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UNITED STATES OF AMERICA  
 NUCLEAR REGULATORY COMMISSION  
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 ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
 PLANT LICENSE RENEWAL SUBCOMMITTEE  
 + + + +  
 H.B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2  
 + + + +

TUESDAY,  
 SEPTEMBER 30, 2003

The Meeting came to order at 12:30 in room  
 T2B1 of White Flint Two, Graham M. Leitch, Chairman,  
 Presiding.

PRESENT:

GRAHAM M. LEITCH	ACRS Member
MARIO V. BONACA	ACRS Member
STEPHEN L. ROSEN	ACRS Member
JOHN D. SIEBER	ACRS Member
B.P. JAIN	ACRS Staff
JOHN BARTON	ACRS Consultant
P.T. KUO,	Program Director, License Renewal

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

(12:30 p.m.)

CHAIRMAN LEITCH: This is a meeting of the Advisory Committee on Reactor Safeguard, Subcommittee on Plant License Renewal. I'm Graham Leitch, Chairman of the Subcommittee. The Subcommittee Members in attendance are Mario Bonaca, John Sieber, Steve Rosen, I think, will be joining us shortly, but he's not here at the moment, and our consultant, John Barton.

The purpose of this meeting is to review the License Renewal Application from H.B. Robinson, associated draft inspection plan evaluation and review by the NRC staff. The Subcommittee will hear presentations by and hold discussions with representatives of the NRC Staff, Carolina Power and Light, and other interested persons.

The Subcommittee will gather information, analyze relevant issues, formulate proposed positions and actions as appropriate for deliberation by the Full Committee. B.P. Jain is the Designated Federal Official and ACRS Staff Cognizant Staff Engineer. The rules for participation in today's meeting have been announced as part of the notice of this meeting previously published in the Federal Register.

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1 Transcripts of the meeting will be made available.

2 I'll ask that the speakers first identify  
3 themselves and speak with clarity and volume so they  
4 may be heard. We have received no written comments or  
5 requests for public comment.

6 I should say that, by way of introduction,  
7 in the past we have spent perhaps a full day on recent  
8 cases, perhaps quarters of the day with our  
9 Subcommittee reviewing these license renewals, trying  
10 to improve the efficiency of the process , trying to  
11 discuss, to review, so if we're still here at 8:00  
12 tonight, we'll know we have failed.

13 SPEAKER: You will know -- (Laughter.)

14 CHAIRMAN LEITCH: But we really think that  
15 this is possible. We do not want to shortchange  
16 anyone on time, but we do think it should be possible  
17 to eliminate some of the boilerplate, and some of the  
18 more routine matters, and get right to the heart of  
19 the issue, and that's how that would happen. So  
20 without any further ado, Mr. Kuo.

21 DR. KUO: Thank you, Dr. Leitch. My name  
22 is P.T. Kuo. I'm the Program Director for License  
23 Renewal Program. Today the staff will be reporting on  
24 its safety evaluation of H.B. Robinson Steam Electric  
25 Plant Unit 2. The Project Manager for this safety

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1 review is Sikhindra Mitra. He will be assisted by Dr.  
2 Mario Cora. They will lead the presentation today,  
3 but they will call upon the staff experts to answer  
4 questions, and most of the key reviewers are sitting  
5 in the audience. They are ready to answer any  
6 questions.

7 Briefly, the staff issued the staff  
8 evaluation, the safety evaluation report with open  
9 items on August 25th, 2003. There were only two open  
10 items in the safety evaluation report, and since then  
11 these two open items have been resolved. As usual,  
12 we have also --

13 SPEAKER: Excuse me. It was my impression  
14 that there were more open items. There were a number  
15 of --

16 DR. KUO: There are 29 confirmatory items.

17 SPEAKER: Some of those confirmatory items  
18 have --

19 DR. KUO: Well, the issues are resolved.  
20 That's all I have to say with that. I would like to  
21 turn over the floor to the applicant.

22 MR. STEWART: Good afternoon. I'm Roger  
23 Stewart, and I am the Technical Lead on the Robinson  
24 Renewal project. This afternoon, I'm going to go over  
25 some background, some of the operating experience.

1 I'm going to discuss a little bit about our scoping  
2 methodologies, and how we relate it to GALL, and I'm  
3 going to discuss our commitments and commitment  
4 tracking.

5 In terms of background, Robinson's initial  
6 license was granted July 31st, 1970. Westinghouse 3  
7 loop plant, 2339 megawatts. It's a sister plant to  
8 Turkey Point. Currently, all of our NRC performance  
9 indicators are green, and all NRC inspection findings  
10 are green.

11 As shown on the first slide, if you go to  
12 the Robinson site, there are two units. The first  
13 unit is a Fossil Plant. The second unit is a Nuclear  
14 Plant. There are some shared resources. Some of  
15 those shared resources were in scope in terms of  
16 license renewal. Those include the lake. We have a  
17 common lake, we've got a dam, spillway and discharge  
18 canal that are shared by the two units. We do have  
19 separate intake structures for the two units.

20 For the emergency diesel generators on  
21 Unit 2, we do accredit some additional storage  
22 capacity from Unit 1, so we have one tank with some  
23 transfer piping in scope, as well. The Fire Water  
24 Systems are cross-connected. They are separated by a  
25 closed isolation valve, so it's strictly a backup

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1 feature that one plant could back the other one up,  
2 but they are crossed. There's a number of --

3 SPEAKER: [text missing due to failure of  
4 NRC audiovisual system.] between the two valves that  
5 there is [text missing due to failure of NRC  
6 audiovisual system].

7 MR. STEWART: No, sir. These are  
8 underground headers with valves. I believe it's all  
9 underground.

10 SPEAKER: So the valves may be leaking.

11 MR. STEWART: Possible, but not likely.  
12 We do have performance tests on both units, and we  
13 test the loops as well as the pump capacities.

14 We have a number of other systems that are  
15 shared between, there are resources shared between the  
16 plants that aren't in the scope of license renewal.  
17 These are things like the hydrogen supply, sewerage  
18 treatment, the telephone and PA systems are common,  
19 training buildings, warehouse, waste oil disposal  
20 facility. We do have a railway we use to get  
21 equipment into both units, and we also have the access  
22 road. And that's pretty much what we've got common  
23 between them.

24 The security is pretty much assigned to  
25 Unit 2, but the perimeter of the plant also includes

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1 Unit 1.

