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Meeting Title: Brief on Progress of Design Cert. Review & Implementation

Meeting Date: 1/28/94 Open X Closed _____

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON PROGRESS OF DESIGN CERTIFICATION REVIEW AND IMPLEMENTATION

Location: ROCKVILLE, MARYLAND

Date: JANUARY 28, 1994

Pages: 48 PAGES

NEAL R. GROSS AND CO., INC.

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Washington, D.C. 20005
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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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BRIEFING ON PROGRESS OF DESIGN CERTIFICATION

REVIEW AND IMPLEMENTATION

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PUBLIC MEETING

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Nuclear Regulatory Commission

One White Flint North

Rockville, Maryland

FRIDAY

JANUARY 28, 1994

The Commission met in open session, pursuant to notice, at 10:00 a.m., the Honorable IVAN SELIN, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

IVAN SELIN, Chairman of the Commission

KENNETH C. ROGERS, Member of the Commission

FORREST J. REMICK, Member of the Commission

E. GAIL de PLANQUE, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

JAMES TAYLOR, Executive Director for Operations

DR. THOMAS MURLEY, Director, NRR

WILLIAM RUSSELL, Associate Director, Inspection & Technical Assessment, NRR

DENNIS CRUTCHFIELD, Associate Director, Advanced Reactors & License Renewal

WILLIAM C. PARLER, General Counsel

PROCEEDINGS

(10:00 a.m.)

CHAIRMAN SELIN: Good morning, ladies and gentlemen. Obviously this is certification week. We had the GE presentation yesterday, and today we will receive from the staff an overall review of the status of the various design certification efforts.

As we heard yesterday, the review of the first evolutionary plant, the Advanced Boiling Water Reactor, is nearing completion. The staff has conducted an extensive review on the ABBR safety questions, as well as using that experience to develop specifics for new Part 52 requirements, such as the Tier I level of detail and the ITAACs. The design appears to offer significant improvements, and the staff should be commended for their comprehensive review and in proposing and defending the new severe accident requirements.

One of the things that did come up yesterday were a number of relatively small but important issues that GE raised and, in the interest of equal time and also sort of an efficient way of communicating with the Commission, I would hope that sometime during your presentations today, you might discuss the staff's point of view on those questions that came up at the GE briefing yesterday. In general, we look forward to this

presentation.

Commissioner?

COMMISSIONER ROGERS: I wonder if, during your discussion of the various design reviews, you could identify what the critical path items are. I don't know if that's going to be difficult for you to do but, if you could do that easily, I'd appreciate hearing where they are and where the responsibility for them is.

CHAIRMAN SELIN: Mr. Taylor?

MR. TAYLOR: Tom Murley has some opening remarks, and then Denny Crutchfield and Bill Russell will continue with the presentation.

DR. MURLEY: I would just like to respond, Mr. Chairman, to -- we will touch on the certification issues that GE brought up, but a number of their issues had to do with the actual rulemaking, and we had planned to come in with a paper because we've gotten not only GE's comments, but we've gotten a lot of public comments, and we will do that in the context of the Commission paper.

With regard to the critical path items, I think we can indicate for each project what the critical items are. We will do that.

CHAIRMAN SELIN: This paper will be in the very near future?

DR. MURLEY: Yes, it will.

CHAIRMAN SELIN: Thank you.

MR. CRUTCHFIELD: Good morning. We last met in June to discuss the status of Advanced Reactors. Since that time, it's been obvious that both the staff and industry have put a lot of time and a lot of effort in this, both the vendors as well as the other industry organizations.

A lot of progress has been made. We are close to the end on the evolutionary design, which is a big milestone for all of us. Policy issues, we think the majority of those are now out to industry. They are now out available to the public for comment. They have been to the ACRS in many cases. Many of those have been placed in front of you as draft positions, and others have been placed in front of you as actual final staff recommendations.

The passive design reviews are not going as well as we thought, and I'll get to that a little bit later on. What I hope to do is give you a little idea of what we've done so far, some of our accomplishments, where we stand with existing design application reviews, and some of the key issues that are facing us, both policy and technical issues.

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

Overall, we've completed Safety Evaluation

Reports on the ABWR, the PRISM, and the EPRI Utility Requirements Document. We'll talk some more about the ABWR and PRISM. The EPRI Utility Requirements Document has been published. We've been to the ACRS. The key issue there to getting the final document out on the street is the resolution of the regulatory treatment of nonsafety systems issues. That's the thing that we have remaining, that's the outstanding item for that particular review.

We've made a great deal of progress with respect to ITAAC, or the inspections, tests, analyses, and acceptance criteria. We've resolved over 2,000 comments that have been generated by the staff, by independent industry groups that have commented on GE's and CE's ITAACs, by our own independent quality teams, et cetera.

Looking back on it and based on the reviews of those first two documents, it's key, I think, to go along with the staff's proposal that we suggested before, that you do the ITAAC along with the design review.

A proposal had been made earlier to separate the two. We think it is ultimately absolutely necessary that you keep those two things together as you go through the review process. We intend to do the AP600 and the SBWR that way.

We've heard about the design certification rule.

We proposed a workshop. We've held a workshop. We've circulated that rule out for comment. A number of papers have been provided. Comments have been provided back on that, and we're going to go forward with further comments and, as Tom mentioned, a paper on that particular issue also.

We've continued our high level meetings with the vendors, with the Department of Energy. In many of those meetings, we've had the benefit of the Advanced Reactor Corporation sitting in and providing some of their insights there. So, we've coordinated well with all those parties.

Numerous meetings with the ACRS. If I had to look back over the past two or three years, I've been there every month chatting with the ACRS about one or more issues relative to the Advanced Reactors, as has Bill and Tom on a number of occasions. So, we have been extremely busy down there.

I'd like to turn now to the ABWR and where we stand on that certification review. We got Amendment 33 from General Electric Company in December. The quality of that document is better than we had seen before. There are still inconsistencies in there. We are still troubled by those inconsistencies, and they are causing us to have to go back, do a quality check, look at the different

chapters, different sections, make sure they are coordinated and they say the same thing, get that information back to GE, and go back and forth with a couple of iterations.

We are looking forward to an amendment that would wrap up just about everything else, that would take care of these errors, whatever comments the ACRS may have, whatever our review teams come up with that need to be resolved. So, that's what's in the future for there.

We have provided an advanced copy of the FSER to the Commission, and made it publicly available also. There are 14 open items in there, and four confirmatory items. We think we're making good progress on a number of those items. We're coming to closure on those. The ACRS indicates that if we continue to close, we can get a letter in April. We think we'll be in a position to have these things closed sufficiently so they can give us a letter in March.

One of the key open issues that we have is the level diversity question, and I think Bill has a comment or so about that.

MR. RUSSELL: Yes. Based upon comments from the ACRS, we've decided that we should review again the reactor pressure vessel water level issue, and look at it broadly, specifically for the ABWR design, but also for

the AP600 design, and there are differences between the two.

In the ABWR design, there are diverse signals which can actuate emergency systems, such as emergency core cooling. That is not the case in the AP600 design. And so we will come forward shortly with a recommendation that looks at this issue more broadly, so that we do not establish a precedent with this decision that may impact other designs.

CHAIRMAN SELIN: Just to call a spade a spade, it sounds as if AU will be consistent with your schedule. You probably will go along with the GE recommendation in such a way that it's tied to the facts of the design, not based on some generic question about whether one needs alternative sources of information.

