's clear that the two need  
7 to be done together, but it is also true that you need  
8 to finalize the design such that you can write the  
9 ITAAC.

10 (Slide) If I can have the next slide,  
11 please, I'm now shifting to the status on the EPRI  
12 passive requirements document.

13 We did have a significant meeting with  
14 EPRI--

15 CHAIRMAN SELIN: Before you go on, just to  
16 recapitulate, on the ABWR you essentially have the  
17 design issues closed, but it's not clear how much work  
18 will have to be redone on the ITAAC to reflect these  
19 closures?

20 MR. RUSSELL: That's correct. We have  
21 closed a number of issues. We don't know how much  
22 that would impact some of the ITAAC that have been  
23 submitted. Not all of the ITAAC are in yet. They're  
24 scheduled to come in yet and we need to make sure that  
25 the SSAR material that we're going to be reviewing is

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1 complete.

2 We have had some issues where changes were  
3 made by way of mark-ups. Subsequently another mark-up  
4 was made on the page and the old change was not  
5 incorporated, so whether we have a complete set is  
6 also a quality issue.

7 CHAIRMAN SELIN: Are there any design  
8 issues, not ITAAC issues but actually just basic  
9 design issues which are awaiting the submission of the  
10 ITAAC so you can go back and see that?

11 MR. RUSSELL: We have at this point in  
12 time we believe on the order of 20 open items that we  
13 believe will clearly impact ITAAC that the design is  
14 not reviewed yet.

15 CHAIRMAN SELIN: You can't close the  
16 design because you haven't seen the ITAAC and  
17 therefore you don't really understand in detail how  
18 the design --

19 MR. RUSSELL: No, we have not seen any  
20 cases where -- in fact, the approach is to close the  
21 design first and, once you've reached agreement on the  
22 design from a safety standpoint, then you can focus on  
23 developing the ITAACs. We've not seen the reverse.

24 CHAIRMAN SELIN: That's the ABWR on the--

25 MR. RUSSELL: I would expect it to be on

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1 the System 80+.

2 CHAIRMAN SELIN: So it's a comparable  
3 process, but you're a month behind that or something?

4 MR. RUSSELL: In fact, we're looking at  
5 having a comparable meeting with Combustion  
6 Engineering management. I believe it's tentatively  
7 scheduled for 15 July to go over and make a decision.  
8 We hope that we will have sufficient information that  
9 we can make the management decision on the 10th to  
10 start the team ITAAC reviews on the ABWR when we  
11 return, which would be approximately the middle of  
12 June on the ABWR, but there are a number of issues  
13 that are open that cause that to be questionable. It  
14 may delay until the end of June or it could be early  
15 July. But we have to make that decision, so the first  
16 step is to get the facts on the table with the  
17 management meeting with the applicant.

18 CHAIRMAN SELIN: And going to the System  
19 80+, I didn't understand whether you had said you had  
20 made the 100 some design closures there also or --

21 MR. RUSSELL: We have made a good number  
22 of them. Unfortunately, we have not had the close-out  
23 activity to write SER input so that we need to resolve  
24 differences between what the staff believes is closed  
25 and what the vendor believes is closed and have that

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1 type of review. The same intense review on an issue  
2 by issue basis has not occurred because we still have  
3 a few hundred items open on the CE design -- it was a  
4 manageable number -- so that I could sit down and go  
5 through each one on the ABWR design.

6 COMMISSIONER REMICK: Bill, maybe I got  
7 confused on the dates you just quoted, but I thought  
8 that for the ABWR the final submissions are scheduled  
9 for July and System 80+ June, but it sounds as if you  
10 are going to be making decisions on moving ahead with  
11 the task force before.

12 MR. RUSSELL: That is correct, but, as I  
13 pointed out, there are still some issues which are  
14 open in design that the staff has not reached  
15 agreement yet on whether the design is finalized. So  
16 until we've reached agreement on the design being  
17 finalized, I do not want to initiate the massive  
18 review of the ITAAC on the CE 80+.

19 COMMISSIONER REMICK: I see.

20 MR. RUSSELL: We hope to reach that  
21 decision by the mid-July time frame on the CE 80+. It  
22 is true that they are submitting draft materials.  
23 Individual reviewers can start reviewing those, but  
24 I'm not going to hold them accountable to complete it  
25 in two weeks until such time as management is

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1 satisfied that the design issues are essentially  
2 resolved or they're so few that we agree to proceed  
3 and will handle those on a case by case basis in  
4 parallel.

5 As it relates to the passive requirements  
6 document, we reached a major breakthrough I think with  
7 some meetings that were held leading up to May 20th.  
8 And at that meeting we discussed a process that would  
9 be used for deciding on the treatment of non-safety  
10 systems, both from the standpoint of regulatory  
11 oversight or control of those -- whether they need to  
12 be in tech specs, covered in the design description,  
13 et cetera, based upon their importance to safety --  
14 and also what might be the graded approach to quality.  
15 These need not be safety systems. Are there  
16 particular aspects of the design which should be  
17 incorporated and controlled or not?

18 We reached agreement on both what we'll  
19 characterize are the front-end initiators and the  
20 importance of non-safety systems in preventing event  
21 initiation, as well as how some of these systems may  
22 be used for mitigation after an event has occurred.

23 We are going to take and prepare a -- and  
24 we reached agreement on preparing a Commission paper  
25 based upon a letter that describes a process which

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1 we've now found acceptable and we actually worked out  
2 and marked up in the meeting changes to the letter  
3 which the staff was then able to agree with and we  
4 will use that letter as the bases for describing the  
5 process. We will then use that to close the items  
6 that are open, because this will now shift to the  
7 specific design details of the vendor and how it is  
8 approached, so this will allow us to close about 40  
9 items that were open in the EPRI passive requirements  
10 document review and they will be closed by saying,  
11 "Here's the process to be followed on a vendor-  
12 specific basis to look at the importance of system X,  
13 Y, and Z as it relates to its safety value," and that  
14 process has been agreed to.