2 MR. BARTON: Warehouse is common for both  
3 Fossil and Nuclear --

4 MR. STEWART: Yes, sir.

5 MR. BARTON: Single and segregated fossil  
6 or --

7 MR. STEWART: There is some segregation.  
8 There are some different areas, and there's also --  
9 there tends to be, depending on the area, they might  
10 have some spares that they carry specifically to Unit  
11 1, but we do use pretty much a common warehouse.

12 Now, you stock the stuff by the part  
13 number, and you draw it out by a part number. That  
14 does not mean that you get the same part for Unit 1 as  
15 Unit 2.

16 SPEAKER: What's the status of the Unit?

17 MR. STEWART: It's older than Unit 1 -  
18 excuse me - Unit 2. It went into service in the early  
19 60s. I'm not sure of the exact date, but it went in,  
20 in early 60s, and probably predates it a good 10  
21 years.

22 CHAIRMAN LEITCH: There's no, well, I  
23 assume you have no definite plans for retirement of  
24 these fossil plants.

25 MR. STEWART: That could be, sir, but to

1 my knowledge, we at Progress Energy have not retired  
2 a fossil plant yet, so I mean, we've got some that are  
3 considerably older, and we haven't retired those, but  
4 that is a possibility. In terms of the --

5 CHAIRMAN LEITCH: Excuse me, but just - I  
6 don't see any mention of the switch yard. One of the  
7 things -- this may not be the right time in the  
8 presentation, but one of the things we have clear in  
9 our mind [text missing due to failure of NRC  
10 audiovisual system.]

11 MR. STEWART: The two units do have  
12 separate switch yards. There's a switch yard for Unit  
13 1 and a switch yard for Unit 2.

14 CHAIRMAN LEITCH: But the switch yard and  
15 the switch yard relay building are not in scope.

16 MR. STEWART: They are in scope for SBR.  
17 We brought them in scope.

18 CHAIRMAN LEITCH: According to the  
19 document that I read some of it's in, and some of it's  
20 out. We'll talk about that when we get to the  
21 restoration --

22 MR. STEWART: The initial application --  
23 you're correct, sir. On the initial application, none  
24 of it came in. But when we addressed SBR, we brought  
25 parts of the Unit 2 switch yard in scope.

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1           Operating experience on Robinson, it's  
2           operated with very good capacity factors. We've also  
3           made good progress in shortening our outages, and in  
4           addition, we've had minimal -- we've experienced  
5           minimal amount of time off line for other than  
6           refueling outages. In fact, between our spring of  
7           2001 and fall 2002 refueling outage we operated  
8           breaker-to-breaker with no time off-line, so the plant  
9           has been operating really well.

10           The next thing that I want to talk about  
11           is the reactor vessel head penetrations. I'm going to  
12           start with the upper penetrations. When we did our  
13           Spring 2001 refueling outage, as we shut down, we  
14           found some evidence of CRDM CAD seal leakage on the  
15           head, and we elected to remove all insulation and  
16           perform a bare metal qualified visual inspection of  
17           the whole head. No leakage was detected. Now this  
18           was in Spring of 2001, and this was before the NRC had  
19           issued the bulletin. So we did some further work to  
20           try to get a better handle on what we had seen or what  
21           we were likely to see, and we had some analysis done  
22           that demonstrated that, had there been any CDR or any  
23           through-wall defects, we would have been able to see  
24           the leakage or the results of the leakage, so we did  
25           a bare metal visual inspection, didn't see anything.

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1           The next time we looked was in the next  
2           refueling outage, which was in Fall of 2002, and at  
3           this particular point we went and we did another bare  
4           head visual inspection. In addition, we did some NDE  
5           of all the penetrations. And what we did is we did an  
6           eddy current exam of the 69 J-groove welds and a  
7           penetration OD surface. We did eddy current and UT  
8           exam of the 17 open penetration tubes from the  
9           penetration ID. We did an eddy current exam of the 45  
10          penetrations tubes with thermal sleeves, and the 7  
11          remaining tubes with part leak drive-shafts from the  
12          penetration's ID surface, and we found no evidence of  
13          service-related degradation in that inspection.

14                 MR. BARTON: How many degradations have  
15                 you seen through the methodology?

16                 MR. STEWART: Through this next cycle,  
17                 which will be April, 2004, 21.7.

18                 MR. ROSEN: What is the temperature of  
19                 that vessel head.

20                 MR. STEWART: 99.7. It's just under 600  
21                 degrees. Now we have ordered a replacement reactor  
22                 vessel head, and we're currently planning for that  
23                 replacement to take place in the Fall of 2005. And  
24                 using the EPRI methodology, we'll have 23.1  
25                 degradation years at that point. And I failed to

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1 mention, our head is a CE fabricated head, which seems  
2 to show some less susceptibility than the B&W ones.  
3 That's all I have on the upper head.

4 CHAIRMAN LEITCH: Now, is my understanding  
5 correct that you are seeking relief from the NRC Order  
6 so you will not have to do so many inspections?

7 MR. STEWART: That's correct, sir. Yes.  
8 Based on the examinations that we've done, the  
9 analysis that we've done, and the fact that we do plan  
10 on replacing them in 2005.

11 If there had been a crack existing at that  
12 time, which we did not see, it would not propagate  
13 over the two centers of operation until we replace the  
14 head, so it's a bare head visual examination.

15 SPEAKER: Okay. Thank you.

16 MR. STEWART: On the lower penetrations,  
17 we're in the process of preparing a response to the  
18 NRC bulletin now, but we are making plans for this  
19 spring. We plan on doing a remote bare metal  
20 inspection of the bottom head, and along with that,  
21 we're also developing some contingency plans in terms  
22 to try to identify potential sources, and what we  
23 might do for NDE and repair. That's as far as we've  
24 gotten with that, but we are working to put it in the  
25 schedule and are developing a response to that.

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1 CHAIRMAN LEITCH: What time -- do you have  
2 instrumentation time schedules on the lower head? Is  
3 that coming--

4 MR. SIEBER: What schedules?

5 MR. STEWART: I don't know the number of  
6 the --

7 MR. ROSEN: Do you have access? What kind  
8 of access do you have?

9 MR. STEWART: If you could help on that  
10 one, I'm not that familiar with --

11 MR. BAUCOM: It is somewhat restricted  
12 because our understanding of it is that the lower  
13 vessel insulation is one piece, and there's some  
14 shrouds and support, so it would have to be engulfed,  
15 and we'll have to lower that insulation as one unit  
16 sufficiently to give camera access to see what's going  
17 on with the penetrations for each instrumentation.