MR. RUSSELL: That's correct. We are relooking at the issue. The safety significance for the ABWR is potentially smaller, we think, than the AP600, and we want to look at both of those together and come back, and we hope to do that very shortly. We'll bring this as a separate issue to the Commission.

There is one other open item that could be significant, and this has to do with fuel design limits, the maximum burnup that will be allowed. We are having dialogue on that issue. The staff's position is we should

not authorize burnups beyond that which has been tested and demonstrated. GE would like to leave that silent, and not have that in there, and there is a dispute. So, we think it should not, at this time, go beyond.

We do recognize, however, that this is an issue that could change. Fuel is a consumable. There will be improvements in fuel design with time, and we've agreed on a process for addressing that, but we'd like to give this issue special treatment in Tier 2, and cannot allow a change until such time as the testing demonstrates that higher burnups are appropriate and the staff has reviewed that.

CHAIRMAN SELIN: In effect, you would treat it as one of those Tier 2 star issues.

MR. RUSSELL: That's correct.

CHAIRMAN SELIN: Okay.

COMMISSIONER REMICK: One other item, just to clarify the record. GE made the statement that they were under the impression that you were awaiting Commission response on the FSER for ABWR. I think the situation is we have received it, and only if we have comment, but you are not waiting for any decision from the Commission, am I correct?

MR. RUSSELL: That's correct, on this issue. We had indicated when we went out with a draft that these

were open issues, but the final document is not before the Commission, and we have not sent this up as a separate issue to the Commission. So, the issue, while it is working and it's contained in a Commission that's publicly available, is not presently sitting before the Commission for a decision. That's why we're going to review it, and we will identify it in a separate paper to you.

COMMISSIONER REMICK: Thank you.

DR. MURLEY: Along these lines, we will make sure we keep the Commission informed on the resolution of each of these 14 open items that we highlighted. In addition, as we go through the final review, there's other little things that we find that, according to our instructions, we need to keep the Commission informed and get guidance on. One is, for example, whenever we go beyond a former position -- well, it turns out that the thermal power level is greater than 3800 megawatts here, and there's an old AEC policy statement that goes back, I think, to 1972, that lists that 3800 megawatts as a limit. So, we'll bring that to your attention. Staff tells me that that has been exceeded in the past for an operating plant, so we'll give a historical record.

Also, on strainer size, we're going beyond a former staff position. So, there may be a few more of these things that we don't regard as big policy issues,

but we do need to bring to the Commission's attention and make sure that we get -- I think we will need, before we actually start to prepare the final FSER, we will need something in writing from the Commission on each of these items where there is an issue of contention.

MR. CRUTCHFIELD: Future actions and activities. The key thing before us is probably completion of the independent reviews that we have. The resolution and closure of open items is probably the longest item that we have to take care of, longest lead item, as well as getting resolution of the ACRS, get the ACRS behind us, get their letter, whatever issues they may come up with, we need to get those resolved with GE and move on.

Our intent is to issue that Final Safety Evaluation reflecting everyone's comments, which would lead to an FDA, we hope, in the May time frame. One of the issues that's still somewhat outstanding is the question of do you need the Design Control Document at the time you go to the FDA, and we have an item up before you asking for some guidance there.

Interesting item is, previously we had gotten an invitation from the Japanese to send a construction inspector over there to observe the opportunities of things going on at K-6 and K-7. We have identified an individual from Region III who has expressed an interest

in going, and we'll be coming to you with a paper identifying what he's going to be doing, how he's going to be doing it, and when he's going to be operating over there.

CHAIRMAN SELIN: You still want to issue this paper for comment, the ITAAC, on the construction. Are you not going to wait for the Japanese visit? You would propose when you get insights, you will dump those in along with public comment, et cetera?

MR. RUSSELL: That's correct.

MR. CRUTCHFIELD: So, the key items for the ABWR are the resolution of the open issues and the ACRS items to take care of.

If I could have the next slide, please. I'd like to turn to Combustion System 80 review. (Slide)

We got an updated SSAR, Amendment U, which is about 5,000 pages, including an updated ITAAC and tech specs in January, so we're working our way through that. The ITAAC Task Group has completed its activity, the comments have been sent out to Combustion, and they are getting resolved.

We've got almost all the draft technical input into the staff now. We're missing some in Chapter 19, which deals with PRA, severe accidents and source terms, we're missing a piece on shutdown risk also. So, we have

everything but that. We're putting the document together. Our object is to get that out to the Commission for comment in the February time frame.

We have planned for Combustion similar independent reviews that we have done for General Electric Company. We're going to send the ITAAC Team back out to look at things, see how they are doing, look at some of the design applications that are going on out there also.

We expect to issue, as I indicated, an FSER in late February, and that will be for everyone's interest and comment. We'll continue to work with the ACRS. When we scheduled Combustion Engineering, we put a three-month window in for the ACRS. As you remember, with the ABWR, we put a month in. So, we'll continue to work with the ACRS. We've had meetings, and we'll continue to have those meetings.

Our object, again, is to issue the final FSER in the June time frame. The long item there seems to be there is no critical technical issues that we have. With the inputs that we've received on the FSER, there's only about five or six open items, and I think they are relatively resolvable.

We're meeting next week with CE on a number of those issues, so they should be coming to closure pretty quickly. Again, it could be resolution of open items and

probably ACRS that are going to be the long items in getting this document out and getting our conclusions on the street.

If I could turn now to the AP600 and the passive design. (Slide)

COMMISSIONER REMICK: Denny -- excuse me. Before leaving the evolutionary, I just want to make sure, the only issue currently before the Commission that you are awaiting is the issue of the Design Control Document relationship to the FDA, is that right? The only thing on our desk that you are waiting for an answer at the moment?

MR. CRUTCHFIELD: I believe that's correct, yes.

COMMISSIONER REMICK: Okay.

MR. CRUTCHFIELD: The AP600 design. We have been working on that for a good period of time. There's about 1200 RAIs out, Request for Additional Information. Westinghouse has answered about 95 percent of those already.

We still haven't gotten comments yet on the probabilistic risk assessment, and those chapters that have RTNSS-related material. Westinghouse will be the first plant that has to implement the regulatory treatment of nonsafety systems concept, and so chapters that have information related to that have not been completed and questions have not been sent out.

Key technical issues, there's two of them, as we see, remaining. One is the test program, and we have dedicated a person in Bill Russell's shop to oversee and monitor the ongoing test program, as well as the implementation of regulatory treatment and nonsafety systems.

The regulatory treatment system issue has two pieces to it. One is the policy question, are we going to go forward with it? Tied into that is, how are we going to handle the PRA?

We're doing the PRA review. We're meeting with Westinghouse. There are some issues we are trying to work out to make sure we understand what they did in the PRA. We're comfortable with what they have done in the PRA.

We also need to get some guidance out to the staff as to how they are supposed to handle these nonsafety systems. What are the review criteria for those? And we are developing those criteria.

I'll talk a little bit more about the test program in the next slide.

Future activities include continue the review. We're freeing people up from the CE and turning them onto the AP600 design, and they are moving forward. It looks like we're going to have to review the schedule, and that revision is going to be based principally on the delays in

the test program.

I'd like now to turn to the next slide, which is --

COMMISSIONER ROGERS: I thought you'd say what's the reason for those delays?

CHAIRMAN SELIN: These are delays in Westinghouse's test program.

MR. CRUTCHFIELD: Delays in the initiation of the test program by Westinghouse.

CHAIRMAN SELIN: Not in our program.

MR. CRUTCHFIELD: Not in our providing of information to them, or questions, or things like that.