15 COMMISSIONER REMICK: So you've agreed on  
16 the process, but not necessarily the systems?

17 MR. RUSSELL: That's correct, because you  
18 need to use a PRA and that's very design specific, so  
19 we cannot make those judgements in advance and that  
20 was essentially what was agreed to, so it now shifts  
21 from discussion about what process should be followed.  
22 The process has been agreed to, the methods, the  
23 approach. It now shifts to applying that to  
24 particular designs and seeing whether the system is  
25 important and would reach a threshold that would be

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1 necessary or not.

2 COMMISSIONER REMICK: I better understand  
3 Tom's comment that there might be follow-on questions  
4 then.

5 MR. RUSSELL: There may be follow-on  
6 questions as it relates to the vendors in these areas,  
7 but the process has been agreed to with EPRI so that  
8 the major policy issues of how do you go through and  
9 systematically decide whether something needs  
10 regulatory treatment or not, whether it needs to have  
11 some additional technical requirements or not, that  
12 has been agreed upon.

13 We expect to meet with the ACRS in the  
14 September-October time frame and, based upon the  
15 approach of finalizing this based upon the letter, we  
16 believe that we'll be able to meet the November '93  
17 schedule. It's going to be tight, but we believe we  
18 can make it.

19 COMMISSIONER REMICK: You indicate that  
20 there are nine chapters of the FSER under preparation.  
21 Do we have the standard number of chapters?

22 MR. CRUTCHFIELD: It will be about 14 or  
23 15 chapters, so we're missing slightly less than half  
24 or a third or somewhere in that area.

25 MR. RUSSELL: (Slide) If I can have the

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1 last slide, some of this has been covered, major  
2 issues affecting our review progress, and what I will  
3 characterize now is the 90 day window, the way we're  
4 structuring our resources.

5 First, we need to complete the ABWR, the  
6 System 80, and the EPRI passive so that those  
7 resources can be freed-up. Until I get those issues  
8 off my plate and completed, that will free up a number  
9 of resources.

10 We are giving high priority to the vendor  
11 test program completion and the analysis of those  
12 results, as I mentioned, and a major lesson learned is  
13 that we must do a better job of integrating the PRA  
14 and severe accident issues into the design review  
15 early so that they are not controlling at the end of  
16 the review process.

17 COMMISSIONER REMICK: My understanding is  
18 that the Japanese actually conducted a test at ROSA in  
19 1992. Has the staff analyzed that information?

20 MR. RUSSELL: I have no knowledge of that  
21 test. We can follow-up and find out.

22 DOCTOR MURLEY: Do you mean a passive --  
23 it can't be -- I don't know what design it would be,  
24 because it can't be the design that we want for AP-600  
25 because it takes some mods to the facility which we're

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1 providing and paying for.

2 COMMISSIONER REMICK: And they're not  
3 installed yet?

4 DOCTOR MURLEY: No.

5 COMMISSIONER REMICK: I see.

6 DOCTOR MURLEY: So we'll look into it and  
7 get you an answer, but I'm pretty sure it can't be  
8 exactly relevant to what we want.

9 COMMISSIONER ROGERS: Well, what is the  
10 status of the ROSA facility now, Tom? Where does it  
11 stand?

12 DOCTOR MURLEY: I think I'd need to get  
13 you a detailed review. Research is following that  
14 issue now and managing it, but it's undergoing  
15 modification I believe now for testing later this  
16 year.

17 COMMISSIONER ROGERS: Right.

18 DOCTOR MURLEY: But exactly the dates, I  
19 don't have.

20 COMMISSIONER ROGERS: But do you have a  
21 feeling that it's roughly on schedule?

22 DOCTOR MURLEY: Oh, it's consistent, yes.  
23 It's consistent with this. We have been very careful,  
24 as you know, not to make it conditional, the tests and  
25 the facility conditional on writing an FSER for the

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1 passive plant. On the other hand, we do want it to be  
2 in about the same time frame.

3 COMMISSIONER ROGERS: Available at a  
4 reasonable time.

5 DOCTOR MURLEY: Yes.

6 COMMISSIONER ROGERS: Right.

7 COMMISSIONER REMICK: Are the SPES tests  
8 on schedule?

9 DOCTOR MURLEY: Yes. They are scheduled  
10 to be complete by the end of this year. I was just  
11 over there with Thadani and some of the senior staff  
12 in April and the facility looks in good shape.

13 COMMISSIONER ROGERS: What about the SBWR?  
14 What tests are necessary there? I know not very many,  
15 but there are some, aren't there? Is there some kind  
16 of confirmatory testing required for the squib valves,  
17 depressurization?

18 DOCTOR MURLEY: Confirmatory testing, I  
19 don't know.

20 MR. RUSSELL: I don't believe we've  
21 requested any confirmatory testing for the SBWR. I'd  
22 have to get back there. We had a paper we sent up  
23 earlier on SBWR testing for some issues which we had  
24 which we felt were issues for the vendor to address.

25 DOCTOR MURLEY: Yes. The vendor has to do

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1 a fair amount of testing.

2 MR. RUSSELL: So we have identified issues  
3 for GE to address with some testing or pulling out  
4 records to show that there has been adequate testing  
5 already, but I'm not -- I just have to get back to you  
6 as to whether we have requested any specific  
7 confirmatory testing or not. I just don't recall at  
8 this point.

9 CHAIRMAN SELIN: I have a resource  
10 question and sort of a paperwork question, but I defer  
11 to my colleagues if they have other technical or  
12 schedule questions that they wish to address.

13 COMMISSIONER CURTISS: I have several  
14 questions just on various subjects here.

15 Since we're on the passive issues now,  
16 what is the schedule for taking up and bringing to the  
17 Commission the EP and source term issues?

18 MR. CRUTCHFIELD: We are looking to get  
19 them up in about a month or so. I've just gotten some  
20 draft input from Bill on the EP issue -- or the source  
21 term issue, excuse me, so that will be coming forward.  
22 And once we've digested what EPRI is due to give us on  
23 the EP issues, then we'll get that up to the  
24 Commission also. So, I would estimate in about a  
25 month.

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1 COMMISSIONER CURTISS: And this will come  
2 up in the form of the previous technical papers as a  
3 technical issue that needs to be resolved, policy  
4 questions at the Commission level?