18 MR. SIEBER: It's like BWR, where you have  
19 all that. There's a lot of stuff that you're just  
20 forgetting about.

21 MR. ROSEN : It's not like the trend where  
22 they had very good methodologies.

23 MR. STEWART: Now I'm going to talk a  
24 little bit about the scoping and screen methodologies  
25 and any exceptions to GALL.

1 MR. SIEBER: Before we leave your  
2 description of the plant, I'd like to ask a couple of  
3 questions. You replaced steam generators in 1986.

4 MR. STEWART: '85.

5 MR. SIEBER: '85 or thereabouts.

6 MR. STEWART: Yes, sir.

7 MR. SIEBER: What model did you put in,  
8 and what was different about the replacement steam  
9 generators and the original ones?

10 MR. STEWART: The replacement generators  
11 are -- it's 34F, and they have the feed room with the  
12 J-tubes. And they have -- the main difference that  
13 ours have is the thermally annealed inconel after you  
14 vent it. And in addition, we've got stainless steel  
15 quadrifoil baffles on the support, two sheet support  
16 baffles. And I don't remember the exact numbers, but  
17 I'm thinking the total number of tubes that we've  
18 plugged is like two dozen, comes to mind so far.

19 MR. SIEBER: Okay. That answers all the  
20 questions that we asked. I do have a question about  
21 your containment. One of the open items or  
22 confirmatory items was the debris screen on the purge  
23 valves. Now, do you operate your plant with the purge  
24 valves open during your operation?

25 MR. STEWART: No, sir. That's not --

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1 MR. SIEBER: It's not allowed, I suppose.

2 MR. STEWART: I believe it is allowed, but  
3 it is not part of the standard operation to do so.

4 MR. SIEBER: So the debris screen actually  
5 serves no purpose during the entire operation. Is  
6 that correct? You probably have that isolated --

7 MR. STEWART: It's isolated and it's --

8 MR. SIEBER: Mode 3 and above. Right?  
9 Mode 3 and above.

10 MR. STEWART: Yes, sir.

11 MR. SIEBER: All right.

12 DR. BONACA: It seems to me --

13 CHAIRMAN LEITCH: Excuse me. Go ahead.

14 DR. BONACA: It seems to me we're asking  
15 questions about some various experience. Now in  
16 reviewing your programs ASME Section 11, containment,  
17 and Subsection IWL Program, there are a number of  
18 observations made about the containment liner and  
19 corrosion. I wonder if you could just summarize for  
20 us the status of that. There are statements that say  
21 there are problems. The affected areas have been  
22 evaluated and meet minimum wall thickness. What does  
23 it mean in terms of the progressive degradation of  
24 that? Are you monitoring it --

25 MR. STEWART: What we found, sir, is on

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1 our containment liner, where we found corrosion is  
2 right at the bottom of the liner. As you get down and  
3 you go down the liner, right at the base plate. The  
4 liner is there. You've got the form, the base mat on  
5 the floor, and there is a moisture barrier there. And  
6 we have gotten some moisture or something behind that.  
7 So we had some degradation of the liner, right in that  
8 lower couple of inches or so. And we have pulled off  
9 all -- we have pulled off panels -- our containment  
10 has -- we've got the steel liner. Then we've got an  
11 insulation panel. Then you've got a stainless steel  
12 sheeting, and it's typically 4 by 8 stainless steel  
13 sheeting and insulation panel. We had removed all  
14 those panels that were accessible and checked all of  
15 the lower portion around there, and had found some  
16 degradation, were able to evaluate it and determine  
17 that we had ample thickness to continue operation.  
18 And what we had planned to do, and what was previewed  
19 as an existing commitment as some of the inaccessible  
20 areas we're going in this refueling outage, and it's  
21 typically a blocked wall. We're going to remove some  
22 of the blocked walls, and we're going to get to those  
23 last panels and go around and check those to make sure  
24 that they're in good shape. That's what the  
25 commitment relates to.

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1 DR. BONACA: Yeah. The other question I  
2 had was how did the boric acid leakage get there? I  
3 mean, on the statement it says you had -- I just was  
4 trying to figure out --

5 MR. STEWART: We had a rapid coolant pump  
6 seal failure in the early 70s.

7 DR. BONACA: Okay.

8 CHAIRMAN LEITCH: I had a question in that  
9 same vein regarding these insulated panels. This is  
10 on the inside of the -- this is up against the  
11 containment liner?

12 MR. STEWART: Yes, sir. If you can  
13 visualize, you have the concrete structures and you've  
14 got the steel liner on the inside. Then we've got an  
15 insulated panel and then we've got a stainless steel  
16 sheeting on the outside of it, so if you were inside  
17 the containment looking out, what you would see would  
18 be the stainless steel insulating - excuse me - the  
19 stainless steel sheets.

20 MR. ROSEN: Sheeting on the insulation.

21 MR. STEWART: Yes, sir, covering the  
22 insulation.

23 CHAIRMAN LEITCH: That's an unusual  
24 design, is it not?

25 MR. STEWART: I would suspect so. Our

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1 plant design basis is that insulation is there so that  
2 in a design basis accident limits the amount, limits  
3 the heat-up rate on the concrete.

4 CHAIRMAN LEITCH: Now have you -- I guess  
5 you're aware of the recent concern about sump debris.

6 MR. STEWART: Yes, sir.

7 CHAIRMAN LEITCH: And I'm picturing in  
8 your design with this insulation around the  
9 containment whether you have a larger capacity to  
10 generate debris than most? Am I not getting the  
11 picture correct?

12 MR. STEWART: For the most part, if you  
13 will envision the primary systems are pretty much  
14 inside a primary emissions sheet, and so if you're  
15 talking LOCA-type generated debris, there is not a --  
16 the only thing you'd have to look at potentially are  
17 some of the high energy lines that are coming into the  
18 containment from safety injection, so there's not a  
19 lot of target area that can get to it because you've  
20 got a large missile shield around the whole primary  
21 components that would prevent anything from  
22 potentially impacting and knocking this insulation  
23 off.

24 MR. BARTON: Is there a containment spray  
25 system?

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1 MR. STEWART: Yes, sir.