The next slide gives you an idea of where we started. (Slide)

If I look at the left-hand side of that slide, it's relatively busy but, in the phantom part of the slide where it has containment tests and CMT tests, they were originally scheduled dates by Westinghouse as to when they would do the tests, give us initial reports, and give us the final reports.

As you can see with the darker copy on the right-hand side, they've slipped anywhere from nine to 13 months on a number of these tests. As you know, sometimes the test results can cause to change your design. That's one of the things we're concerned about. So, we're

closely watching what's going on with Westinghouse.

CHAIRMAN SELIN: But these are tests that Westinghouse would have to do even if there were no certification process, and these are part of their --

MR. CRUTCHFIELD: These are tests to prove their design, as well as some tests that we think are necessary to support certification.

DR. MURLEY: The only test that we insisted on that they did not have planned are the SPES-2 Tests there in the middle. The other tests, as far as I know, they were in their original plan and they felt were needed.

CHAIRMAN SELIN: Just to get a handle, what slipped is the Westinghouse development program, not the design certification process.

MR. CRUTCHFIELD: That's correct.

DR. MURLEY: That's right.

MR. RUSSELL: In fact, the slips are associated with construction of facilities. There were a number of meetings back and forth with the staff and Westinghouse, to reach agreement on what testing needs to be done at each facility, the test matrix, and how that's to be done. But it's principally been associated with facility availability, completion of construction, and then commencement of testing.

There are a few issues that we are still

discussing for some tests, where we have not completely reached agreement on whether all of the proposed tests are sufficient, but all of this testing is to support the staff finding, which would be, for an FDA, independent of whether we were in a Part 52 process or a Part 50 process.

COMMISSIONER de PLANQUE: The OSU Tests, are they Westinghouse tests?

MR. RUSSELL: They are Westinghouse tests. This is the low-pressure facility to demonstrate -- this is probably the most important integral test facility to look at the phenomena at low pressure, low driving heads, when you have potential for two-phase flows, et cetera. This has all along been identified by Westinghouse as the critical path testing.

MR. CRUTCHFIELD: We are looking at what the impacts of these delays are on our DSER. We were originally scheduled to issue the DSER in May of '94. What we see now with the delays in testing, there are a number of options that we're looking at, and we're trying to do whatever we can to minimize the delays of publication of the DSER. Things like looking at two DSERs, one that covers non-testing areas and a second one that covers testing areas; looking at only putting out a DSER that has a big hole there for the testing program, and fixing it, and covering that hole in the FSER.

So, we're pursuing a number of options to see what we can do to recover the loss that may have occurred due to the delays by Westinghouse and their test program. We owe you a Commission paper around a March or April time frame, that will lay out what we think is our best estimate as to how we can get from this point, to recover time, to get to the DSER publication, and continue on with the rest of the schedule.

MR. RUSSELL: And we'll be coming back to you in the March time frame, or shortly thereafter, with a revised schedule that lays this out. There are two major implications of this. One is in the safety analysis, the classic design basis analysis, Chapter 15 reviews, and capability of roof decay heat is discussed in Chapter 6. If we were to proceed with the draft, there would be big holes on how this plant would perform under those challenges.

The other area is related to regulatory treatment of nonsafety systems. PRAs are good for addressing random failure but, if you have a design flaw, the PRA is not able to handle that. So, we need to make sure that the testing has been completed to eliminate uncertainties associated with how this system of design will function in a certain manner.

So, we see that there are going to be potentials

for design change, or maybe some concerns on how well you understand the phenomena that could impact what we do in the PRA, which will then have an impact on regulatory treatment of nonsafety systems.

COMMISSIONER de PLANQUE: Maybe I missed this, but what's in the Phase 1 box?

MR. CRUTCHFIELD: These are the NRC tests.

DR. MURLEY: These are the ROSA Tests that are being done in Japan. They are confirmatory tests. And Phase 1 is actually some tests of the system.

COMMISSIONER de PLANQUE: These are the ROSA Tests.

MR. RUSSELL: And Phase 1 is what has been agreed to, to date, interaction back and forth between NRR, Research and Japanese. We are making recommendations for some additional testing at the facility, and are undergoing discussion with Research such that Research would be able to negotiate the additional tests with Jerry.

COMMISSIONER REMICK: Has the staff come to any conclusion on using OSU facility for any confirmatory tests? You were considering that at one time, I know.

MR. RUSSELL: We'll have to get back. I'm not aware that we have finalized our decisions on that yet.

COMMISSIONER REMICK: Okay.

MR. CRUTCHFIELD: The critical path item for an AP600 obviously is the test schedule, and see what happens there. Also, we need to get our Requests for Additional Information out, especially in the PRA-related areas.

If I could turn now to the SBWR on the next slide, please. (Slide)

The review there is progressing. It's not progressing as rapidly perhaps as the AP600. It has been impacted by the allocation of resources to the ABWR review also. As those resources now are coming free, we are applying them to the SBWR.

About 500 questions have been sent out, and GE has been relatively responsive in getting us answers back there. We have contracted with Purdue University to do some testing for ourselves, like 50 tests we have laid out on a '94-'95 time frame, or '95-'96 time frame. These are confirmatory tests also, to help validate codes and things like that for us.

In August of '93, we went out to General Electric Company and did an audit and inspection of their GIST facility. Some issues came out there dealing with the quality of document-taking, or information-taking, data-gathering, et cetera. And we are working back and forth with GE to get those issues resolved.

COMMISSIONER REMICK: What's it look like?

MR. CRUTCHFIELD: We are getting closer to having those issues resolved. We understand what they've done in some cases. In other cases, we're not still satisfied with what's occurred.

COMMISSIONER REMICK: Thank you.

MR. RUSSELL: The likely outcome could be some revision to later planned tests, to address areas where we may be missing data. On the other extreme would be that they are able to resolve these issues analytically, and show us that the testing is acceptable as was performed. It will probably something in between those two. We don't see repeating the GIST tests as an outcome of this.

COMMISSIONER REMICK: Thank you.

MR. CRUTCHFIELD: Future activities include the continuation of working on the Requests for Additional Information. We owe them a letter on what testing is necessary to be done for certification by GE, what testing they have to do to support their application.

Again, we're going to look at the schedule and consider revising the schedule for the SBWR. One of the benefits we get is there are certain things we've done for the ABWR that GE proposes are going to be similar for the SBWR. Human factors DAC is an area. So, we'll probably be able to make up some time doing that. Test delays may impact us. Availability of resources to support the

certification of the ABWR may impact us also. But, again, we'll get that paper up to you in the March or April time frame.

Critical path items are the testing and our ability to get out the Requests for Additional Information to General Electric Company.

If I could turn to slide 8 now. (Slide)

We have some non-light water reactors that we've been working on. As I indicated earlier, we've published the final PSER. We've gone to the ACRS. We've solicited their comments, industry's comments, Department of Energy comments, incorporated them now, and we are in the final publication stages of that PSER on PRISM. So, that should be going out, and that will wrap up our activities relative to PRISM at this time.

Future funding decisions by the White House and Congress make the MHTGR and PRISM's future uncertain at this time. We still maintain project status and oversight on these issues, and we are awaiting the outcome of those budgetary decisions.

CANDU 3 design, we are still continuing with evaluation of issues, looking for key problem areas, assessing what research needs to be done to support code validation and code work there also.

Future activities will be to continue to work on

the CANDU design, continue to expose staff to the design so that we can be prepared for the expected application sometime in the middle of this year. Last documentation we have from the Canadians says they will be in in the May-June time frame with a certification application.