5 MR. CRUTCHFIELD: Yes, with the staff  
6 recommendations.

7 COMMISSIONER CURTISS: Okay. I had  
8 several questions on the COL form and content issue.  
9 The staff in early April provided us with an early  
10 draft of the approach that you're thinking about on  
11 form and content. In fact, I thought it was  
12 especially useful at this stage to get this up and to  
13 get it out for comment as an early opportunity for  
14 people to focus on and thought that was the right  
15 thing to do.

16 A couple of specific questions that I had  
17 about this, and recognizing that your thinking may  
18 have evolved since this point. Are you currently  
19 thinking about any programmatic ITAAC or have you gone  
20 beyond that?

21 MR. RUSSELL: No, we're not considering  
22 generic ITAAC or programmatic ITAAC at this point as  
23 it relates to design certification.

24 MR. CRUTCHFIELD: For certification. For  
25 COL we are considering some, yes.

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1 COMMISSIONER CURTISS: Okay.

2 MR. CRUTCHFIELD: But not for  
3 certification.

4 COMMISSIONER CURTISS: Okay. The one area  
5 that I'd like you to expand upon if you could in terms  
6 of your current thinking is the bridge concept, what  
7 you see the bridge concept accomplishing, what it's to  
8 include and how it will play out in terms of the  
9 overall certification and COL issuance process.

10 DOCTOR MURLEY: I guess I got the concept  
11 started, because as we started to review ITAAC -- I  
12 had the senior group of reviewers last summer, you  
13 recall, look at ITAAC and it became clear that as they  
14 got into it and used their experience as inspectors in  
15 some cases, going back many years, that what we're  
16 going to use, what an inspector is actually going to  
17 use to confirm that the ITAAC are met are not the  
18 kinds of simple line diagrams that are in ITAAC, but  
19 it's going to be using detailed P&IDs in many cases.  
20 So, it was clear to me that we had to have a need to  
21 bridge from the certification to what was certified,  
22 in some cases fairly high-level simple line diagrams  
23 to what the inspectors are going to use, so that was  
24 the concept.

25 Maybe Bill can --

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1 MR. RUSSELL: Let me give you a specific  
2 example. Clearly the functional drawings that are  
3 contained in the ITAAC in the design description,  
4 actually are in the design description, the ITAAC  
5 confirms them, are at a high level and are simplified  
6 from what is in the P&IDs. The P&IDs are simplified  
7 from what would be in a construction drawing and is  
8 different from that which would be in an as-built or  
9 an isometric.

10 We see that there could be a process by  
11 which clearly the P&ID could be used to do a walk-  
12 down. And if there are differences between the plant  
13 that's walked down and the P&ID, you may then have to  
14 check to see if the difference is acceptable based  
15 upon the higher tier document. So it's really the  
16 concept of how these relate one to the other.

17 You can make a change to the P&ID through  
18 a 50.59-like process as long as it doesn't impact the  
19 tier 1 material, so functionally you've identified  
20 what it is and you've put controls on it, identified  
21 valves, pumps, et cetera, but their physical  
22 arrangements may be slightly different. But the  
23 actual as-built plant would be walked down, likely  
24 walked down with a final as-built drawing, and you  
25 would have some basis for saying that as-built drawing

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1 conformed to the SSAR and that the SSAR conforms to  
2 the tier 1 document to the extent there's been a  
3 change to the SSAR.

4 DOCTOR MURLEY: We felt it was important  
5 that the COL holder be the one who takes the certified  
6 material and prepares the construction drawings and  
7 the P&IDs and he then attests to us in some kind of  
8 way -- we call it this bridge document -- that they're  
9 consistent going from the ITAAC to what they're  
10 actually building the plant to and what we're going to  
11 use then to walk the plant down, that the details are  
12 consistent with what we approved.

13 MR. RUSSELL: And this may be nothing more  
14 significant than the existing QA for construction and  
15 design, which they have to have, and so they may have  
16 QA processes that they rely on to ensure that the  
17 drawings released in the field for construction are  
18 consistent with the certified design. And then we  
19 would use those drawings that are released in the  
20 field and, if they built it in accordance with the  
21 drawing, we'd be able to use that as part of the sign-  
22 as-you-go and so we would build up these issues to  
23 reach an ultimate conclusion that the facility was  
24 built in accordance with the certified design.

25 COMMISSIONER CURTISS: And is your current

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1 thinking that this level of detail would be set forth  
2 in a bridge document which in turn would be subject to  
3 some sort of change control process -- someone  
4 mentioned 50.59 -- if a COL applicant holder wished to  
5 depart from that information?

6 MR. CRUTCHFIELD: The general functional  
7 information will be captured in the tier 1 and in the  
8 ITAAC. The details of implementation, as are  
9 discussed in the SSAR in many chapters, are tier 2  
10 information. In other words, we capture the general  
11 functional criteria and how you do it in some cases is  
12 allowed to be flexible by the 50.59 process. Industry  
13 has said they will maintain standardization out there.  
14 They will be the keepers of the standardization.

15 COMMISSIONER CURTISS: But you're  
16 proposing-- are you proposing to go beyond what's in  
17 tier 2 -- I understand how tier 2 works -- with the  
18 bridge document?

19 MR. RUSSELL: The document itself could be  
20 a process which describes how it's done and how you  
21 would find, for example, the appropriate release  
22 signatures for construction and what that means. And  
23 so, at the time it's released for construction there  
24 will be a process in place for ensuring that what is  
25 in fact released for construction is consistent with

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1 the certified design. QA plays a significant role in  
2 this process.

3 MR. CRUTCHFIELD: I'm not sure I got your  
4 question answered.

5 COMMISSIONER CURTISS: Well, let me come  
6 at it from a different angle. Maybe the answer to  
7 this is the concept is still being discussed and the  
8 comments, I assume, are coming in and the staff will  
9 bring forward to the Commission a proposed approach on  
10 COL form and content much like we did on the design  
11 certification.

12 But the issue that I see at this point is  
13 clearly by definition the kind of information, the  
14 level of detail that you're describing here is not,  
15 cannot be necessary for you to make the safety finding  
16 at the design certification stage or it would have to  
17 be included in the design certification.