2 MR. SIEBER: You've got containment feed  
3 water on it too, which is pretty big, and they run on  
4 the outside of the --

5 CHAIRMAN LEITCH: You do have steam lines.  
6 Like I said, it's LOCA generally.

7 MR. SIEBER: Steam lines.

8 CHAIRMAN LEITCH: So are you - Again, I'm  
9 a little confused on the status. Is there a new  
10 bulletin regarding sump blockage in BWR.

11 MR. STEWART: Yes, sir.

12 CHAIRMAN LEITCH: Is that --

13 MR. STEWART: Yes, there is. Exactly.  
14 And we have answered the bulletin. We answered it in  
15 August. And when we answered the bulletin, we took  
16 Option 2 in it. And with Option 2, what we're doing  
17 right now is we are doing some enhancements to  
18 operating procedures, and those will be implemented by  
19 the middle of November. And additionally, we're also  
20 enhancing what we do in terms of containment cleanup  
21 and inspections, and we'll have that in place before  
22 we go into the next refueling outage so we can train  
23 all the crews going in. And in addition, we'll be  
24 going back and doing some design basis review on the  
25 sump and stuff. We're just beginning that. But we've

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1 answered the first phase of the bulletin.

2 CHAIRMAN LEITCH: So you're dealing with  
3 it as an operating procedure, as housekeeping  
4 improvements.

5 MR. STEWART: Yes.

6 CHAIRMAN LEITCH: And going back and  
7 looking at the design, but that's pending.

8 MR. STEWART: Yes, sir. That's correct.

9 CHAIRMAN LEITCH: I would think that if  
10 that insulation that we're referring to, although I  
11 understand what you're saying, is that they not be  
12 susceptible, I would think you would have to look  
13 carefully at that to be sure that that didn't  
14 significantly increase the problem you have as  
15 compared with some other things.

16 MR. STEWART: Yes, sir.

17 DR. BONACA: I have a question still on  
18 containment. Again, looking at one of your problems,  
19 there is a description of an experience where in  
20 containment you have some significant indication  
21 spalling grout problems, degradation of exterior  
22 surface of containment, some concrete, so some  
23 experience with that. Do have aggressive ground water  
24 at Robinson?

25 MR. STEWART: Our ground water pH is less

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1 than 5.5, so under that threshold we'd say that yes,  
2 it's to be considered aggressive.

3 DR. BONACA: And you have chlorides and  
4 sulfates too, so have you had indication on exposed  
5 concrete under -- I guess what I'm leading to is,  
6 because you have indication of concrete spallation and  
7 problems even with integrity of containment, do you  
8 have some indications like these also for intact  
9 structure, for example, and other non-accessible  
10 locations that would give even a higher concern?

11 MR. STEWART: We have -- about four years  
12 or so ago, we replaced a portion of the service water  
13 header and brought it from below ground to above  
14 ground, and we excavated right up next to the  
15 auxiliary building, and we did that, and went back to  
16 that concrete and went down quite a bit, and saw no  
17 evidence of degradation there. We also -- the lake  
18 water and the ground water are fairly comparable. If  
19 we look at a lot of the water intake structures and  
20 discharge structures, we have not seen any particular  
21 evidence of degradation on those. We do have some  
22 programs in place.

23 We've looked somewhat at the Unit 1 side,  
24 but not extensively, and we haven't seen a lot with  
25 Unit 1, but the stuff that we've looked at, we haven't

1 seen problems with it.

2 DR. BONACA: We will hear from the staff  
3 anyway on the staff's evaluation, how you addressed --

4 MR. STEWART: Yes. For our scoping and  
5 screening, all of the technical work that we did to  
6 prepare the application was performed in accordance  
7 with our Progress Energy Quality Assurance Program,  
8 i.e., we did the work under Appendix B. We basically  
9 followed the guidance of NEI 95-10 and prepared an  
10 application in the SRP format. I believe Fort Calhoun  
11 was the first one, we're the second one, so we were  
12 following that format.

13 Initially, when we submitted the  
14 application we had not addressed the Staff interim  
15 guidance, so we did issue a supplement, and we issued  
16 that prior to getting the RAIs to address some of the  
17 interim staff guidance on such things as the A-2, the  
18 SBO, fire protection, the external aging on concrete,  
19 but we addressed those via supplement.

20 There's a couple of unique aspects to  
21 Robinson, and this goes back to containment. We  
22 don't know of another domestic plant - I'm not saying  
23 there isn't one, but we're not aware of another one,  
24 but we have grouted tendons, so that's one big  
25 difference. And this will definitely be the -- this

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1 is the first one that the staff's has had a chance to  
2 review that has grouted tendons.

3 Another one that we've got, and this is  
4 not as unique. I don't know if you've had it on your  
5 other applications, we have a dedicated shutdown  
6 diesel that we rely on for both Appendix R, as well  
7 as SBO.

8 MR. SIEBER: You have a separate Appendix  
9 R aux feed pump, or feed pump?

10 MR. STEWART: We rely on -- we have two  
11 motor-driven pumps and one steam-driven pump, and so  
12 we tend to rely on the steam-driven pump in both  
13 scenarios.

14 MR. SIEBER: Yeah, one of the problems is  
15 that a plant of that age, and it depends on who the  
16 AE was, but a plant of that age, all three pumps were  
17 usually the same fire rating. If Westinghouse put  
18 that together, they may have been --

19 MR. STEWART: The two motor-driven pumps  
20 are basically in the same cubicle. The steam-driven  
21 pump -- and that's in an area that's right off the  
22 turbine building, and it's separated by --

23 MR. SIEBER: It's in the aux building.  
24 Right?

25 MR. STEWART: It's in the aux building,

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1 but you get to it by going through the turbine  
2 building. It's clean. But the steam-driven pump,  
3 our turbine building is open. Now physically 75  
4 feet, I'd guess.

5 MR. SIEBER: It's in the turbine  
6 building?

7 MR. STEWART: Yes, sir. And it's open.  
8 It's a different fire zone.

9 MR. SIEBER: All right. You probably  
10 know it, but a lot of plants that had the extra  
11 diesel would use it to power an Appendix R aux feed  
12 pump have separate ones. A lot of those plants have  
13 had four instead of three, so I thought that's what  
14 you were doing.

