UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON PROGRESS OF DESIGN CERTIFICATION REVIEW AND IMPLEMENTATION - PUBLIC MEETING

Location: Rockville, Maryland

Date: Tuesday, December 20, 1994

Pages: 1 - 35

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BRIEFING ON PROGRESS OF DESIGN CERTIFICATION REVIEW AND IMPLEMENTATION - PUBLIC MEETING

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Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Tuesday, December 20, 1994

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

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STAFF SEATED AT THE COMMISSION TABLE:

KAREN D. CYR, General Counsel
JOHN C. HOYLE, Acting Secretary
JAMES TAYLOR, Executive Director for Operations
WILLIAM RUSSELL, Director, NRR
ASHOK THADANI, Associate Director for Inspection and Technical Assessment, NRR
R. WILLIAM BORCHARDT, Director, Standardization Project Directorate, NRR
WILLIAM TRAVERS, Deputy Associate Director, Advanced Reactors and License Renewal, NRR

P R O C E E D I N G S

[10:00 a.m.]

CHAIRMAN SELIN: Good morning, ladies and gentlemen.

The Commission is pleased to welcome the staff to brief us on the progress of design certification review and implementation. This is one of the most intense and important undertakings that we've been engaged in for the last several years. There have been several major milestones accomplished in the last few months.

As I'm sure people realize, final design approvals have been issued both for the advanced boiling water reactor and for the Combustion Engineering System 80+ in July and the final safety evaluation reports were published for the EPRI Passive Utility Requirement Document in August. The staff has also completed the AP-600 Draft Safety Evaluation Report and the CANDU acceptance review last month.

I understand that the staff's efforts in development of a rulemaking package for the design certification of the two evolutionary reactors is near completion. I guess you guys, if you really had a flare for the dramatic, would just say, "Thank you very much," and leave. But I'm sure there are a few more details that you could add to that overview.

Mr. Taylor?

MR. TAYLOR: Good morning. With me at the table, Bill Travers, Ashok Thadani, Bill Russell and Bill Borchardt, all from NRR.

You're right, Mr. Chairman, we will hit some of the details of where things stand this morning and the presentation will be given principally by Bill Borchardt.

MR. BORCHARDT: Good morning.

CHAIRMAN SELIN: Good morning.

MR. BORCHARDT: The Commission was last briefed on the status of advanced reactors in January of this year and our most recent report to you was dated September of this year and covered the period from March to August. This is our semi-annual status report on advanced reactors.

Today's briefing is intended to provide an overview of each of the Part 52 design certification projects, including the development of the proposed design certification rules for the two evolutionary designs, as well as an update on some related staff activities such as the combined license and evaluation of fee recovery practices for design certification reviews. We have not included a discussion of specific technical issues today, but we are going to request a Commission meeting in the next several months to discuss some specific technical issues relating primarily to the passive designs in the next couple months.

CHAIRMAN SELIN: Now, that's good because I gave a speech in which I gave a general description of where we stood with one of the passive designs and I got a letter from the vendor saying, "Oh, no, that's not right at all. That's Y, not X." So, it would be very useful to go through just where we stand.

MR. BORCHARDT: There's quite a wide range of technical issues as we get deeper into the review we're finding to be very important. For that reason, we thought a separate Commission meeting would be worthwhile.

CHAIRMAN SELIN: That would be most welcome.

MR. BORCHARDT: Could I have slide 2, please?

[Slide]

MR. BORCHARDT: As you mentioned, there's been a number of significant milestones reached since the last Commission briefing, the two final design approvals, completion of the EPRI final safety evaluation report in the EPRI Utility Requirements Document, the draft safety evaluation report on the AP-600. We completed the CANDU-3 acceptance review at the end of November and we are, I hope, finally nearing completion of preparation of the proposed rule. As I'll discuss later, there's still a little bit of work to do there, but I think the end is in sight finally. It's been more difficult than we would have ever imagined, but I think we are pretty close to finishing that.

Slide 3, please.

[Slide]

MR. BORCHARDT: Each of the following slides is broken up primarily. At our last briefing we told you what we were going to do and today we're going to try to close the loop and explain what we did since the last briefing and then our future plans and activities.

On the advanced boiling water reactor, and as you'll see in a couple slides the same is true for the ABB CE System 80+ review, we've completed an independent quality review of the safety analysis report which included a comparison between the proposed technical specifications and the tier 1 documentations. The purpose of that was to ensure that we had consistency between the safety analysis report submitted by the vendor and the FSER prepared by the staff, and then the tier 1 information that will be part of the proposed rule. We wanted to avoid at all costs any conflict of information. The last several months of the design review process were very dynamic with a lot of interaction between the vendors and the staff and we thought it would be prudent to do an independent evaluation to make sure there were no disconnects. So, we've completed that on both designs.

We had extensive ACRS interaction with both of the evolutionary designs, resulting in recommendations from the

ACRS to go forward with a final safety evaluation report and a final design approval.