With respect to PIUS, our intent is to do what we have to do to tidy it up and put it on the shelf, wrap up, give a status summary of our SER and where we stand, finish that up in the March time frame.

Other things that we have in front of us include the advanced neutron source. Department of Energy has inquired about our abilities and our desires to review such a document. We've had conversations with them, and we are awaiting further conversations or future discussions by them as to what needs to be done there.

COMMISSIONER ROGERS: Before you just leave this slide, Denny, with respect to CANDU, how far along are you in determining what research, additional research, needs to be done there, and what analytical codes need -- either are needed that we don't have, or the suitability of codes that exist?

MR. CRUTCHFIELD: The Research and NRR met last week. We scheduled a meeting for about two weeks where we're going to get into immense detail on that. It appears as though we feel relatively comfortable. There's

some work that needs to be done on thermal hydraulics, some on physics. The major area of concern to us is severe accidents, is there any testing or experimentation that may need to be done.

Once we decide what we think is necessary, we need to apportion which piece has to be given back to the Canadians for them to do so that they can support their application, what do we need to do for confirmatory activities. We haven't cut that piece of the pie yet. That's in process.

COMMISSIONER REMICK: Is there anything new on what I hear is some consideration of licensing of the powerburst facility? I realize that probably wouldn't be in the Advanced Reactor area, but perhaps Tom or Bill would --

DR. MURLEY: For isotope production?

COMMISSIONER REMICK: For the boron -- on the neutron boron capture therapy that -- use of that?

DR. MURLEY: Oh, we'll have to get back with you on that.

MR. CRUTCHFIELD: If I could turn to the next slide, I'd like to give you just a rough overview of what some of the key issues are. (Slide)

As I indicated before, we're generally on schedule for issuance of the final design approval in

accordance with the SECY 93-097. It's a tough thing we're going to have to do. We've got a lot of things before us to get done, get accomplished, but we think it's doable.

We need to evaluate the effects of the test program on the passive reviews. That's clearly going to have an impact on the schedules. We're working on that. As Bill indicated, we'll have that schedule paper up to you in the March or April time frame.

A number of issues have come up relative to the Part 52 process, the design control document and others listed there. I'll briefly go into some of the issues related to the design control document, and Bill Russell will talk about source term, regulatory treatment, emergency planning, and Tom will get to you and address the back-end of the process after the COL has been issued, dealing with ITAAC verification and the construction inspection program.

If I could have slide 10, please. (Slide)

Rulemaking status, as I indicated before, we put out an ANPR in November of '93. We had a workshop also in November of '93. There were 47 attendees. We solicited comments from industry and the public. We received a number of comments from NUMARC, General Electric, Westinghouse, TU Electric, and OCRE, which is the Ohio Citizens for Responsible Energy.

We are preparing a proposed rule for the evolutionary design. Commission guidance to us has been to get that forward 90 days before -- or 90 days after the FDA is issued, so we're in plenty of time. We're well on schedule for that, and we expect to be able to beat that 90-day criteria date.

With respect to the design control document issues, secondary references has been discussed a lot. The staff feels comfortable with what we have concluded relative to the use of secondary references at industry, and we both feel that those secondary references will be enforceable matters and no need to be elevated as primary references in the certification rule.

The issue about changes to the Design Certification after FDA issuance is before you. Our view is that that's an appropriate thing to do provided if there are any changes or iterations or any funny things that we see in the final DCD, that we can get those corrected and consistent with the SSAR and our safety evaluation and our conclusions made there.

COMMISSIONER REMICK: Denny, would you see down the road, in the passive area and so forth, that that would be done earlier, could be done earlier?

MR. CRUTCHFIELD: Our intent is to try and get it done earlier if at all possible. That would be the

best way to do it and, that way, the entire staff review is completed, its findings, it's safety basis is all laid out in front of it. So, ideally, it's done, you know, ahead of time.

DR. MURLEY: The issue, Mr. Chairman, that GE raised as a disagreement with the staff of applicable regulations, we'll come back to the Commission with a separate paper on that. I think we have to have a lot of discussions with OGC on that.

MR. CRUTCHFIELD: With that, I'd like to turn over the discussion of source term to Bill Russell.

MR. RUSSELL: Well, possibly, before I start source term, there was one other issue that was mentioned in the GE meeting, and you asked us to address these, and that's the issue of how much documentation of the PRA should be within the Design Control Document.

We indicated in an earlier Commission paper, SECY 93-087, that there were going to be issues related to PRA that we would bring to the Commission. One of them was the concept of a living PRA, where the PRA would be updated by the COL applicant during the application review, to address issues associated with interfaces -- that is, the actual offsite power grid, what it looks like for the proposed site, and also issues associated with ultimate heat sync, et cetera, to show that they are

indeed consistent with the PRA assumptions that were made during the design certification phase.

We've also taken the position that there should be a reliability assurance program, and that the PRA should be updated and maintained living during the operating phase, such that there is a feedback associated with the reliability assurance program.

If the decision is to proceed with that approach, that would obviate the need for a lot of detail in the Design Control document because you would expect that as you gained information through operations, you would start using operating data instead of generic data for the PRA.

So, we're going to be looking at those two issues in a connected manner, to see if we can reach agreement on how much detail needs to be in the PRA and the design certification.

CHAIRMAN SELIN: I just don't see how you could use the PRA unless the whole PRA were included. I mean, it would be like just saying .0046, you know, that without the structure -- I mean, it's sort of like in a design basis, having the settings but not the calculations that led to the settings and, therefore, when there's a change, you really don't know how that would be affected.

MR. CRUTCHFIELD: But the --

CHAIRMAN SELIN: I was going to make two points. One is, to have the scaffolding there seems to me to be essential, but the second one is how you deal with small changes. That's a separate question, that to have some kind of a tolerance band around these figures is -- our language is so tight now that if you went from .2 of 10 to the minus 7 to .21 of 10 to the minus 7, you'd have to come in with a design amendment change instead of just saying that's not a significant change.

MR. RUSSELL: I think the issue that you're discussing was raised by the industry, but that is not the staff's intent at all. We do not think bottom-line numbers should be used.

What we're interested in are the relative insights, some of the things which are in the appendices, identifying systems importance and why those systems are important, issues associated with human performance which went into the control room design review, what were the assumptions. They still have to develop the control room and carry it through, so there are particular insights from this that we are quite interested in, but the PRA, as it exists, would in the application that's on the docket, so we don't see a need to have the complete PRA in the DCD.

COMMISSIONER REMICK: Before shifting presenters

here, back in September you provided us with a draft that I think you sent out for comment, of passive plant policy issues, and you were seeking comment and so forth.

When do you expect that final document will be sent to the Commission? I don't think you've mentioned that yet. It has nonsafety issues in it, it has control room habitability, AC distribution, all those types of things.

MR. RUSSELL: That was SECY 93-087.

COMMISSIONER REMICK: No, subsequent to that.

MR. RUSSELL: Is that the regulatory treatment of nonsafety systems paper?

COMMISSIONER REMICK: It's included in there, but it has a lot of other issues, and it was provided in draft form, and it went out for public comment, I believe.

MR. RUSSELL: We have gotten comments on that. We've worked with industry and the ACRS. That paper is now in the concurrence process, and you should be seeing it in the next several weeks.

COMMISSIONER REMICK: Okay. Thank you.

CHAIRMAN SELIN: Papers that come up before July 1st are much more valuable than papers that come up after.

(Laughter.)

MR. RUSSELL: One of the issues which the Commission -- it was raised as a policy issue -- and that

was use of the new source terms from all the research in these applications. We indicated that we would do that on a case-by-case basis, and that we would come back, in fact, and inform the Commission as to how we were doing that in each case.