15 MR. STEWART: Our diesel, we use it power  
16 a component cooling water pump, a charging pump, and  
17 a service water pump. The main thing that we're  
18 trying to do is RCP seal cooling and seal injection  
19 is what we're allowing for.

20 MR. SIEBER: So it's not a real big one,  
21 right?

22 MR. STEWART: I'm not sure of the size.  
23 Do you know?

24 MR. SIEBER: 2400?

25 MR. STEWART: It's a pretty good sized

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1 unit. I think it's close to the other ones. Our  
2 emergency diesels are 480 as exempt system.

3 When we're looking at our aging  
4 management programs, and these will be discussed  
5 later by the Staff, but we took no major exceptions  
6 to GALL. We did take some exceptions, but no major  
7 ones. Yes, sir.

8 MR. ROSEN: Before you get off this line,  
9 you have a bullet that says supplement to address  
10 ISGs.

11 MR. STEWART: Yes, sir.

12 MR. ROSEN: Is that going to be discussed  
13 later in detail, that supplement? Is anybody on your  
14 program going to go through that?

15 MR. STEWART: As the Staff goes through  
16 and does their safety evaluation, we basically -- I  
17 think it's discussed in general how we discussed the  
18 A-2 stuff, and the SBO stuff falls out of it. The  
19 fire protection was pretty straightforward in  
20 answering that, as well as the external concrete.

21 MR. ROSEN: Well, this ISD-2. You know  
22 what that is, the one on station blackout.

23 MR. STEWART: Right.

24 MR. ROSEN: And that's what I'm trying to  
25 get somebody to talk about.

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1 MR. STEWART: Some of the Staff will talk  
2 about it.

3 DR. KUO: He will bring it up.

4 MR. STEWART: Right.

5 MR. ROSEN: All right.

6 MR. SIEBER: Well, that was actually  
7 addressed in the SBR.

8 MR. STEWART: Yeah.

9 DR. BONACA: I have some other questions  
10 too on the scope, if I could ask. First of all, I  
11 don't understand why the axial power distribution  
12 monitoring system is not in scope. I mean, could you  
13 explain to me. Maybe I misunderstand what it is.  
14 It's a nuclear-related system, I guess, to --

15 MR. BARTON: Axial power monitor.

16 MR. SIEBER: Yes, it's --

17 DR. BONACA: I guess it's not used for  
18 any such detection?

19 MR. STEWART: It's not used for -- I  
20 think it's the indication. We don't use it for any  
21 protective features or anything.

22 DR. BONACA: I guess the freeze  
23 protection system is also -- it doesn't give you --  
24 I mean, it doesn't monitor freezing in any of the  
25 tanks or anything like this.

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1 MR. STEWART: That's correct.

2 DR. BONACA: Okay. And I have one last  
3 question about scope, which is to do with the thermal  
4 shield. I'm confused about what took place there.  
5 First of all, you took the position the thermal  
6 shield is not in scope because it is not exposed to  
7 high radiation, and I couldn't understand that.

8 MR. SIEBER: It's pretty close to the  
9 reactor.

10 DR. BONACA: Yes. So then I notice that  
11 the staff asked questions about that.

12 MR. STEWART: Right.

13 DR. BONACA: But it's evaluation was that  
14 it doesn't need to be in scope because other  
15 components are monitored that would give lead  
16 information about the thermal shield.

17 MR. STEWART: Okay.

18 DR. BONACA: Okay. And I still don't  
19 understand how -- what is the basis for not including  
20 thermal shield, which is highly exposed component in  
21 scope?

22 DR. KUO: If I may, I'll ask Jim Medoff  
23 to address the issue.

24 DR. BONACA: Okay.

25 MR. MEDOFF: Do you want me to address it

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1 now?

2 DR. KUO: Yes, now. If you can answer  
3 briefly.

4 MR. MEDOFF: This is Jim Medoff. There  
5 was an aging management review for a number of the  
6 internal components, void swelling and radiation  
7 embrittlement, and it's one of the items that GALL or  
8 the SRP recommends further evaluation, so they  
9 addressed each one of the components to just fall  
10 back by the standard review plan.

11 They concluded that the thermal shield  
12 didn't have a hot enough fluid, so we asked a  
13 question on it, and they pointed out that the thermal  
14 shield is -- some of it's in the area of the  
15 radiation zone, and so we thought that they should  
16 provide aging management.

17 The way the -- we had discussions with  
18 the applicant. The way they addressed it was they --  
19 the applicant was one of a few applicants that have  
20 a really strong commitment in its PWR internal  
21 program. The commitment is to participate in  
22 industry programs, to implement the recommended  
23 activities from the EPRI/MRP work task and vessel  
24 internals, and to submit the inspection plan to us  
25 prior to the -- within a certain period of the

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1 extended period of operation for the review and  
2 approval. And I think we have about two years to  
3 look over the inspection plan.

4 Based on the strong commitment for the  
5 PWR internals program by the applicant, we concluded  
6 that they didn't have to really propose aging  
7 management of the thermal shield right now. What we  
8 would do is let the industry organizations look into  
9 what type of aging defects are applicable to it, and  
10 see if we need to add it on later on when they've  
11 reviewed the inspection plan, so that's basically how  
12 we handled that.

13 DR. BONACA: Still I'm left, you know,  
14 with the feeling that, again, this component is not  
15 in scope. That's the statement, it's not in scope  
16 until -- they just didn't determine what to do with  
17 it.

18 MR. MEDOFF: I don't think it's -- you  
19 would have to ask that one of the scoping reviewer.  
20 I'm not sure that it wasn't in scope. I do know that  
21 they didn't have an aging management review for it,  
22 so you would have to ask the scoping -- that of the  
23 scoping reviewer.

24 DR. KUO: It's just that they're not  
25 relying on it. Correct?

1 MR. MEDOFF: It's not that they're not  
2 relying on it. It's that they are not proposing  
3 aging management of it right now.

4 MR. STEWART: We would have identified no  
5 aging mechanisms that required aging management  
6 programs at this point.