On the ABWR, we issued the final design approval on July 13th and that was really the culmination of over six years of effort on the part of the staff and GE, a similar time frame for CE, and a first-of-a-kind type of review using the Part 52 process. So, it took a little bit longer than maybe we had expected, but it did make it through it and did show that Part 52 would work.

On ABWR, the design control document has been submitted with several revisions and you can see the dates there. It's required extensive interaction between the staff and General Electric, far more work and time than we would have expected. We thought it would be purely administrative. It turned out to be a greater effort on both of our parts to prepare the design control document. But we expect that we are close to the end of that also. The areas that required some more --

COMMISSIONER ROGERS: Yes. Could you just give a little flavor of what the --

MR. BORCHARDT: Yes. In the areas of severe accidents, treatment of the PRA in the rulemaking document, I'm talking about in the design control document, and the designation of the tier 2 star items, those items that we were going to require prior staff approval before changes

were made by a COL applicant. It turned out not to be quite as easy as we thought it would be.

Slide 4, please.

[Slide]

CHAIRMAN SELIN: Mr. Borchardt, where did you end up with the living PRA? How did that get settled? Is it settled?

MR. RUSSELL: We're going to be coming back with a proposal for rulemaking later to the Commission. That was basically the long-term resolution. We have sufficient detailed information in the application now for the insights and the other activities. The use of the PRA during a COL phase would be subject to a separate rulemaking.

CHAIRMAN SELIN: Because it's now 1994. The first order could easily be a decade from now. If this design is to be kept fresh, as much as we might like the idea that we're just going to freeze it, we can't really be -- there will be changes and therefore there will be changes in the PRA and this whole standardization, but still with some possibility for clearly controlled dynamisms.

MR. BORCHARDT: We've made it as clear as we possibly can that the staff will want to see an updated PRA at the time of COL application. We've done that for the time being via a COL action item which is in our FSER, also in the design control document which makes it very clear

that that's what the staff expects to see. An independent and more formal mechanism will be the rulemaking Bill Russell referred to.

The staff provided what we hope will be the last set of comments on the design control document for the ABWR about two weeks ago. After GE addresses those, makes the required changes to the design control document, the staff will do one final review of that and then we would expect that it will be in a position where it could support a rulemaking activity.

On future actions and activities, like I mentioned, GE needs to turn around the comments that we recently provided. The December date won't be made there that's listed in the first bullet. I don't think it's possible for GE to provide the information by the end of this month, but I think early January is certainly within reason. It will not take the staff very long at all to do what remains to be verified.

Then after that, we are in a position to be ready to issue the notice of proposed rulemaking which will include an environmental assessment on the ABWR design.

COMMISSIONER ROGERS: Any estimate of when that would take place?

MR. BORCHARDT: Well, we'll talk in ten slides or so about the design certification rule. That's, right now,

the pacing item. We're resolving some last minute comments with OGC from ourselves and I think we have all of them resolved now. It's just a matter of coming up with acceptance language.

MR. RUSSELL: We are intending to send the proposed rulemaking to the Commission as soon as we resolve those issues and we'll not hold that up waiting for the DCD. Do, when the DCD is completed, we'll be ready to go with it and the Commission will be considering the actual language in the proposed rule in parallel with the final QA activities. So, we're hoping that we can get the proposed rulemaking package, the SECY, to you yet this calendar year.

COMMISSIONER ROGERS: Oh, really? Very interesting.

MR. TAYLOR: That's my Christmas present from the staff.

CHAIRMAN SELIN: Let's redefine calendar year. You guys are like a football team in their end zone. You're going to get a touchdown, but it might take six or seven downs.

MR. BORCHARDT: On slide 5.

[Slide]

MR. BORCHARDT: As you can see from this slide, the actions and activities on ABB/CE design are identical to those that we did on the ABWR. The interactions on the

design control document preparation were the same. The same issues were the hard spots. In fact, we approached it pretty much generically so that the same resolutions would apply to both designs. We tried to keep them as absolutely consistent with each other as we could. So, the difficult parts on CE were also the treatment of PRA, severe accidents and tier 2 star identification.

Slide 6, please.

[Slide]

MR. BORCHARDT: The design control document for the System 80+ appeared in our office yesterday. So, this slide is a little bit out of date. The staff will begin reviewing that pretty soon. It will take us, I think we've estimated, about a month to go through. This is our first thorough look at the System 80+ design control document. At this point we can't make any judgments about how far away we are from ultimate resolution. Following acceptance of the design control document, we'll be ready to publish the proposed rule for the System 80+.

Slide 7, please.