We have a paper which is nearly completed, the review process, and what I will highlight here are some of the things that will be detailed in that paper, basically describing how we have followed the direction from the Commission to use the new source term.

Specifically, in the ABWR review, we've taken advantage of information related to how source term is changed related to natural phenomena such as deposition, and related to how systems, in fact, remove the source term to contain it either in water or in compartments such as containment.

We believe that the issues have been dealt with appropriately on the ABWR review. These have been reviewed by the ACRS. The principal one is associated with main steamline valve leakage control systems, to prevent leakage past those valves, where we've taken credit for the existence of the main steamlines to the condenser. We've put some additional requirements on those nonsafety systems, and we've reached closure on that, and that is basically taking advantage of the

natural deposition, the played out, through the torturous path it would go through for release.

In the CE 80+ review, the Westinghouse review, and an SBWR review, they are making a much broader use of the source term. ABWR, in fact, used the TID source term.

The major change is in the area of treatment of iodine, and we are following the new source term in that area. We are also using it for equipment qualification, where we're using the coolant activity, the gap activity, and the early in-vessel release for equipment qualification for the purposes of accident mitigation features. We are looking at the late in-vessel release and the ex-core release, and we're generally in agreement with Combustion Engineering on how to handle those issues.

The fission-product holdup issue in the secondary containment is one that's also being looked at in the SBWR review. We are doing this based upon the draft source term. The final source term has not been developed, that's to come to the Commission. Research is working on that for later this summer, early fall, but we have considered the comments. We understand what the phenomena are, and we've taken conservative approaches in the design using those insights. As I mentioned, that paper should be to you shortly.

If I could have the next slide, please, slide

12. (Slide)

Regulatory treatment of nonsafety systems was a critical path issue, and we reached agreement in principal last January, on how to proceed and, during the ensuing months, we actually have developed an approach which has been agreed to by EPRI through the passive utility requirements document effort and also with Westinghouse, and it has been implemented by Westinghouse in their PRA review.

We believe that this issue, from a policy standpoint, is the appropriate way to go, that is, to perform sensitivity studies, identify the relative importance of nonsafety systems to core damage frequencies, or the potential for significant releases.

The details, though, are in the implementation, and we have the PRA review of Westinghouse underway now and, as I mentioned earlier, there is phenomenological uncertainty associated with how these systems will perform such that as the testing results become available, we can validate the codes, then we can run numbers of code cases to see how this design would behave, to try and reduce some of that uncertainty, and that will have an influence on how much NRC oversight is needed for these nonsafety systems or investment protection systems. But, in general, we're in agreement with the approach developed by

Westinghouse, and it's now in the details of completing the staff review.

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

COMMISSIONER REMICK: Incidentally, that's what I was referring to. I did not know you were going to cover it. It's that particular paper, including the regulatory treatment of nonsafety systems, but other issues are in there also.

MR. RUSSELL: Yes, that's correct.

COMMISSIONER REMICK: Okay.

MR. RUSSELL: As a result of legislation, we are required to address emergency preparedness with ITAAC. This is an issue that we have been working closely with FEMA on. We have a paper coming to you that should be here within the next two weeks, describing how we propose to implement emergency planning requirements through ITAAC.

There are two distinct and different phases. During the design certification phase, we are basically looking at facilities associated with the technical support center and the emergency operation facilities which are part of the design.

When we get to the combined operating license stage, the applicant will submit proposed ITAAC emergency plan, et cetera. That would be litigated in the

proceeding associated with the COL to establish the ITAAC.

The paper we're sending up shows some examples of generic ITAAC which are based upon the 16 planning standards for emergency preparedness in NUREG 0654. These are not final at this point. They are the results of preliminary work of the staff in interactions with FEMA.

In addition to ITAAC and those 16 planning standard areas, we're also going to propose an ITAAC for a full-scale exercise. The regulatory requirements are that that be performed within two years prior to exceeding 5 percent power. In this case, we're proposing that it be conducted as an ITAAC, which would require the exercise be performed prior to a fuel load authorization.

So, there is a slight change there, but we felt that because of the importance of emergency preparedness and the exercise and demonstrating adequate implementation of the planning standards, rather than just reviewing plans, that this should be treated as an ITAAC. This is in the paper we're sending up for policy decision by the Commission.

COMMISSIONER REMICK: What would be the typical time difference there, it would just be a matter of months, I would assume?

MR. RUSSELL: Yes, it should be a matter of months. In most cases, the exercise is done. If there is

some delay that prevents you from loading fuel, you may have to repeat another exercise, but we don't see that this is a significant difference in time.

That completes the three issues that we're coming up to you shortly on, that are layer stages of design certification review. Now I'll turn it over to Tom.

DR. MURLEY: This is, I call it, the last major building block to implement Part 52. Commissioner Rogers asked GE, when they were in, about their view of having the Commission involved in a lot of these issues, and I would give a somewhat different answer. I think in the grand scheme of things, it's clearly better that we've got a record of these issues, that the Commission has considered them and made policy decisions as we go along because it forces us and OGC, and the Commission for that matter, to parse issues carefully. And we've generally been ahead of the need for the decision, with one exception -- the level of design detail. I think it did delay us as we ultimately came back to our starting point. But if you think of we decided scope of application issues, level of design detail, how to treat severe accidents, and where the staff goes beyond current requirements, we did the two-tier application approach, the ITAAC form and content, the rulemaking procedure, and

now the rule form and content will be in front of you soon.

This one is thinking way ahead because we don't see an application in sight at all for a COL, but what we've done is to think through how we will actually verify that the ITAAC are met and allow operation. So, in that sense, it's just a thought piece. I'm not sure that we -- it has meant to spur thinking and comments from the industry, primarily, as well as the Commission, but we've got a draft paper in front of the Commission.

What it shows, I guess, is best shown on the next slide, which is a chart, and I'll kind of walk you through that. (Slide)

The line that drives everything is the license activity line, where you start with a certified design, and then a utility, or a group of utilities, or independent power producer, or whoever, would come in with an application for a combined operating license.

We would then review that application. Everything that's not covered by the certified design -- there could be environmental questions, site questions, emergency prepared questions, as Bill said -- then they would receive the COL and begin construction.

We've looked at the ITAAC for the ABWR to see how we would, in fact, make the findings that they

contemplate, and the bottom -- all this spaghetti down below shows how we see the system working. That is, we would have a team onsite. It would be led by a manager. They would produce monthly inspections of virtually the same type we do now, but they would then be augmented by specialist inspections from the region and from the headquarters. It could be welding, it could be QA, it could be electrical systems, as well as process findings.

Now, these process findings, as I mentioned, are quality assurance and welding. All of these various types of inspections would then feed into a headquarters staff, as we see it. Headquarters staff would be dedicated, the project staff, who is very conversant with the Part 52 process and the ITAACs, and they, in turn, would craft these inspection findings into the form that's needed to make interim ITAAC findings. We've called it "sign as you go". In the context of Part 52, "sign as you go" really means interim findings. It means when you lay the reinforcing bar in the basement, for example, we've got to make a finding that that's done. And then once we've done that, the way we see it, it would not be open for question again.

There are obviously many details of how we publish these in the Federal Register, how we get public comment on them, and so forth. But the idea is, we would

be publishing interim findings as we go. But it turns out that most of the actual ITAAC findings can only be finally concluded at the very end. It's an operability type of thing. And when you think about it, the operability of a system depends on the concrete that it's set on, it depends on everything that goes along for the previous five years. But the actual finding that it's acceptable is done at the very end.