7 MR. MEDOFF: Right.

8 DR. KUO: Well, it isn't in scope. You  
9 review it. There's no aging management program  
10 required, so I guess --

11 MR. STEWART: I'm not sure. I'd have to  
12 go back and look at it.

13 MR. MEDOFF: What the GALL does, it has  
14 an AMR -- the GALL report has an AMR calling out  
15 certain vessel components, including the thermal  
16 shield. And they did call out the component. It  
17 talked about the component in the aging management  
18 review. It's just that we had some questions on it,  
19 and we wanted to know how they were going to do aging  
20 management, so what -- the way we handled it is  
21 they're going to rely on their participation in the  
22 industry organization. They discussed it in Chapter  
23 3, it would have been the cause. We determined it  
24 was in scope in Chapter 2 --

25 DR. BONACA: Well, let me explain the

1 reason why I'm concerned about it, is that, you know,  
2 thermal shield problems have been experienced by the  
3 PWR in the past. Okay. Some of them resulted in  
4 vaulting failures, cracks in the barrel and things  
5 that have to be done. Some loosening is an example,  
6 maybe things need to be done were never repaired.  
7 And typically, you have pretty careful inspections in  
8 the following years, and commitments because of the  
9 repairs. Others do not experience failures. For  
10 example, we are reviewing right now Fort Calhoun.  
11 They have digressions, however, in the late 80s and  
12 they have to replace a number of things that support  
13 the thermal shield. Now, of course, the issue is the  
14 vertical vibrations, and we, in general, fall back  
15 into the same situation. Here now when the thermal  
16 shielding comes in, and for which you don't have any  
17 specific problem, because there is no aging --

18 MR. MEDOFF: But I don't think that's  
19 correct. It's not that there's a program. It's that  
20 when we did our aging management review, if you look  
21 at the PWR internals program called out by a lot of  
22 -- a vast majority of the aging management reviews  
23 and the GALL report, what it does is it's a further  
24 evaluation, as it tells you to propose a  
25 plan-specific aging management program which is PWR

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1       internals. And then if you look at the discussion in  
2       GALL, it talks about either proposed aging management  
3       or discuss participation in --

4                   DR. BONACA:        But    the    previous  
5       conversation that took place here where I heard that  
6       there wasn't any specific aging management program  
7       that was needed.

8                   MR. STEWART:  No, it's not that.

9                   DR. BONACA:  That's what I heard.  Am I  
10       wrong?

11                   MR. STEWART:  No, I think the way we  
12       handled it is we handled the way the commitments for  
13       the PWR internals to determine through the EPRI/MRPs  
14       activities on internals to determine whether they  
15       needed to add it to their inspection plan when they  
16       submit the inspection plan for review and approval,  
17       so that's how we handled aging management for the  
18       thermal shield.

19                   MR. SIEBER:  It seemed to me that a lot  
20       of the thermal shield and internal involvement were  
21       in a plant of a different brand than this plant, like  
22       Brand C versus Brand W.

23                   DR. BONACA:  Well, I don't know.  I mean,  
24       I just --

25                   MR. SIEBER:  So Brand W doesn't really

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1 have a lot of specific things going on. Brand W has,  
2 for example, prepared --

3 DR. BONACA: But this is -- this is the  
4 last question. Is the thermal shield going to be  
5 inspected specifically, or are you looking to just  
6 allow the components to determine the condition of  
7 that.

8 MR. MEDOFF: The MRP -- the EPRI/MRP task  
9 group on internals is going to be coming in to  
10 discuss their programs for PWR internals in the next  
11 month or so. The way we have been handling  
12 participation in the industry program is we've been  
13 really asking for applicants to commit to  
14 implementing recommendations of the EPRI/MRP for  
15 inspections of their internals. So if it's something  
16 like void swelling, where you're not quite sure  
17 exactly which components you're going to get void  
18 swelling on, or in this case maybe cracking of the  
19 thermal shield, or irradiation embrittlement of the  
20 thermal shield.

21 What we're supposed to do in our  
22 interactions, the Staff's interactions with the  
23 EPRI/MRP is to raise those topics with the EPRI/MRP  
24 to look into studies to investigate whether -- which  
25 type of aging management activities need to be

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1 proposed for those components. And for all  
2 applicants, we've been asking for commitments to  
3 implement the industry's recommendations, and to  
4 submit inspection plans. Robinson, we didn't even  
5 have to ask them for it.

6 DR. BONACA: So, I mean, I guess the  
7 answer I'm hearing is that the component is in scope.

8 MR. MEDOFF: Right.

9 DR. BONACA: And that activities may be  
10 initiated consistent with the recommendations of the  
11 EPRI --

12 MR. BARTON: And I think they say that in  
13 Item 8 in Table 311, Mario.

14 DR. BONACA: The commitment - -

15 MR. BARTON: In the LER, Table 311, Item  
16 8 in the discussion.

17 DR. BONACA: Well, it is based on 366 and  
18 367 of the SER. You get mighty confused.

19 MR. BARTON: Okay.

20 DR. KUO: Let us get back to you after  
21 the break.

22 MR. ROSEN: This gets into an issue now.  
23 We're proposing to take a current licensing action,  
24 that is, to extend the Robinson operating license  
25 based upon a future industry -- based in part upon a

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1 future industry action, the MRP. And what -- so I  
2 pose this question. What if the MRP proposals are  
3 not acceptable to the staff, what happens then?

4 DR. KUO: The staff is working with the  
5 industry group on the resolution for the issue. If  
6 the Staff doesn't accept it, that -- the Staff will  
7 be able to tell them that we are not accepting this.

8 MR. ROSEN: But you've already --  
9 presumably by that time, we will have already moved  
10 ahead with the license renewal for Robinson.

11 MR. STEWART: Our commitment for Robinson  
12 indicates that it's industry recommendations, as  
13 agreed to by the Staff, so if the Staff doesn't agree  
14 with recommendations, I can't meet the commitment.

15 DR. KUO: We will have to agree with it.

16 MR. MEDOFF: Can I address that?

17 DR. KUO: Go ahead.

18 MR. MEDOFF: Their commitment to get  
19 their programs into -- inspection programs for these  
20 internal components are equally on another area,  
21 nickel-based alloy components, which we discuss later  
22 on, is that they will have at least two years to  
23 review the inspection plans, to review the EPRI's  
24 programs, and to have dialogues with the applicant to  
25 discuss areas of contention where we may not agree

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1 with the MRP and where we think more aging management  
2 is necessary, so they've given us at least a two year  
3 period to review the inspection plans when they  
4 submit them.