[Slide]

MR. BORCHARDT: Moving to the passive design, the Westinghouse AP-600, in January of this year we were still in the early phases of the design review generating requests for additional information and we continue that activity up

to the current time. In July of this year, we, through extensive interactions with Westinghouse, developed what we consider to be an optimistic schedule for review of the AP-600. You can see the major milestone dates on this slide. One thing I needed to point out, that there is some vulnerability in this schedule and primarily it has to do with the second sub bullet there, the issue of the DSER and the supplement for the test program, because there is some risk that if the test program were to identify some design weaknesses or some design changes that were necessary, that would throw then into question the DSER conclusions which we just issued in November. So, it may cause some rework or some reevaluation to be performed of the draft safety evaluation report.

Also in our transmittal letter to Westinghouse, we identified a number of areas that we think need to have significant attention paid to and that is the PRA revision needs to be completed and submitted to the staff to reflect some design changes and modifications that have been made since the original PRA submittal. Incorporation of ITAAC lessons learned is a potential problem for this review in that there is some incentive, we believe, or some desire on the part of Westinghouse to deviate somewhat from the lessons learned on the evolutionary design ITAACs because of the passive design philosophy of AP-600, Westinghouse feels

that it might be appropriate to have different philosophy behind some of the ITAAC. That would require us to rereview that whole approach rather than just using a cookie cutter approach in transferring directly the lessons learned from the evolutionary. If that becomes very difficult, that could have a scheduler impact.

CHAIRMAN SELIN: I understood every word you said, but I have no idea what that means. Can you give me an example?

MR. RUSSELL: Westinghouse is proposing to do the ITAAC somewhat differently from the standard that was used on ABWR and CE 80+

CHAIRMAN SELIN: Can you give an example on how would -- you know, what a Westinghouse ITAAC would look at compared to the CE ITAAC, what an approach would look like? How would it differ? Is there any concrete example that you could give to --

MR. RUSSELL: We still don't have all the ITAACs. So, I'm not sure that we can give you an example yet. They've just indicated that they are proposing to do it somewhat differently than what has been done in the earlier two reviews. So, we're just acknowledging that to the extent it is different, we have to see. Clearly there are differences in systems and design, but they can be covered in essentially the same three column format of the design

description, the mechanism for demonstrating it and then the acceptance criteria with the design description captured in tier 1 documents. To the extent they want to handle some generic issues differently than were handled, for example equipment qualification, some of the configuration ITAACs, whether you want to have the same detail in the drawings that were used previously, that process and methodology is now well understood by the staff. To the extent they want to do it differently than what we've done before, that's their prerogative to propose it, but we would have to review it and understand it.

CHAIRMAN SELIN: But we haven't yet seen what they mean when they said they want to do it differently. Okay.

MR. BORCHARDT: Slide 8, please.

[Slide]

MR. BORCHARDT: On this slide, we just show a numbers rundown of the draft safety evaluation report. Although it's inappropriate to focus solely on numbers at this stage, there is a large number of open items in this draft safety evaluation report, larger than any in the previous draft DSERs. It's going to create a challenge for both Westinghouse and ourselves to keep track of this many items, especially in recognition that the numbers will fluctuate. There will be new open items probably coming out of the supplement that will be issued on testing program,

and as meetings are held between the staffs it's likely the number may, in fact, go up before it starts to go down as the staff identifies new concerns and new issues and Westinghouse brings new design information to the table for review.

COMMISSIONER ROGERS: You mentioned this is quite a large number compared to the others. Is there any particular reason for that? Does it relate to the passive features or is it just general over the whole design?

MR. BORCHARDT: Well, I think there's a lot of reasons but you certainly can't overlook the fact that this is unlike any other design we've looked at before and the staff just has a lot of questions. Also, we wanted to get the DSER out on the schedule that we had agreed to. In order to do that, there is some inconsistency between open items on level of detail. There are some very specific open items which have an easily recognizable end point. You can reach agreement on a specific issue document and close it out. There are others that are more generic in that it has more far reaching implications through the rest of the design. But regulatory treatment of non-safety systems is something we've briefed the Commission on before. It's very important to the review of the AP-600.

That may constitute several open items, but the impact of those and the amount of work that will have to be

done between Westinghouse and the staff is enormous to complete those. So, you can't assign a half a day to each of these open items and work them off that day. There's too much inconsistency on degree of difficulty for completing and resolving the issues.

In order to keep track of this, we are developing an integrated open item tracking system with Westinghouse. It will be used by both Westinghouse project management and NRC and it will include the DSER open items, issues coming out of the test program, outstanding requests for additional information and meeting commitments and subsequent open items that come out of those meetings with Westinghouse.

[Slide]

MR. BORCHARDT: On slide 9, because we have over 1,000 open items, we are in the process of identifying a top 50 significant open items list as a measure of progress for the overall review and to identify those issues that may require early involvement of senior management by both Westinghouse and NRR. As has been the past practice, however, if there's any policy issues that come out of the review, they will be brought to the Commission separately via a Commission paper and not through this list, although they will probably be on this top 50 list also. We will go to the Commission with Commission papers for specific decisions as information becomes available.