18 MR. CRUTCHFIELD: That information is not  
19 necessary to issue the COL either. The information  
20 that's available at the time of the certification is  
21 sufficient for us to make a final decision for the COL  
22 application also. The Commission has stated that  
23 there's no need for additional design detail between  
24 the certification and the COL issuance.

25 COMMISSIONER CURTISS: Let me phrase it

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1 differently. The design detail set forth in the  
2 certification, if implemented in any manner consistent  
3 with the certification itself, should be, needs to be  
4 acceptable to the staff, and that in turn -- to the  
5 Agency and that in turn drives the level of design  
6 detail that will be required in the certification  
7 itself.

8 I raise the question because, depending  
9 upon how this concept ultimately evolves and what the  
10 staff envisions with this concept, there are aspects  
11 of what you've discussed that sound to me like there  
12 is an additional road map, if you will, for the  
13 inspectors. I don't disagree with the need for having  
14 that road map, but, if set forth in a document of some  
15 sort that at the COL stage the COL applicant prior to  
16 issuance of a COL must commit to and in turn with a  
17 change control process applying to that document, it  
18 seems to me you're really raising a level of design  
19 detail question.

20 It's not a site-specific issue. It's an  
21 issue that is generic to the design itself and would  
22 presumably be necessary for everybody that applies to  
23 construct that particular design.

24 DOCTOR MURLEY: I don't think we're -- in  
25 the sense that you describe it, we're not raising a

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1 level of detail issue which is do we need this bridge  
2 document in order to make our finding that the ITAAC  
3 are met. And the answer is no, but it's a  
4 practicality issue.

5           Going from the level of detail that we do  
6 have when we issue a certification and a COL to the  
7 actual building of the plant involves a great amount  
8 of detailed drawings that we just don't have now and  
9 we don't need to make our safety finding. On the  
10 other hand, the utilities' own QA people as well as  
11 our inspectors are going to be using those drawings as  
12 the ones that he sees, and what we're saying is we  
13 want to be sure that they're consistent with what we  
14 approved and we're going to put that onus on the COL  
15 holder to provide us this bridge between what we  
16 approved and made our safety judgements on and the  
17 detailed drawings and things that the craft people are  
18 actually using out in the plant.

19           Now it does not have its own change  
20 control process that I see that's in any way an  
21 analogue to the tier 1, tier 2. On the other hand,  
22 we've got to maintain as we get into the inevitable  
23 changes to tier 2 material. Then we've got to make  
24 sure this bridge document keeps up with it. Quite  
25 frankly, I don't think we've given any thought -- it

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1 will have to be controlled like any other construction  
2 document.

3 MR. CRUTCHFIELD: There's construction  
4 changes that go on at plants day by day and those  
5 things are controlled and we look at those. We're  
6 going to be sure that they're controlled the same way.  
7 The bridge concept is just that. It's a concept.  
8 We've tossed the term "document" out, but we haven't  
9 thought it all the way through to determine whether  
10 it's a document or a concept or a process or whatever.

11 COMMISSIONER CURTISS: Okay.

12 MR. RUSSELL: I would submit, though, that  
13 the existing regulations that require quality  
14 assurance during design and construction and operation  
15 address these kinds of issues and that we've had the  
16 issue in the past of does the as-built plant match the  
17 FSAR that was the basis for litigation and making  
18 these safety decisions. So we do not do inspections  
19 with the simple one line drawings that are in the  
20 P&IDs and FSER. You use the as-built drawings and you  
21 made a separate review to determine that the drawings  
22 released for construction are consistent, so we expect  
23 we're going to be doing more engineering review on a  
24 phase basis and that this process would be consistent  
25 with sign-as-you-go and would provide assurance in a

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1 hierarchical scheme that the as-built plant matched  
2 the certified design.

3 COMMISSIONER CURTISS: Okay. I recognize  
4 that this is at a formative stage and the staff's  
5 thoughts on this have not gelled yet. The issues that  
6 come up in this context, a couple of which OGC raised  
7 in its April 12th memo on QA and QC as well as the  
8 programmatic ITAAC for the COL holder are important  
9 questions to raise.

10 As you get into this question and think  
11 about the bridge concept at this point, and  
12 particularly if it moves in the direction of becoming  
13 a document that has some significance in the  
14 regulatory process as opposed to the construction  
15 process, these are issues that will need to be fleshed  
16 out.

17 Just one final question on this subject.  
18 Can you just give me a status report on where you  
19 stand in terms of the issues and the timing for the  
20 COL form and content paper?

21 MR. CRUTCHFIELD: We haven't gotten a lot  
22 of comments back on the form and content paper yet, so  
23 we're still relatively early in the process of  
24 finalizing it and getting it up to the Commission.  
25 Right now a lot of our focus is on ABWR System 80+ and

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1 some of the things that are more imminent to us.

2 COMMISSIONER CURTISS: Okay. Just a  
3 suggestion on the posture that it's in now and in view  
4 on where we are on 92-287. It might be useful to  
5 consider with your next draft and before you send it  
6 up to the Commission, in addition to putting it in the  
7 PDR, publish it in the Federal Register so that the  
8 approach that we're now grappling with on 287, whether  
9 to put it out formally for public comment is one  
10 that's taken care of early in the process.

11 That's all I have at this point.

12 CHAIRMAN SELIN: Commissioner Remick?

13 COMMISSIONER REMICK: Bill, on your last  
14 bullet on your last slide you talk about the  
15 importance of integrating the PRA and severe accident  
16 issues in design reviews on the passive LWR. I drew  
17 the inference that there must be some issues  
18 associated with the passive plant PRAs and severe  
19 accident issues. If that is the case, have those been  
20 conveyed to the vendors?

21 MR. RUSSELL: No. This is more an  
22 extrapolation of lessons learned from the evolutionary  
23 review and a management frustration at this point in  
24 time that we are still dealing with some of these  
25 issues after having dealt with them for the last year

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1 and a half or two years and we should have started it  
2 earlier to address details such as sump cavity design  
3 and the design details, et cetera. We just need to  
4 start these issues sooner and make sure that the PRA  
5 is integrated in sooner. So, when we have a draft  
6 safety evaluation report, we'll have a draft that  
7 addresses PRA and severe accident issues, which we did  
8 not have --

9 COMMISSIONER REMICK: So, my inference is  
10 incorrect then.

11 MR. RUSSELL: Your inference is incorrect.

12 COMMISSIONER REMICK: Okay.

13 MR. RUSSELL: It's more a lesson learned  
14 from how we manage the review rather than any  
15 technical issues that are pending.