COMMISSIONER REMICK: Although those ones that are related to construction should preclude what we ran into sometimes, that concrete poured four or five years earlier were placed in contention at some later time. So, hopefully it will preclude that kind of allegation.

DR. MURLEY: In this case, we would have a record, that's right.

MR. TAYLOR: The idea is to -- I would note, this would -- as Tom said, this would have us into construction at soil compaction and the beginnings, in which we would have essentially a resident construction section, if you want to call it that, in which -- and to make this work, this would take many more NRC assets in construction than historically we had a decade or more ago, when we encountered so many of the difficulties in completing construction and verifying that it was adequate as an end.

DR. MURLEY: The tradeoff, as Jim said, is we would put the resources up front, but the finding at the end should be very simple and straightforward, and it could be challenged, of course, but the record --

MR. TAYLOR: Would make that defensible.

DR. MURLEY: Absolutely.

MR. RUSSELL: Let me also comment that the headquarters activity I envision is going to be also heavily involved in the engineering review. In many of the past projects, construction outpaced some of the engineering activities, and the logical process is you need to complete the engineering sufficiently to conclude that the engineering is consistent with the design certification, so that you can then conclude that it's been constructed in accordance with the engineering drawings that have been released.

So, I see a much more heavy involvement on the part of the staff in looking at the engineering to implement this activity, and it does raise some interesting questions about first-of-a-kind engineering. That activity is going on now independent of staff review, and the question of whether the engineering does or does not match the certified design will clearly come up because that's what you, in fact, use in the field to complete the construction.

So, I think we've been emphasizing engineering more all along in our self-process, other things we're doing, and I would see that there would be a fairly significant headquarters role in some of the engineering areas before you get to construction and onsite activities.

DR. MURLEY: Denny reminds me this draft paper will be released today for public comment. We will actually seek out comment from NUMARC and ARC because we really want them to think this far ahead, too.

We are revising our construction inspection program. It will have to be done -- it's very important, we feel, to have the people that are writing the ITAAC do the thinking that goes all the way through this. So, we want their input into the construction inspection program, too, so we're doing that right now.

There is one concept I'll mention that is new. It might be contentious, I don't know. We've said that the inspectors who are actually out in the field, they will not be taking the ITAAC documents themselves because the ITAACs are broad, conceptual things. They only have -- the drawings, for example, are not real engineering drawings at all, they are just conceptual drawings.

So, there has to be what we call a "bridge" document that goes from the ITAAC, which are legal

requirements that we have to make findings against, to what the inspector uses in the field. And that bridge document then, as we see it, would be what the COL applicant would have to prepare, and he would have to certify to the NRC that the field construction drawings and pre-op test plans and that sort of thing that they're actually using, are, in fact, consistent and conform with ITAAC, so that when we make the findings using the drawings that we normally use in the field, we know that they are consistent with ITAAC.

But it's that kind of thinking that has to be done now to make sure that we haven't overlooked anything. I guess I'm fairly confident that we've laid out the broad structure and this final block for Part 52. It is a good, solid system. I think we feel comfortable with it.

MR. TAYLOR: I think it's a good idea to get this out, too, and get as much input while the memories of some of the problems of earlier construction are still around.

COMMISSIONER REMICK: I think you might remind people of NUREG 1055.

MR. TAYLOR: Right, I'm thinking of that.

COMMISSIONER REMICK: EO was one of our primary authors. It's still an excellent document.

DR. MURLEY: That concludes our briefing.

CHAIRMAN SELIN: Commissioner Rogers?

COMMISSIONER ROGERS: Do you see any siting implications from the new source term? Has that come into your thinking at all?

MR. RUSSELL: No, it has not, from the standpoint that the approach we've taken in the design certification is to specify as a site parameter bounding values for dispersion coefficients for atmospheric dispersion. So, we've actually included in the site parameter list the chi-over-Q values, so that the site review for a particular site will need to look at that, and then it determines how much land they are going to actually purchase to get out to the boundary of the owner-controlled area.

Clearly, if you have adverse wind conditions at the site, you may have to have a larger boundary. If you have better wind conditions on-average over a year, you may have a smaller boundary. But we don't see significant impact at this point, from source term.

In the CE 80 design, the source term was used, which relates to that which is released, and then the dispersion to get to the dose calculation. So, we've seen it in the design certification, but we do not expect to see it during the siting review.

COMMISSIONER ROGERS: Um-hmm. Um-hmm. Well, I

just want to say that this is really a very exciting briefing, I think, in many ways. The progress that's been made is really outstanding, and I think a couple of years ago, this looked like a very, very hard thing to get to, to where we are today, and I just want to compliment the staff for really a very fine job. Thank you very much.

CHAIRMAN SELIN: Commissioner Remick?

COMMISSIONER REMICK: I would just like to say I'm delighted that you have found somebody that can be an assignee to go to the Katchawasake Karawa site because I think we will definitely benefit, or that person will, and the agency, as a result, will benefit from the observations of t'.e innovative construction techniques that I understand are being used there.

Also, I know personally that MITI will be very pleased with that because they have a feeling they have benefitted very much from the NRC and can learn much, but they also feel very strongly that we can learn from them, and I think this is a case that they have experience that we currently don't. So, I think it's going to be mutually beneficial, and so I'm very pleased with that.

DR. MURLEY: I agree with that. I was at the site this past summer, and they are doing construction techniques there that are far beyond anything that we have experienced in this country. So, when we write -- I took

with me the person who is writing the construction inspection plan so he could see it himself, and you're exactly right.

COMMISSIONER REMICK: Good. And I certainly join in the comments that what has been accomplished -- Tom went over the benefits of the Commission being involved and outlined some of the issues that we faced along the way. They have been difficult, but I've been very, very pleased at the staff management direct involvement in resolving these issues.

Certainly, I don't think anybody did or could have anticipated some of the issues that arose in Part 52, but I think we have to look at the fact that Part 52 has really held up. We've faced issues, but you folks have sought and obtained solutions in conjunction, working with the vendors, and I think the process has worked, and it's a tribute to you and those who report to you, as well as the industry effort, that we've reached the stage that we have, and I think you can be very proud of that accomplishment. I certainly am, and I join in thanking you.

CHAIRMAN SELIN: Commissioner de Planque?

COMMISSIONER de PLANQUE: Just a detail. I want to go back to the design certification rulemaking and make sure I understand what you're going to do next. Are you

going to come to us when you have a specific design case, or are you going to come to us for the generic?

MR. CRUTCHFIELD: Our intent is to go back and the next thing you see will be the ABWR proposed ANPR.

COMMISSIONER de PLANQUE: Okay. All right. I, too, add my congratulations. I think this has been very well done.

CHAIRMAN SELIN: As somebody who is completely free of any credit for having developed Part 52 in the first place, I do -- not only do I agree with my colleagues, I think it's really quite extraordinary that such a major change both in procedure and in technical approach has held up as well as it has from the initial concept. You can be very proud.

In fact, Dr. Murley, you are really to be congratulated, as your illustrious career at the NRC draws, unfortunately, to a close, that the three big pieces -- the operating reactors as discussed yesterday, and the procedures that you've laid out for the high level reviews, the design certification and Part 52 process, and I hope the wrapping up of the license renewal work -- will certainly stand as monuments to your landmark career as Director of NRR. Thank you very much.

(Whereupon, at 10:58 a.m., the meeting was adjourned.)

CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting of the United States Nuclear Regulatory Commission entitled:

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

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: JANUARY 28, 1994

were transcribed by me. I further certify that said transcription is accurate and complete, to the best of my ability, and that the transcript is a true and accurate record of the foregoing events.

Reporter's name: Phyllis Young

PROGRESS OF DESIGN CERTIFICATION REVIEW AND IMPLEMENTATION

BRIEFING TO COMMISSION
JANUARY 28, 1994

BRIEFING TOPIC AREAS

I. Overview of Accomplishments

II. Project Review Status

III. Overview of Key Issues

IV. Design Certification and Part 52 Implementation Issues

OVERVIEW OF ACCOMPLISHMENTS

- Safety Evaluation Reports issued on the Advanced Boiling Water Reactor (ABWR), the passive Utility Requirements Document (URD) and the PRISM liquid metal design

- Inspections, tests, analyses, and acceptance criteria (ITAAC) issues resolved for the evolutionary plant designs

- Public workshop conducted on design certification rule

- Continued high levels of management attention involving both the vendors and Department of Energy (DOE) on design certification schedules and issues

- Numerous meetings with the ACRS on advanced reactor issues

ABWR DESIGN CERTIFICATION REVIEW STATUS

Status

- GE submitted updated standard safety analysis report (SSAR), and certified design material on December 7
- Staff issued its advanced copy of the FSER to the Commission on December 23
- Key open issue involves RPV water level instrumentation diversity

Future Actions/Activities

- Complete independent quality review
- Complete ACRS meetings and receive ACRS letter
- Issue FSER reflecting resolution of all issues including Commission guidance and ACRS concerns
- Issue final design approval (FDA)

SYSTEM 80+ DESIGN CERTIFICATION REVIEW STATUS

Status

- ABB-CE updated its certified design material in December and submitted its updated SSAR in January
- ITAAC task group review completed and issues technically resolved
- Draft technical input completed on most FSER chapters

Future Actions/Activities

- Conduct independent quality review
- Issue advanced copy of FSER in late February
- Continue ACRS briefings
- Issue FSER in June 1994

AP600 DESIGN CERTIFICATION REVIEW STATUS

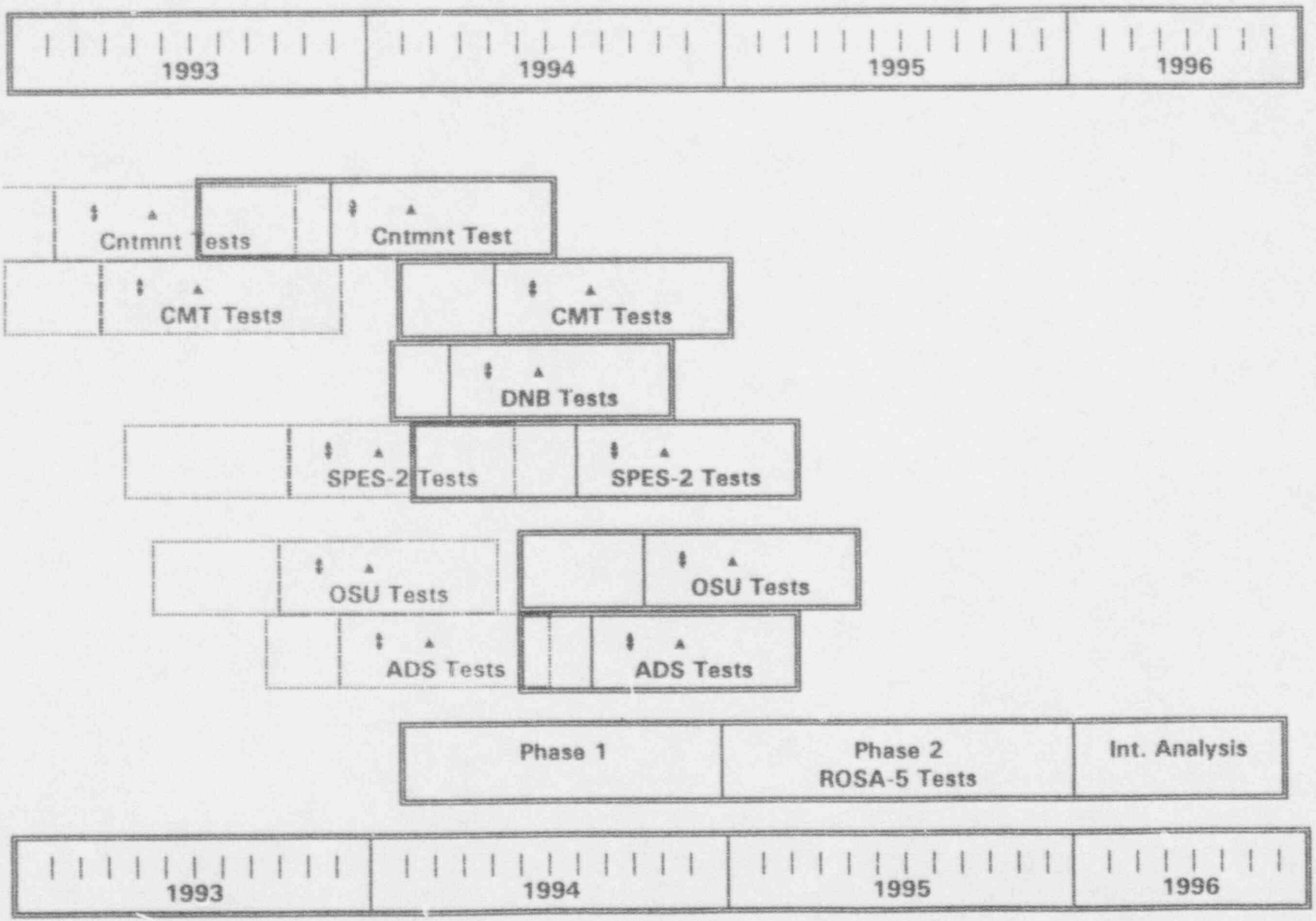
Status

- Over 1,200 requests for additional information (RAI) issued
- Westinghouse has responded to most RAIs
- Key technical review issues involve
  - completion of testing program
  - implementation of the regulatory treatment of non-safety system (RTNSS) process

Future Actions/Activities

- Continue with the detailed review of the AP600
- Revise schedule based on Westinghouse test program delays

AP600 TEST SCHEDULE



Dotted boxes are test dates assumed in SECY-93-087

ǂ = Denotes submittal of Quick Look reports

▲ = Denotes beginning of submittal of processed data to the NRC

Shaded Areas = Denote time from test completion to final report to the NRC

SBWR DESIGN CERTIFICATION REVIEW STATUS

Status

- Review progressing despite concentration of GE and staff effort on completing ABWR review
- About 500 RAIs issued with more expected as reviewers complete ABWR efforts
- Contractor (Purdue) selected for NRC's independent test loop and facility design underway
- Staff completed inspection of SBWR's gravity-driven cooling system integrated test (GIST) facility

Future Actions/Activities

- Complete issuance of RAIs
- Revise schedule based on test program status, insights from ABWR review, and expected increased GE/staff resources after ABWR review completion

NON-LWR REVIEW STATUS

Status

- Final PSER on the PRISM (liquid metal) design published
- Future funding of the PRISM and MHTGR designs remains uncertain
- Interaction on key issues for the CANDU 3 design continues

Future Actions/Activities

- Continue to broaden technical staff involvement in the detailed reviews especially for the CANDU 3 design
- Document the PIUS review status and close out by Spring 1994
- Design certification application for CANDU 3 expected in 1994