One topic that we've also mentioned to the Commission before was proprietary information. Right now the staff has a problem -- this is a problem area for a number of reasons. One is that it's a drain on staff resources to do the proprietary evaluations of the information Westinghouse claims to be proprietary. So, it's a resource impact on us. When we're doing that, we're not doing review work that gets us to the end, that gets us to a final design approval. But down the road we see a potential problem in that the safety analysis report submitted by Westinghouse now, there is some feeling that it could not support a design control document that could go into the rulemaking process. The design control document is the public document that the public would review in order to participate in any possible hearing. Essentially it's just the safety analysis report minus the proprietary information in the PRA and some other things. But if you took all the proprietary information out of that, we don't think the DCD could stand alone and serve its purpose. So, between now and the FSER, we're going to have to address this. It may or may not turn out to be a difficult problem, but it is a potential problem.

CHAIRMAN SELIN: Your instincts are exactly right. The Commission has made very clear that there has to be sufficient non-proprietary information to support the

finding and then the proprietary information could be used to give the staff more confidence. But you can't have a vendor say, "Trust me," tell the public, "Just trust me. It's really here, but you can't see that information." Your instincts are right and I'd like to reinforce your concerns on that.

MR. BORCHARDT: I just picked out four selected topics. I'm not going to discuss any of these today, but these and others will be the subject of the future Commission meeting I referred to earlier.

[Slide]

MR. BORCHARDT: In slide 10, the future actions with Westinghouse is primarily to resolve the open items that were identified in the draft safety evaluation report, to issue the draft safety evaluation report on the testing program. That's scheduled for October of '95. In the near-term, we're expecting revisions to the AP-600 PRA and the safety analysis report late this year, early next year so that we can begin to work off those open items and then continue periodic senior management meetings, focusing primarily on some subset of that top 50 list I referred to earlier. And ACRS activities will begin next month, in fact. There's a full day briefing of the Subcommittee on the AP-600 design. So, we expect that to continue over the next several years.

COMMISSIONER ROGERS: When do we expect our test program to be complete? I understand that Westinghouse has completed their test program.

MR. BORCHARDT: Right. You're referring to the ROSA?

COMMISSIONER ROGERS: Well, and also we've talked about the OSU test as well.

DR. THADANI: The ROSA program, the first phase, the initial ten tests have been completed, and the second phase will begin, I believe, in April of next year and will last for a period of three or four months approximately. So, we should have most of that information to us before we issue our safety evaluation report on the testing program. The OSU schedule I don't recall, but it should be beginning fairly soon.

MR. BORCHARDT: Slide 11, please.

[Slide]

MR. BORCHARDT: Moving to the CANDU design, we received the application for the CANDU 3U and that was submitted on September 30th. The staff completed a 60 day acceptance review on November and issued a letter to AECLT documenting the results of that application review. The results of that primarily are that we docketed the application but we did say that there was a significant amount of information missing. The ITAACs, tech specs,

severe accidents, mitigative and design alternatives, were not provided in the SAR and the staff will eventually need to see that information. There was only a level 1 PRA conceptual information provided and we need the full PRA to do the full design review. Then the topic of use and validation of the Canadian computer codes, we need more information on that.

Primarily we said that we would not issue a firm schedule until we had a schedule from AECLT on when this information would be provided, but that the staff is ready to begin review.

[Slide]

MR. BORCHARDT: On slide 12 you see that in their application, AECL requested that we don't conduct or begin our thorough review of the design until there was agreement on schedule and cost for this review. So, the first step in addressing this was the results of the application, the acceptance review. That's being reviewed by AECLT now and we would expect to hear back from them their desires on whether or not they would like us to initiate the design review. But before we begin that, we need a schedule from them on when the missing information is going to be submitted.

Between now and then, there will be some limited design review work going on primarily in the area of void

reactivity and shutdown system reliability and they would just be in the form of questions that we'll be asking AECLT.

MR. RUSSELL: In addition, when we met with AECL in Canada last week when Jim and I were up there, we indicated that we're going to work with them following a Commission decision on a paper as it relates to confirmatory research activities. You have requested that we address this both on the passive designs as well as the CANDU design. That paper is on its way to the Commission. Once we have Commission guidance back on that issue, we will develop a better estimate of what the resources would be and we would interact with AECLT on the schedule, so that we would hope to be able to initiate the review on a full scope basis in the early part of fiscal '96 or late fiscal '95. At this point in time it's a low level of resources and we're addressing some generic issues which will involve the Commission. So, we would hope that by about mid-April we would have a better understanding of schedule, resources and the policy issues decided such that the applicant would be able to make a decision about continuing with the review and lifting essentially the hold that they've put on commencing the review.