16 COMMISSIONER REMICK: Okay. Who in the  
17 staff will be responsible for validating the computer  
18 codes once we start getting ROSA, Oregon State and  
19 SPES facility test results in and are we geared up so  
20 that when results start coming in that we can validate  
21 those codes?

22 MR. CRUTCHFIELD: In an earlier Commission  
23 paper we indicated to you that it was going to be a  
24 combined effort by NRR and Research and contractors to  
25 go out, follow the test, look at the test results,

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1 look at the validation of the codes. So, that's how  
2 we continue to plan to do it. It will be a combined  
3 effort by NRR and Research.

4 MR. RUSSELL: But the fundamental question  
5 is if it's related to codes an applicant is using to  
6 support the application, it's the responsibility of  
7 the applicant to validate and verify the codes. We  
8 will be looking over their shoulder carefully. We  
9 will be doing some independent reviews of that so that  
10 we have confidence that the code is indeed validated.

11 COMMISSIONER REMICK: We will not be  
12 validating our own codes that we use?

13 MR. RUSSELL: For testing that's done at  
14 ROSA, for that type of work, then the responsibility  
15 is ours to do that validation. I was just focusing  
16 on -- you combined Oregon and SPES with ROSA and the  
17 burden shifts. If it's work being done to support the  
18 application, then the burden rests with the applicant  
19 and we will do an independent review of what they've  
20 done and make our judgments. Where it's our own  
21 confirmatory work, we, Research and contractors will  
22 be looking at that and how that's done.

23 DOCTOR MURLEY: Commissioner, I think we  
24 owe you a -- this is going to be an ongoing question  
25 and I'm sure we're going to have dialogue with the

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1       ACRS, shall we say, on this, as well as the  
2       Commission. So, I think we owe you probably a fairly  
3       thorough -- us and Research together, a fairly  
4       thorough discussion of what our plans are because I  
5       can see it's going to be a question as time goes on of  
6       where all this data is fitting in, how it's being  
7       used, how the codes are being -- because the fact is  
8       we have never, to my knowledge, validated the codes  
9       that we have in the kinds of regimes where the passive  
10      plants are -- the safety systems are supposed to act.  
11      That's the whole purpose of requiring these tests.  
12      So, we do need a -- there's been a lot of discussion.  
13      It's not like there hasn't been a lot of thought, but  
14      I think we do need to put it together.

15               COMMISSIONER REMICK: No, that's fine,  
16      just as long as the staff is planning to do that,  
17      although I certainly agree, Bill, with what you're  
18      saying. There's no question about the applicant has  
19      the responsibility, but I don't think we just ignore  
20      data from SPES or OSU because it's the applicant's  
21      work.

22               MR. RUSSELL: No, we are going to be --

23               COMMISSIONER REMICK: I think we need to  
24      look at it and see what does it mean for our  
25      interpretation.

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1 MR. RUSSELL: I agree. We're going to  
2 following the testing, observing some of it, and we  
3 will probably do some independent calculations with  
4 the data ourselves.

5 COMMISSIONER REMICK: I agree with Tom  
6 that it would be helpful if you do send us up  
7 something on your plans in that area. I think it's an  
8 extremely important one and conceivably could be a  
9 show stopper.

10 DOCTOR MURLEY: Yes.

11 COMMISSIONER REMICK: Then I really want  
12 to congratulate the staff. I know you've been working  
13 very hard. You've put a lot of obvious management  
14 attention into the reviews. My impression is you  
15 really are managing the process and I want you to know  
16 that I think -- I assume my colleagues join me -- that  
17 we really do appreciate the effort that you are  
18 putting into it. I fear that you probably haven't  
19 reached the peak yet of your effort. That's probably  
20 yet to come. I hope if you do have resource problems  
21 that you will let us know because it's extremely  
22 important. I can assure you the world is really  
23 watching what you're doing. They really are. I'm  
24 just amazed the countries you go to and the questions  
25 they ask about the process we're going through and

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1 they're looking very, very closely at what we're  
2 doing.

3 So, I really do want to congratulate you  
4 and you probably don't want to be asked these  
5 questions in the midst of your reviews, but are there  
6 things like submitting information in computer format?  
7 Would that help you in your reviews and so forth? You  
8 indicated that some comes in in computer format.  
9 Would that be helpful or would that be a hindrance to  
10 you now if people did that to help you in the amount  
11 of time it takes for you to get the information  
12 distributed to people and so forth?

13 MR. RUSSELL: I'm not able to address that  
14 specifically at this time. I would comment that we  
15 are gathering the lessons learned from the pilot ITAAC  
16 reviews we had in January, February and March. We're  
17 organizing to do the reviews differently and when we  
18 complete this we need to take a moment to pause and  
19 reflect on what were the major lessons learned so that  
20 we don't repeat them for the next two reviews.

21 COMMISSIONER REMICK: Yes. And I wouldn't  
22 necessarily ask you to do that right now with all you  
23 have on your plate, but I think it is an important  
24 question for the future. I still get concerned about  
25 truckloads of FSARs coming into this Agency and then

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1 we send them off to somebody to put them on a computer  
2 so we can analyze and they came from a vendor of a  
3 computer onto paper.

4 MR. RUSSELL: I think clearly it would  
5 speed up the process if it were submitted that way and  
6 put on a local area network. We have had problems  
7 with reviewers not getting access to the data.  
8 Whether that would help us now when we're in what I'll  
9 characterize as the pen and ink mode in mark-ups of  
10 SSAR submittals and we're doing reviews on very  
11 informal documentation, that process is very labor  
12 intensive and it's time consuming.

13 COMMISSIONER REMICK: Yes.

14 MR. RUSSELL: So, if there's a lesson to  
15 be learned, it's that we need to get a process by  
16 which the vendors can provide quick turnaround on  
17 changes to applications such that we then have quality  
18 documentation we could use. Whether it's in  
19 electronic format or hard copy is less significant.  
20 But electronic format would get it to all the  
21 reviewers that need to have it much more quickly.