5 MR. STEWART: The other thing about the  
6 Robinson plant, if you will think of us in  
7 perspective to your other applicants, our in-service  
8 -- our license was issued in 1970. Our period of  
9 extended operation begins August 1st, 2010. All of  
10 these programs that you're talking about, we may be  
11 coming in later in the queue on license renewal, but  
12 we're one of the first up in terms of when the period  
13 of extended operation begins. We have a vested  
14 interest in participating with the industry and  
15 getting these programs agreed to and in place,  
16 because we're going to be in early with them compared  
17 to some of the other applicants you've already  
18 approved.

19 MR. MEDOFF: Dr. Rosen, I just want to  
20 tell you, because I know where you're coming from.  
21 I've talked to my management and told them for these  
22 types of programs where they're relying on industry  
23 activities, that we really have to keep on top of the  
24 MRP to make sure they're looking into the -- you  
25 know, aging of the components, you know, so they can

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1 get the programs.

2 DR. KUO: The question is, what if the  
3 staff does not agree with the proposal proposed by  
4 the industry group?

5 MR. MEDOFF: The inspection plan is for  
6 review and approval, so we will work that out with --

7 DR. KUO: The answer is the staff will  
8 have to agree, and to endorse it.

9 MR. ROSEN: The inspection plan, so the  
10 proposal based on MRP, you don't agree with it in our  
11 hypothetical situation, so instead of that, you can  
12 just say okay, we don't agree. You wait for Robinson  
13 to come in with their inspection plan. The MRP-- You  
14 say you don't agree with the inspection plan, and  
15 you, at that point, can force changes on a  
16 site-specific basis to Robinson II's inspection plan?

17 DR. KUO: Correct.

18 MR. STEWART: We negotiate one that's  
19 agreeable to you.

20 MR. ROSEN: I don't want it to happen,  
21 but I wanted to explore the boundary.

22 DR. KUO: Yeah, but that really is going  
23 to happen if the staff doesn't agree with the  
24 proposal, it won't go. The staff won't endorse it,  
25 so they have to change the inspection plan.

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1 MR. MEDOFF: Dr. Rosen, we have the same  
2 question. What if we don't agree? And they said  
3 well, that's why we're giving you a two year period  
4 for review of the inspection plan.

5 MR. SIEBER: Let me ask a question about  
6 this slide before it disappears.

7 DR. KUO: Yes, sir.

8 MR. SIEBER: You say no major exceptions  
9 to GALL. And I guess that statement is sort of in  
10 the eye of the beholder, whether it's major or not.  
11 I will say that they were easy to find because  
12 they're in the table, and I like that, so my piece of  
13 the review was easy. On the other hand, I wondered  
14 about one thing. You take exception to the one-time  
15 inspection for branch lines connecting to the RCS.  
16 And I thought about that, and I thought well, Section  
17 11 of the ASME Code says you've got to inspect a  
18 certain portion of those, maybe after 4 years you  
19 would get them all. And so the one-time inspection  
20 may not be necessary.

21 On the other hand, since you're already  
22 doing it, and since that is a vulnerable place; for  
23 example, bent lines that act like pendulums with  
24 fatigue and cracking, and leaks in the function of  
25 those, safety injection lines is another one, are not

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1 here. Why would you take exception? What was the  
2 thought process? And then when we get to the staff's  
3 presentation, I will ask why did you approve it.  
4 Maybe you can answer that for me.

5 MR. STEWART: I'm not sure if I  
6 understood the question, but relative to any  
7 exceptions, the way we identified exceptions is, if  
8 we had an exception to a specific element in a GALL  
9 aging management program, we pointed what that  
10 element was, explicitly stating the exception, and  
11 stated why we said it was all right, to make sure it  
12 was identified for the staff. They had our logic on  
13 it, and could question it.

14 Now in terms of the one-time inspection  
15 --

16 MR. SIEBER: For branch lines.

17 MR. STEWART: My recollection of the GALL  
18 program for the one-time inspection is it's -- this  
19 is my recollection, it could be wrong. But I thought  
20 it was intended to validate; typically you credit  
21 chemistry, as well as ISI on maintaining your pipe in  
22 such condition you don't have any cracks or  
23 indications. Now what happens is on anything that's  
24 four inches or less, typically only on a visual  
25 examination, so the GALL program --

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1 MR. SIEBER: Right.

2 MR. STEWART: The GALL program was to  
3 basically go back into the smaller diameter stuff  
4 that you only do a visual examination, is to do some  
5 sort of a validation, either by looking on the inside  
6 of the pipe or some sort of a -- some more extensive  
7 thing other than visual examination. You were coming  
8 up with a sampling program to validate that your  
9 chemistry was, in fact, effective, and weren't having  
10 pipe cracking and defects. And I'm not aware that we  
11 took any exceptions to that.

12 MR. SIEBER: Well, it's in here. The  
13 exceptions to the one-time exam, the code requires a  
14 BT. Now because the geometry is terrible, so you  
15 can't use any kind of audiometrics, so BT is probably  
16 all you could use. If you're relying on that and  
17 saying I'll be through four intervals by the time  
18 license renewal comes along, and in four intervals I  
19 will have caught every one, every branch line, and I  
20 guess I'm satisfied. But there's 150 branch lines.  
21 There's a lot of them, so maybe --

22 MR. STEWART: We'll address that.

23 MR. SIEBER: Yeah. Maybe you folks can  
24 think about it while we're going through this, and  
25 decide. It's not a big issue with me. On the other

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1 hand, I have been personally involved with several  
2 that leaked.

3 DR. KUO: That's the reason we take  
4 exception to Section 11 Code, because like you said,  
5 Section 11 Code for small bore piping less than four  
6 inches, only do the service examination and all that.  
7 It doesn't do any voluntary examination.

8 MR. SIEBER: That's correct.

9 DR. KUO: And in order for us to really  
10 know, you know, whether the small bore piping is  
11 really in good shape or not, the exceptions that we  
12 took in GALL is that we would like to have a one-time  
13 inspection for these small piping to verify whether  
14 there's indeed no never- mind thing, or that there  
15 are cracks or leaks. If they are, then take another  
16 corrective action. That's the intent of that.

17 MR. SIEBER: Okay. Thank you.

18 DR. BONACA: And the final scope, I mean  
19 -- another issue I'll raise when you come up, and  
20 it's one dear to my heart, as you know, has to do  
21 with the pressurized spray head. You raise the same  
22 question. Now the story is different. The story is  
23 that the applicants are varied in experience and  
24 concluded that such a failure has not occurred  
25 anywhere else. And that's the basis for excluding

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1 it. But it's not clear from your confirmatory item  
2 that are waiting to have a confirmation of the  
3 operating experience, or if you're waiting to have  
4 the applicant agree that the pressurized spray head  
5 should be in scope, so I'll need to have a  
6 clarification on that. Can you give it to me?