MR. TAYLOR: We did make the point that what we could give them with regard to cost was a best estimate type of cost and that's what we'll try to do. They seem to want

to pursue this process with us and we indicated to them that if they were to do so we'd really be in the major work toward the beginning of the next fiscal year. That seemed to be -- these were part of the discussions we had and that seemed acceptable to AECL. So, the next thing, we can get this paper to the Commission. It's on its way to me, unless it just got to my office, but we'll move that promptly to the Commission.

COMMISSIONER ROGERS: Just before we leave this subject on the computer codes, are we asking for the same kind of V&V for their computer codes of the U.S. vendors on their codes? Is it complete parity there with respect to what our expectations are for V&V on computer codes?

MR. RUSSELL: Not only V&V but quality assurance requirements that went into code development. We're using the same approach for the two. The only difference is we expect to review the research work that may have been done already to support correlations and other things that they're using in their codes. So, we'd be reviewing those completed test programs and decide if they are adequate to support as compared to initiating a test program. At this point we don't see that there would be a need for additional testing or test facilities subject to our review of the quality of the work that's already been done. But we see that that's a fairly significant effort and it could be,

based upon some preliminary information from the acceptance review that this is going to be harder because it may be that their codes were not developed using consistent standards with what we would expect today for codes that are used in licensing activities.

So, we identified this as a hard spot. It's a majority or a significant majority of the amount of research support directly to NRR and this is one where we're using the Office of Research as we would use a national laboratory. That is, their people are better suited to review experimental programs, the test results and provide information as to whether the correlations are appropriate or not. So, they are, in fact, performing direct licensing review to support the application and we'll be discussing that in more detail in the paper we're sending to you.

COMMISSIONER ROGERS: Okay. Good. Good.

MR. BORCHARDT: Slide 13, please.

[Slide]

MR. BORCHARDT: On the EPRI utility requirements document, we issued the final safety evaluation report on the passive plant URD in August of this year and this completes the original scope of work designated for the EPRI URD review. In a related topic, we issued a staff evaluation of the passive autocatalytic recombiners in October 3rd of this year. There's two primary areas of

potential future activities with EPRI and that has to do with possible revisions and updates to the utility requirements document and the general topic of emergency planning. We have not been informed specifically of any actions on EPRI's part relating to either of those, although we do understand that EPRI plans to keep the URD up to date. But whether or not they would ask for NRC staff review and approval of those updates has not been determined.

MR. RUSSELL: I did meet with EPRI and the utility steering committee that's responsible for funding the URD work. They had a meeting in Baltimore about two weeks ago. At that meeting, I identified some areas that I felt would be appropriate for potentially generic work to resolve issues, principally as it relates to combined operating license issues, which are not hardware design certification issues. In each of the safety evaluations we've issued in the design control documents, et cetera, there are quite a number of COL action items. Some of these relate to softer issues associated with operations, procedures, et cetera. Some of those may be appropriate to review and address generically. So, there may be some benefit to doing some issues generically, resolving them with either EPRI first or with NEI. But those issues need to be engaged and they're principally the technical issues we've been facing in a COL proceeding that have not been addressed to date. So, there

maybe some future work in that area.

We do not see future work as it relates to the passive reviews generically. We've essentially completed that effort and we are now into the Westinghouse AP-600 review and the SBWR testing program. In fact, based upon policy guidance from the Commission, were there to be generic issues identified by EPRI, we would necessarily delay those reviews to resolve it generically. We're also finding it's very difficult to resolve some issues generically. You need to see the details of the design. So, we've essentially concluded as it relates to design review associated with an FDA for a design certification that the generic activities are essentially complete and we now need to get on with doing the design-specific reviews. But there may be some activity that's appropriate as it relates to requirements documents related to the COL proceeding in the next phase. So, we are encouraging EPRI to look at that and to make a proposal back to us.

MR. BORCHARDT: Slide 14, please.

[Slide]

MR. BORCHARDT: Moving to the SBWR, the staff suspended our design-related review activities in August of this year at GE's request. They sent us letters, two letters, dated January 7th and 15th, asking us to stop design review activities. The GE and NRC staff activities

since then have been focused on a reassessment of the test and analysis program in support of the SBWR design. GE's integrated test and analysis program document was reviewed by the staff and a draft evaluation of the technical approach was issued to both GE and the ACRS in November. This will be the subject of future ACRS meetings and ongoing dialogue between GE and the NRC staff, the result of which will be a staff safety evaluation on the test program in support of the SBWR design.

NRC's independent test loop, PUMA, design is nearly complete.

Slide 15.

[Slide]

MR. BORCHARDT: Between now and resumption of the design review activities, all our actions will focus on the test program, including monitoring of testing activities and QA inspections at the test facilities. The evaluation of the design review schedule will be based on the results of the test program, the results of the staff's evaluation of the test and analysis program description submitted by GE, and then the reassessment performed by GE to determine whether or not they want us and when to begin design review activities again. The staff is ready whenever GE makes that determination to resume our review.

Slide 16.