22 COMMISSIONER REMICK: Again I really  
23 congratulate you on your effort and express  
24 appreciation. I hope you pass that on to the  
25 reviewers who are doing the hard work also.

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1 CHAIRMAN SELIN: Commissioner de Planque?

2 COMMISSIONER de PLANQUE: I have no  
3 further questions but certainly agree with  
4 Commissioner Remick's kudos.

5 CHAIRMAN SELIN: Okay. I have three -- I  
6 do identify with what Commissioner Remick said. I'd  
7 like to go to the resource question.

8 I've heard no place where you're going to  
9 have -- we have any extra resources. Not only do you  
10 have a large number of people who have to do this work  
11 and if they are less productive or something goes  
12 wrong, it will take longer. You have other places  
13 where you're going to go out and grab additional  
14 people for task forces but nothing the other way, I  
15 assume.

16 MR. RUSSELL: That's right.

17 CHAIRMAN SELIN: So, in addition to the  
18 time risk and the quality of work, there is the  
19 general productivity question. Everybody has got to  
20 be healthy and productive. No letdowns, depressions  
21 or anything. So, it's really a tough haul from a  
22 resource point of view. Is that --

23 MR. RUSSELL: That's correct. That's why  
24 I don't want to turn this massive effort on an ITAAC  
25 until management is really convinced that the quality

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1 of the information from the vendor would support it.  
2 There would be nothing more frustrating than to have  
3 several people geared up to do reviews and find out  
4 that they cannot do the reviews because there's not  
5 adequate information for them to review.

6 CHAIRMAN SELIN: Did you answer the  
7 question earlier that Mr. Crutchfield raised about the  
8 quality of submissions? Do we have any reason to  
9 believe the quality is going to be good or bad or is  
10 it just --

11 MR. RUSSELL: We have some concerns which  
12 are scheduled for discussion next week with GE  
13 addressing what I will characterize as some quality  
14 issues. They've been raised before and I think some  
15 of it is a result of dealing with draft materials and  
16 materials that are changing very quickly. But that  
17 issue, we've had cases where material that we've  
18 audited in some cases is being done by vendors  
19 supporting the GE review and the structural area does  
20 not match the SSAR and does not match the ITAAC that  
21 have been submitted, so the question becomes what  
22 design is it that we're supposed to be reviewing the  
23 ITAAC against.

24 We'll have a number of examples to  
25 discuss, but that is an issue and it's one that raises

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1 questions in my mind as to whether we should proceed  
2 on this massive effort until we have a QA SSAR  
3 submittal so that we know what the ITAAC are based  
4 upon. We're asking a lot of the reviewers if they're  
5 continuing to review this based upon draft materials  
6 and markups when we have literally a few hundred  
7 confirmatory items that have to be confirmed in an  
8 SSAR submittal when it comes in.

9 MR. CRUTCHFIELD: But I think --

10 DOCTOR MURLEY: If I could add a point to  
11 that.

12 Oh, go ahead, Denny.

13 MR. CRUTCHFIELD: I think in general  
14 though if we would look at the quality of what we've  
15 been seeing over the past three or four months versus  
16 the quality of what we saw about a year ago, it has  
17 substantially improved.

18 MR. RUSSELL: It's improved. The quality  
19 has improved, but it's --

20 MR. CRUTCHFIELD: Do we still have some  
21 problems and some holes and some issues where things  
22 get boxed up against each other and don't quite agree,  
23 the answer is yes, we do, and it's getting more  
24 critical now as we're getting near the end.

25 CHAIRMAN SELIN: You know, I'd like to

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1 make it absolutely clear that the responsibility for  
2 the quality of the work is the vendors and not the  
3 staffs. On the other hand, we have I wouldn't say  
4 commitments, but there are a lot of people, as  
5 Commissioner Remick pointed out, all over the world,  
6 ranging from Capitol Hill to places 13,000 miles away.  
7 And if it turns out after your discussions next week  
8 that changes in either schedule or resource  
9 allocations seem to be appropriate, I assume you won't  
10 wait until the next update to tell us about it.

11 MR. CRUTCHFIELD: That's correct.

12 CHAIRMAN SELIN: Not to end on a low note,  
13 but let me go back to 287A. I've now read the  
14 paragraph about what the staff plans to do with the  
15 Commission's final comments and it's not clear to me  
16 how it coincides with your remarks, Mr. Crutchfield.  
17 In other words, whether we have a problem or not. Do  
18 you have the document there?

19 MR. CRUTCHFIELD: Yes.

20 CHAIRMAN SELIN: Page 2 just above the  
21 recommendation. You see the short paragraph, "After  
22 it receives the Commission's final comments, the staff  
23 will revise SECY-92-287?" Do you have the paragraph?

24 MR. CRUTCHFIELD: Yes.

25 CHAIRMAN SELIN: That seems to say that

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1 you're going to take the comments and publish a  
2 proposed certification rule in the Federal Register  
3 and the public comment is our normal -- nothing other  
4 than our normal comment in how we do any rule.

5 MR. CRUTCHFIELD: Correct.

6 CHAIRMAN SELIN: In other words we're not  
7 putting out a separate discussion session, we're  
8 following our notice and comment procedure for the  
9 generic rule, the rule on form and content for design  
10 certification.

11 MR. CRUTCHFIELD: We're going to put out  
12 a generic rule and ask for comments on that generic  
13 rule. At the time when we get to the ABWR --

14 CHAIRMAN SELIN: That's a separate rule.

15 MR. CRUTCHFIELD: That's a separate rule.

16 CHAIRMAN SELIN: Okay. And of course what  
17 we do there will be informed by the whole process.

18 MR. CRUTCHFIELD: Correct.

19 CHAIRMAN SELIN: But I had the impression,  
20 which now I think is wrong, that somehow we were going  
21 to have a separate discussion session. You've gotten  
22 -- you put your documents in the public document room.  
23 You've gotten approval from the Commission or close to  
24 getting approval from the Commission. You will  
25 publish a proposed rule. You will get comments as we

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1 do in any rule. You will take into account and you  
2 will come to the Commission eventually and say, "Based  
3 on the comments, this is the rule we wish to publish  
4 in final."