OVERVIEW OF KEY ISSUES

- On-schedule issuance of final design approvals (FDA) for both evolutionary designs
- Effect of test program delays on passive plant review schedules
- Development and implementation of staff positions on major issues related to the Part 52 process
  - Design control document
  - Application of the revised source term in the design reviews
  - Regulatory treatment of nonsafety systems (RTNSS)
  - Emergency planning
  - ITAAC verification and construction inspection

DESIGN CERTIFICATION RULEMAKING

- Design Certification Rulemaking Status
  - Advance Notice of Proposed Rulemaking (ANPR) published November 1993
  - Public workshop held November 1993
  - Comment period expired January 1994
  - Staff preparing proposed rule for first evolutionary design to receive FDA
- Design Control Document (DCD) Issues
  - Use of secondary references resolved
  - Changes to the DCD after FDA issuance

APPLICATION OF REVISED SOURCE TERM IN DESIGN CERTIFICATION REVIEWS

- Commission paper will discuss staff positions on
  - closure of source term-related issues in the EPRI URDs for evolutionary and passive designs
  - generic implementation of source term-related issues in evolutionary and passive LWR certification reviews
- Most significant of the source term-related issues discussed include
  - Selective use of accident source terms from draft NUREG-1465 (System 80+, AP600, SBWR)
  - Iodine chemical form (System 80+, AP600, SBWR)
  - Equipment survivability for design features needed for severe accident mitigation and containment integrity (System 80+, AP600, SBWR)
  - Iodine deposition on BWR main steamlines and condensers (SBWR)
  - Fission-product holdup in the safety envelope (secondary containment) (SBWR)

REGULATORY TREATMENT OF NONSAFETY SYSTEMS (RTNSS)

- RTNSS is one of the most important issues to be implemented in the passive plant reviews
- Draft Commission paper on RTNSS issued in September 1993
- ACRS briefed on RTNSS issues in August and November 1993
- Staff incorporating ACRS comments into final Commission paper
- Westinghouse's general approach to implementation of RTNSS for the AP600 was satisfactory

EMERGENCY PLANNING (EP) UNDER 10 CFR PART 52

- Commission paper will discuss how EP requirements will be addressed at each phase of nuclear power plant licensing under Part 52

- ITAAC pertinent to emergency response onsite facilities identified during review of design certification applications

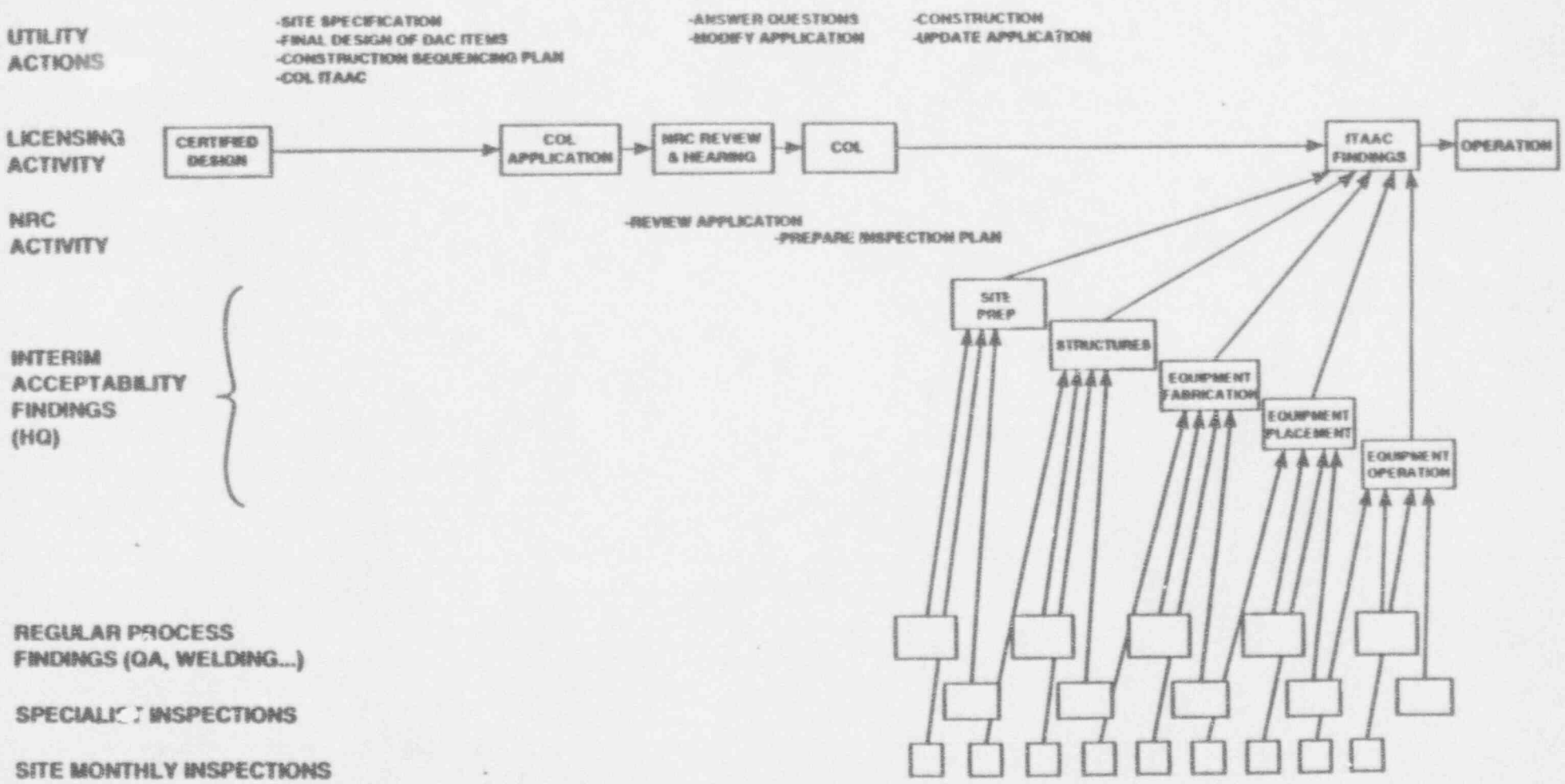
- Federal Emergency Management Agency (FEMA) and NRC staff have drafted joint criteria for reviewing EP aspects of an early site permit application

- Form and role of ITAAC and treatment of preoperational EP exercises are principal COL issues

ITAAC VERIFICATION AND CONSTRUCTION INSPECTION UNDER 10 CFR PART 52

- Draft Commission paper discusses staff views on how ITAAC requirements will be met and inspected during plant construction
- Evolutionary plant ITAAC used to evaluate how the NRC staff will ensure that ITAAC are performed and met prior to the Commission authorizing plant operation
  - most ITAAC activity completed late in the construction period
  - roughly half of the individual ITAAC are "simple" involving straight forward tests or inspections
  - remaining ITAAC (compound ITAAC) will involve a compilation of many activities throughout construction
  - role of interim findings and bridge concept verifications discussed

SCHEMATIC PLAN FOR VERIFICATION OF ITAAC



ITAAC VERIFICATION AND CONSTRUCTION INSPECTION UNDER 10 CFR PART 52

- Draft paper also discusses issues related to development and implementation of the Construction Inspection Program (CIP)
  - CIP development to continue in parallel with certification of the various advanced designs
  - staff proposes to publish each design-specific CIP in the *Federal Register* for comment
  - staffing to implement the CIP would involve site and NRR staffs
- Draft paper being released to the public in order to solicit views of interested parties