[Slide]

MR. BORCHARDT: And now I'll shift to the design certification rulemaking activities for both the ABWR and the System 80+ designs. We're doing these exactly in parallel with each other at this stage. Although they may not be published in the Federal Register the same day, the activities regarding the rule are identical. In fact, we've really just been working on one rule and then we'll just split it out once we get --

COMMISSIONER ROGERS: They'll come out as two separate rules though?

MR. BORCHARDT: Yes. Right. And then will be Appendices A and B to Part 52 in final form.

We are preparing, you haven't received it yet, but we're preparing a memo to the Commission requesting approval to publish the proposed rules in the Federal Register. You will see in there a complete rulemaking package, including the proposed rule, the section by section analysis, evaluation of comments and the solicitation of public comment on the environmental assessments for each of the two designs.

Slide 17.

[Slide]

MR. BORCHARDT: This is just an outline of the design certification rule. It's identical for both, as I

mentioned earlier. The two areas that I think are of the most interest to the industry now are the areas of applicable regulations and the change process, both of those unique to Part 52. That's been part of the reason that it's taken us awhile to get to this stage. But I believe that we are near the end of resolving comments from within NRC and the staff prefers to just get on with it and publish the proposed rules in the Federal Register.

The industry has requested, and I believe you received a letter from NEI requesting a review of the proposed rules before they're published in the Federal Register. The staff's view is, like I said, we would rather just get it in the Federal Register, open it up to the public and let the process work through and address any comments and concerns through that mechanism rather than going into maybe what could be another six month delay in the Federal Register notice if we go through another round of extensive interactions.

Slide 18, please.

[Slide]

MR. BORCHARDT: Each of the topics on this slide have been addressed previously with the Commission and I'm just going to try to give a brief update on where we stand.

There's two fee-related topics being worked on. One has to do with the billing practice on the vendors for

activities after issuance of the final design approval. This would include preparation of the rulemaking. And for both evolutionary designs, the way it worked out, preparation of the design control document as being done after issuance of the final design approval. Then on a separate topic, which paper is being developed to be sent to the Commission, on the billing for activities conducted by the Office of Research for all designs, and that paper is in final development and concurrence within the various offices of the staff.

On regulatory treatment of non-safety systems, about a year ago, I guess, we sent a Commission paper up and we had a briefing on this paper. We received the SRM. It provided some specific guidance and some changes and some areas where the Commission requested additional information. We're in the process of responding to that SRM, providing an updated Commission paper on this general topic and specifically on control room habitability, on reliability assurance program and IST, which were the three specific areas that were addressed in the SRM.

On the combined license, there are two separate activities going on. The combined license form and content, there was a draft Commission paper prepared about 18 months ago. We sent it out for public comment in draft form. We've had a number of interactions with the industry and

we've made some changes to that paper. Because there's no real rush to finalize that paper, we are going to be sending it to the Commission in draft form again, requesting approval to send it back out for another round of interactions. Since we have the time to refine our positions, we thought it would be the prudent thing to do.

On the construction inspection and ITAAC verification, there was a Commission paper issued on December 5th, which gives just a broad overview of inspection plans at future construction sites.

There have been very few, if any, changes to the early site permit activities and the only staff activity in this area is ongoing development of some regulatory requirement and guidance. This is purely at the staff level with no involvement of DOE or any possible applicants.

One additional paper that I didn't list on here but we will try to get to the Commission in mid-'95 is a summary of some AP-600-related issues, passive design-related issues which we have sent to the Commission in other forms, but what we wanted to do is to make the linkage between the AP-600 design and these other policy issues such as source term. Like I say, mid-'95 is when we would hope to get that up to the Commission.

That completes my briefing.

CHAIRMAN SELIN: That's fine. I had a question

about the passive reactors. Is there any further analysis being done in connection with their potential foreign sales that feeds back into the design work or is this basically all vendor generated work?

MR. RUSSELL: I don't believe that we're able to respond to that. Right now we're in the review process. We don't know what the motivation is for some changes. There has been some discussion about a potential increase in the power output of the passive design. That's basically just at the discussion level. We're still reviewing the AP-600.

CHAIRMAN SELIN: On the one hand the experience in Japan and to a lesser degree in Korea was very rich and valuable experience in doing the reviews. On the other hand, I want to make sure that we don't spend a lot of time on a design which is different from the one that actually goes, whether it's the CANDU or either one of the light water reactors. So, I guess this is really more of an invitation to the vendors than to the staff to keep us current on their plans.

MR. RUSSELL: Many of the issues, and we did discuss this both with AECB and with AECL, that is whether we are looking at a CANDU 3 or a CANDU 9, is pretty much independent at this stage in the review. We need to resolve the code issues, some of the fundamental design policy issues and we have had experience in scaling up or scaling

down rated power once you understand the computer codes, the safety analyses, the policy issues.

So, we see that there is a great deal of generic activity to be done on each of these designs and it's not clear that a scaling up would be a significant additional increment of work, provided you've agreed upon the particular codes, et cetera, prior to that time that are going to be used and that the test programs are adequate to support that.