5 MR. CRUTCHFIELD: Correct.

6 CHAIRMAN SELIN: No different from what we  
7 were talking about before.

8 MR. CRUTCHFIELD: That's correct.

9 CHAIRMAN SELIN: At the same time,  
10 whatever those comments are, they will inform you as  
11 to what you should do when we get to the first  
12 certification rule --

13 MR. CRUTCHFIELD: First real  
14 certification.

15 CHAIRMAN SELIN: -- be it GE or Combustion  
16 Engineering. So, the process has not changed since --

17 MR. CRUTCHFIELD: If I led you to believe  
18 it was, I was incorrect.

19 CHAIRMAN SELIN: I don't believe you led  
20 us to believe it, but I --

21 MR. CRUTCHFIELD: If I misled you to  
22 believe it, then it was incorrect.

23 CHAIRMAN SELIN: Okay. But what I just  
24 said now is the understanding of the process?

25 MR. CRUTCHFIELD: Yes.

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1 CHAIRMAN SELIN: Nothing has changed  
2 since--

3 MR. CRUTCHFIELD: Nothing has changed  
4 since 287A.

5 CHAIRMAN SELIN: So, it is appropriate for  
6 the Commission to decide whether it needs more  
7 information and then vote to allow a proposed rule to  
8 be published in the Federal Register.

9 MR. CRUTCHFIELD: Right.

10 CHAIRMAN SELIN: Okay. I really don't  
11 have anything to add over Commissioner Remick's  
12 comments.

13 Doctor Murley?

14 DOCTOR MURLEY: Mr. Chairman, I should  
15 mention that as a result of phone calls from the  
16 Department of Energy, who as you know are supporting  
17 some of the design effort on these advanced plants,  
18 they requested a meeting, a public meeting on the  
19 schedules with the licensees. So, we have set that up  
20 tomorrow. We're having a public meeting where each of  
21 the applicants will be in and we'll talk in a little  
22 more detail. It will be consistent with what we've  
23 said here today and the Department of Energy will also  
24 be attending that meeting.

25 I think that's all I had.

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1                   COMMISSIONER ROGERS:    I just have one  
2                   observation.  It seemed to me that the discussion of  
3                   the bridge program and bridge effort was a very  
4                   interesting one and it occurred to me that I know  
5                   you've got so much on your plate and everything is  
6                   being worked on very hard right now that it's hard to  
7                   think about other aspects of this.  But it does seem  
8                   to me this is a very appropriate time to start  
9                   thinking about the training questions of inspectors  
10                  for carrying out inspections and how to do that.

11                 Have you, for instance, thought about  
12                 bringing -- or have you brought the training center  
13                 people at all into the process at this time?  It would  
14                 seem to me that pretty soon is a very appropriate time  
15                 at least to get some thoughts being generated there  
16                 from those folks on what they might offer in the way  
17                 of training programs to carry out this kind of  
18                 activity.  It also relates, it seems to me, very much  
19                 to the question of possibly developing an expert  
20                 system on this.  This is the time to start thinking  
21                 about that.  The people who are doing the work are  
22                 deeply emersed in it.  They've gotten into sync with  
23                 each other.  I'm sure you've all discussed things,  
24                 many, many complex issues and come to a common  
25                 understanding of how to proceed, but that all can be

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1 lost after this process is over if you're not very  
2 careful. Somehow it has to be memorialized. It has  
3 to be provided in a form that can be carried forward  
4 to other users.

5 This group that you've got working now are  
6 not the only people that are ever going to have to  
7 deal with issues with respect to inspections and  
8 acceptance of ITAACs and things of that sort. I think  
9 it's a very important time now to think about how to  
10 perpetuate the kind of common views that you've come  
11 to on how to do these things, what your basis is. It  
12 really compliments in a certain sense the kind of  
13 concerns that Commission Curtiss has raised, I think,  
14 from a legal point of view of what's required, but I'm  
15 thinking more from the standpoint of the training  
16 aspects and the perpetuation of the knowledge and  
17 point of view that's been developed here in this  
18 massive effort that has been going on.

19 I think it's extremely important to pay  
20 attention to it and I know how difficult it is to  
21 include that now as yet another aspect of the things  
22 that you're trying to carry out on a tight schedule.  
23 But I really would ask you to try to get some help  
24 with it, perhaps maybe even through a contract, just  
25 see and take a look at what we're doing and stay out

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1 of your hair, but start to come up with something.

2 DOCTOR MURLEY: Could I tell you what our  
3 thoughts were on that area and see if it's along the  
4 lines that you're mentioning, Commissioner?

5 We see that we're clearly going to have to  
6 have a new construction inspection module. It's going  
7 to be totally different. We're going to have  
8 basically a sign-as-you-go process.

9 COMMISSIONER ROGERS: Yes.

10 DOCTOR MURLEY: We had hoped -- so,  
11 there's two aspects to that. One is we're writing it  
12 now. There is staff devoted to rewriting the  
13 construction inspection module. We had not -- at  
14 least I had not thought about where the training  
15 center might fit in, but that's a very good  
16 suggestion. We will do that.

17 We thought that we might try out this new  
18 process on the Bellefonte plants because we're far  
19 enough ahead that we can use that --

20 COMMISSIONER ROGERS: Yes. I know you had  
21 mentioned that a year or so ago and that you were  
22 planning --

23 DOCTOR MURLEY: -- that system. Yes, to  
24 approve the later stages at least of the Bellefonte  
25 plants. So, that was our form and I think that using

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1 those two things, number one the construction  
2 inspection module revision as the forcing function and  
3 then testing it out on Bellefonte can have the effect  
4 that you seek. But I do need to think about how we  
5 have to get the training center involved because it's  
6 true we're going to have to train construction  
7 inspectors.

8 COMMISSIONER ROGERS: Yes.

9 DOCTOR MURLEY: Because we're down to  
10 very, very few now.

11 COMMISSIONER ROGERS: And you've got to  
12 have the basic point of view that has emerged here in  
13 how to do these things encapsulated.

14 DOCTOR MURLEY: That will be in the  
15 construction inspection module.

16 COMMISSIONER ROGERS: Yes.

17 DOCTOR MURLEY: That concept of ITAAC,  
18 sign-as-you-go, all that philosophy will be in there.

19 COMMISSIONER ROGERS: Well, I would just  
20 urge you to try to get some assistance with some of  
21 these things so you don't have to try to invent these  
22 new ways of doing things here that do exist now. The  
23 development of expert systems is coming along pretty  
24 well and I would just urge you to give a little  
25 thought to how that might possibly be incorporated at

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1 an early stage in our work so that things are  
2 available five, ten years from now when they need it.  
3 What do we really mean by these words that are in that  
4 module? There's always a little bit of flavor that's  
5 got to be there.

6 I'd like to simply add my pleasure with  
7 the very high quality of the work and the presentation  
8 today. I really think that you've done an absolutely  
9 superb job and you really need -- not need, but  
10 deserve high compliments for it. Excellent job, well  
11 done.

12 CHAIRMAN SELIN: I'm struck -- when I was  
13 in the Defense Department we used to do nuclear  
14 calculations in which we had no practical experience,  
15 the three significant figures. Ground warfare, which  
16 had gone back at least to the Battle of Kunai with  
17 essentially no changes except a few technical. We  
18 didn't even know who would win it given the encounter.  
19 I'm struck by how much easier it is to do this stuff  
20 which doesn't exist than to do plant life extension  
21 where we have to deal with real plants and real facts.

22 It comes back with this -- it's not  
23 exactly that, but the one issue that we seem to be  
24 stuck on is the GE level indicator, which is a real  
25 issue coming from real plants. I hope that that

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1 doesn't end up hanging us up just because it's got  
2 practical implications for existing plants. That's  
3 got to be settled as well as some issues have to be  
4 settled.

5 DOCTOR MURLEY: It's a trivial thing to  
6 settle.

7 CHAIRMAN SELIN: Right, but it's got to be  
8 done.

9 Terrific job. Very good. Thank you very  
10 much.

11 (Whereupon, at 11:42 a.m., the above-  
12 entitled matter was concluded.)  
13  
14  
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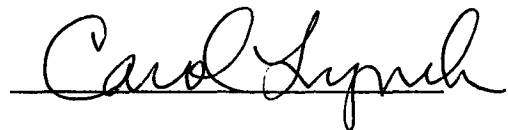
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TITLE OF MEETING: BRIEFING ON PROGRESS OF DESIGN CERTIFICATION  
REVIEW AND IMPLEMENTATION

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: JUNE 2, 1993

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# **PROGRESS OF DESIGN CERTIFICATION REVIEW AND IMPLEMENTATION**



**NRR BRIEFING TO COMMISSION  
JUNE 2, 1993**

# SUMMARY OF CHANGES SINCE LAST BRIEFING

- Two additional applications for design certification under staff review
- Three projects (ABWR, System 80+, EPRI passive URD) scheduled for near-term completion of major staff review activities
- Staff recommendations for 20 evolutionary and passive policy issues provided to the Commission (SECY-93-087)
- Staff positions on all major policy issues affecting evolutionary designs have been developed and are being implemented in the design reviews
- Staff positions for several key policy issues for the passive plant design reviews are being developed

## SECY-93-097 SCHEDULE MILESTONES

	PROJECT MILESTONE			
	Applicant's RAI Responses	DSER Issued	FSER Issued	Design Certification
EPRI Passive URD	Complete	Complete	November 1993	Not Applicable
ABWR	Complete	Complete	March 1994	November 1995
System 80 +	Complete	Complete	June 1994	February 1996
AP600	September 1993	May 1994	November 1995	July 1997
SBWR	January 1994	September 1994	March 1996	November 1997

# DESIGN CERTIFICATION RULEMAKING ACTIVITIES

- Commission guidance on rulemaking procedures for design certification (SECY-92-381) issued April 1993
- A Federal Register Notice inviting public comment on the proposed design certification rule for the evolutionary LWR designs to be prepared after receiving Commission guidance on design certification rule form and content (SECY-92-287A)
- Staff preparing guidance to vendors on the form and content of a Design Control Document (DCD) discussed in SECY-92-287



# STAFF RESOURCE PRIORITIES

1. Closure of open ABWR and System 80+ design issues and safety evaluation report (SER) preparation on design acceptability
2. Completion of the FSER on the EPRI passive Utility Requirements Document (URD)
3. Parallel ABWR and System 80+ ITAAC review and SER preparation
4. Review of vendor testing for passive plant designs
5. Developing requests for additional information (RAI) on passive plant designs as resource availability allows

# MAJOR OPEN TECHNICAL REVIEW ISSUES FOR EVOLUTIONARY DESIGNS

- PRA
- Severe accident closure
- Technical specifications
- Reactor vessel water level indication (ABWR only)
- Human factors DAC (ABWR only)
- Digital I&C diversity
- ITAAC
- Certified design description
- Final SSAR, ITAAC, and certified design description consistency and quality

# STAFF APPROACH FOR IMPLEMENTATION OF ITAAC REVIEW

- Approximately 100 ITAAC systems for each design
- Schedules require parallel review of ABWR and System 80 +
- Seven NRC task groups formed with responsibility for specific ITAAC reviews
- Multi-disciplined approach - several review branches represented on each task group
- Management accountability

# MAJOR REMAINING ACTIVITIES FOR EPRI PASSIVE URD FSER

- Resolution of regulatory treatment of non-safety systems (RTNSS) achieved May 20, 1993
  - Preparing Commission paper on technical approach
  - Close remaining open issues based upon EPRI letter
- FSER under preparation
  - Nine chapters in review now
  - Some delay beyond July 1993 possible due to late RTNSS resolution
- Expect ACRS meeting September/October 1993
- FSER issuance by November 1993 still possible

# **MAJOR ISSUES AFFECTING REVIEW PROGRESS FOR PASSIVE LWRs**

- **Completion of review of ABWR, System 80+, EPRI passive URD SERs**
- **Vendor test program completion and analysis of results**
- **Early integration of PRA and severe accident issues into design reviews**