CHAIRMAN SELIN: Well, the other topic, since you raised it, are the test programs. I think it is appropriate to wait for a longer briefing on that. I realize test programs are not just to meet regulatory needs. They meet many design questions, et cetera. But the one thing I would really like to avoid is one of the vendors do an extensive test program and then find out afterwards they didn't do the test that would answer the questions that we would have.

But since there have been so many changes in the schedule, I'm just a little concerned about the relation between the NRC program and the vendor program. So, I'm perfectly happy to wait for this more specific briefing. But unlike the evolutionary reactors, here the test program really are central to the certification of the design. So, the Commission will be very interested. Besides, it's more fun to get into test programs than just a paper review. So,

for many reasons we'll be very interested in that presentation.

DR. THADANI: And that was the reason why we thought it was appropriate to separate that, so we could get into some details.

CHAIRMAN SELIN: Commissioner Rogers?

COMMISSIONER ROGERS: Well, I think this question might -- the answer to it might more appropriately be dealt with in this other meeting. But I understand that the Nuclear Safety Research Review Committee met in November to review the staff's plans for confirmatory research for the CANDU reactor. I'd be interested in hearing what the outcome of that is and how that relates to our plans for research. But that can be postponed.

DR. THADANI: We'll pick that up.

COMMISSIONER ROGERS: Yes. So, we'd like to have that as part of that.

Just a general question. There has been more and more computerization of all of the vendor activities and I wonder if we're seeing anything in the wind-up of the design review now and certification process in terms of further electronic communication with the vendors on these issues. Has anything changed or are we still sort of doing it in the old fashioned way?

MR. BORCHARDT: Well, I think we're making

progress and we're using the AP-600 design as a bit of a test platform. There is communication electronically between Westinghouse and NRC staff. In fact, the application for AP-600 is on a separate LAN system for our AP-600 reviewers. It's 40 or 50 people. So, it's not available to everyone in the building. But the entire application, the safety analysis report and supporting documents, are available for review via that mechanism. So, I think that's our first step. We're trying to go slow so we don't get in trouble doing anything ill advised. That seems to be working pretty well.

We also have the staff's FSERs or the safety evaluation reports on the LAN available for all of NRR to access so that they can do the different kinds of searches and see what determinations were made previously.

COMMISSIONER ROGERS: It may be too early to try to work out arrangements like that with the Canadians, but I would imagine that that would be a very good thing to contemplate because they have been out in front on linking their regulatory activities directly through electronic means to the vendor design teams.

MR. BORCHARDT: We're at the very early stages of talking to them about how we would do that.

COMMISSIONER ROGERS: Yes.

MR. BORCHARDT: There's some different equipment

that would be required to set that up. But we're trying to do an evaluation of that.

COMMISSIONER ROGERS: All right. Well, I thought it was an excellent briefing. Thank you very much.

[Whereupon, at 10:53 a.m., the above-entitled matter was concluded.]

CERTIFICATE

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

TITLE OF MEETING: BRIEFING ON PROGRESS OF DESIGN CERTIFICATION REVIEW AND IMPLEMENTATION - PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Tuesday, December 20, 1994

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

Transcriber: Carol Lynch

Reporter: Peter Lynch

DESIGN CERTIFICATION REVIEW AND IMPLEMENTATION

December 20, 1994

DESIGN CERTIFICATION REVIEWS AND IMPLEMENTATION

Project Review Summaries

Design Certification Rulemaking

Related Staff Activities

MAJOR PROJECT ACCOMPLISHMENTS

- GE ABWR FDA Issued July 13, 1994
- ABB/CE System 80+ FDA Issued July 26, 1994
- FSER VOL. 3, EPRI Passive URD Published August 1994
- Westinghouse AP600 DSER Issued November 29, 1994
- CANDU Acceptance Review Completed November 30, 1994
- Preparation of Proposed Rules

ABWR DESIGN CERTIFICATION REVIEW STATUS

Actions Since Last Briefing

- Completed independent quality review of SSAR (TS, Tier 1)
- Completed ACRS meetings and received ACRS letter
- Issued final design approval (FDA) on July 13, 1994
- Design control document (DCD) submittals on August 2, September 9 and October 31, 1994

ABWR DESIGN CERTIFICATION REVIEW STATUS (CONT'D)

Actions Since Last Briefing (cont'd)

- Staff and GE interactions on DCD preparation

Future Actions/Activities

- GE submit revised DCD and staff complete review - December 1994
- Issue NPR for ABWR, including environmental assessment

SYSTEM 80+ DESIGN CERTIFICATION REVIEW STATUS

Actions Since Last Briefing

- Completed independent quality review of CESSAR-DC (TS, Tier 1)
- Completed ACRS meetings and received ACRS letter
- Issued final design approval (FDA) on July 26, 1994
- Staff and ABB-CE interactions on DCD preparation

SYSTEM 80+ DESIGN CERTIFICATION REVIEW STATUS (CONT'D)

Future Actions/Activities

- ABB-CE submit DCD and staff complete review - January 1995
- Issue NPR for System 80+, including environmental assessment

WESTINGHOUSE AP600

Actions From Last Briefing

- **Continued Review of AP600 Design**
- **Developed Optimistic Schedule (July 14, 1994, letter to Westinghouse)**

- Issue Draft Safety Evaluation Report (DSER)	November 1994
- Issue DSER Supplement on Test Program	October 1995
- Final Safety Evaluation Report to Commission	May 1996
- Publish Final Safety Evaluation Report	August 1996
- Issue Final Design Approval (FDA)	September 1996
- Proposed Design Certification Rule	December 1996

AP600 DSER

- **DSER Summary**
  - 1136 Open Items
  - 62 Confirmatory Items
  - 172 COL Action Items
- **Integrated Open Item Tracking System**
  - Joint Use
  - Westinghouse is developing data base and incorporating staff comments
  - Will include DSER items, test program/analyses issues, outstanding requests for additional information, meeting commitments, etc.

AP600 DSER (CONT'D)

- NRR will closely track the "Top 50" significant open items
- Amount of proprietary material in submittals
- Selected key technical issues
  - Implementation of the Regulatory Treatment of Non-Safety Systems (RTNSS) process
  - Probabilistic Risk Assessment/Passive System Reliability
  - Emergency response guidelines (ERGs)
  - AP600 Source Term

FUTURE ACTIONS

- Interactions between the staff and Westinghouse to resolve open items identified in the Integrated Open Items Tracking System
- Complete review of test program data and analyses reports
- Review revisions of PRA and SSAR (expected late 1994, early 1995)
- Continue periodic senior management meetings

CANDU 3U

- **Application for Final Design Approval and Design Certification submitted September 30, 1994**

- **Staff 60 day Acceptance Review Completed November 30, 1994**

  - **The Inspection, Tests, Analyses, and Acceptance Criteria (ITAAC), Technical Specifications, Severe Accident Mitigative Design Alternatives (SAMDA) and the Failure Modes and Effects Analyses (FMEA) were not provided in SAR**

  - **Only a Conceptual Level I PRA provided in SAR**

  - **Verification and Validation for Canadian Computer Codes need to be provided**

Future Actions/Activities:

- In Application Letter, AECLT Requests "...That no major activities be initiated by the NRC beyond the acceptance review until there is full agreement on schedule and cost of this effort."

- The staff plans only to continue limited work on some key issues such as void reactivity, and shutdown system reliability.

EPRI PASSIVE
UTILITY REQUIREMENTS DOCUMENT

Actions Since Last Briefing

- Final Safety Evaluation Report on Passive Plant Designs published as Volume 3 of NUREG-1242 in August 1994
- Passive Autocatalytic Recombiners (staff evaluation issued October 3, 1994)

Potential Future Activities

- Revisions to the URD
- Emergency Planning

SBWR DESIGN CERTIFICATION REVIEW STATUS

Status

- Staff suspended design-related review activities in August 1994 at GE's request
- GE reassessed test and analysis program (TAP) in response to staff concerns on program scope
- GE's integrated TAP document reviewed by the staff and draft evaluation on technical approach issued to GE and ACRS - November 1994
- NRC's independent test loop (PUMA) design nearly complete

SBWR DESIGN CERTIFICATION REVIEW STATUS

Future Actions/Activities

- Continue monitoring of testing activities, QA inspections of test facilities, and TRACG code review
- Finalize staff's positions on TAP
- Evaluate design review schedule based on test program status and GE reassessment
- Staff is available to review design-related activities when GE is ready

DESIGN CERTIFICATION RULEMAKING FOR ABWR AND SYSTEM 80+

- Memo to Commission requesting approval to publish Federal Register Notice of proposed design certification rules
- Federal Register Notice will
  - A. Propose rules as new appendices A and B to 10 CFR Part 52
  - B. Contain public comment analysis for ANPR and section-by-section discussion of rule
  - C. Solicit public comment on environmental assessment for each design

PROPOSED DESIGN CERTIFICATION RULE OUTLINE (APPENDICES A AND B TO 10 CFR PART 52)

1. Scope
2. Definitions
3. Information collection requirements
4. Contents of the Design Certification
5. Applicable regulations
6. Issue resolution
7. Duration
8. Change process
9. Records and reports

RELATED STAFF ACTIVITIES

- **FEES**
  - Post FDA
  - RES activities
- **RTNSS**
  - Commission Paper responding to SRM
- **COL ISSUES**
  - COL form and content
  - Construction inspection and ITAAC verification
- **EARLY SITE PERMIT**
  - DOE demonstration program has not resulted in an ESP application
  - Ongoing effort in developing regulatory requirements and guidance