7 DR. KUO: Later on.

8 DR. BONACA: All right.

9 MR. SIEBER: The safety function is rapid  
10 depressurization.

11 MR. STEWART: Okay. Now I'm going to  
12 discuss our commitments in tracking. In the SER in  
13 Appendix A, as you go through, there's an indication  
14 that some of the commitments were withdrawn because  
15 there was no changes required. In discussions with  
16 Staff, we've discussed this, and we've agreed that  
17 for the final SER, what we're going to say is rather  
18 than say commitment withdrawn, we're going to be  
19 crediting an existing program and we require no  
20 changes in it, so if you go through the SER in  
21 Appendix A, and you see that, that's what those --  
22 that will be changed to clarify it. All that really  
23 indicates is we were able to credit those programs,  
24 required no changes or enhancements.

25 Basically, that leaves us with 37

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1 commitments that do require some enhancements or  
2 changes. Those basically constitute 27 enhancements,  
3 and we also ended up implementing or identifying 10  
4 new programs that we're going to have Robinson for  
5 the period of extended operation. I'm not going to  
6 go in and discuss those, because that will be covered  
7 later by the Staff.

8 Relative to these commitments, all of  
9 these commitments have been entered into the MRP  
10 commitment tracking system. Mr. Julian will talk a  
11 little bit about that. He got the opportunity to see  
12 some of that. Looking at commitments, looking ahead,  
13 what we're anticipating doing, we did the license  
14 renewal effort on Robinson. I'm actually part -- I'm  
15 on-site, but I'm part of an off-site organization, so  
16 I don't actually belong to the Robinson plant.

17 We envision transitioning this project,  
18 finishing the project, closing the project out in  
19 terms of off-site organization, and we'll move on and  
20 do something else. The plant staff will still have  
21 commitments to carry out.

22 We've taken a look at the commitments  
23 that we made, and we envision 18 of these commitments  
24 are fairly easy to accomplish, even though they may  
25 not be required prior to the period of extended

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1 operation. We're going to go ahead and implement  
2 them in their procedures and get them done near term.  
3 And by "near term", I mean prior to June 30, 2004,  
4 before we go away.

5 CHAIRMAN LEITCH: And those 18 presumably  
6 include the 10 existing programs?

7 MR. STEWART: Yes.

8 CHAIRMAN LEITCH: So there's really only  
9 8 of the 37 that you're --

10 MR. STEWART: Actually, there's 19 of the  
11 commitments that we will be -- that we anticipate  
12 transitioning. And by "transitioning", what I mean  
13 is right now all the commitments are assigned to the  
14 license renewal organization. If you envision that  
15 organization is going to go away some time next  
16 summer, I need someone on the plant site that owns  
17 that commitment. So we have a transition plan in  
18 place that we'll work with someone in the plant staff  
19 organization, make sure they understand the  
20 commitment.

21 For example, the one that James was  
22 talking about on reactor vessel's internals, we're  
23 already going to have that accomplished next year,  
24 but I've got to have a plant person that's going to  
25 own that program. So we're going to work with the

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1 plant, make sure that they understand what's behind  
2 the commitment. They'll own the commitment, and make  
3 sure that we've got it implemented prior to the  
4 period of extended operation.

5 CHAIRMAN LEITCH: I read in the NRC  
6 inspection report that tracking of the action items  
7 is not yet integrated into the plant systems; that  
8 is, tracking of these action items, I assume is what  
9 it's referring to.

10 MR. STEWART: Mr. Julian will probably --

11 MR. JULIAN: But it has been now.

12 CHAIRMAN LEITCH: It has been now.

13 MR. JULIAN: It has been now.

14 CHAIRMAN LEITCH: Okay.

15 MR. JULIAN: They've gone back and looked  
16 at other work and verified that he has incorporated  
17 all these as he's describing into the official plant  
18 practices.

19 CHAIRMAN LEITCH: Okay. Now it also said  
20 that would be done, and would be subject to a  
21 subsequent NRC inspection. So what you're saying is  
22 that inspection has now taken place?

23 MR. JULIAN: We have done that.

24 CHAIRMAN LEITCH: Okay.

25 MR. JULIAN: And this was the inspection

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1 report.

2 CHAIRMAN LEITCH: Okay. Good. And in a  
3 similar vein, there was a comment that the boric acid  
4 control program, the linkage to plant procedures was  
5 weak. And I guess I'm surprised. I can assume  
6 that's one of your existing programs.

7 MR. STEWART: It was one that required an  
8 enhancement, and that is an enhancement that we are  
9 making.

10 CHAIRMAN LEITCH: Okay. And similarly,  
11 has that action been completed?

12 MR. STEWART: Not yet, sir.

13 MR. JULIAN: It's one that's scheduled  
14 for towards the end of the year, the boric acid.

15 MR. STEWART: Is that for EPO SLER?

16 MR. DONAHUE: We've got a corporate level  
17 procedure being developed on our site, but Robinson  
18 in particular to review something that now is claimed  
19 to be in place and used here at Robinson for fueling  
20 outage coming up this spring.

21 MR. ROSEN: What is this reference to EPO  
22 SLER you just made?

23 MR. BARTON: This is the Davis-Besse  
24 SLER. It's got a whole bunch of action items.

25 MR. ROSEN: I know. What particular

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1 recommendation of the INPO SOER 0204 on Davis-Besse  
2 were you referring to?

3 MR. STEWART: I'm not sure, sir. What we  
4 did is we have four operating nuclear stations in  
5 Progress Energy, and we did a round-robin assessment  
6 of the boric acid programs at all the stations, and  
7 what Mr. Donahue is referring to is each one of the  
8 plants right now has a current plant program, and  
9 we're trying to move ourselves to a corporate program  
10 on boric acid. Rather than try to enhance each one  
11 of the stations, we would rather have a stronger  
12 corporate program, and that's what the move is  
13 toward.

14 MR. DONAHUE: We're incorporating the  
15 recent assessment of the raw corporate organization,  
16 the Westinghouse plan and information from INPO on  
17 working with boric acid.

18 CHAIRMAN LEITCH: And I guess this is  
19 kind of the same question. I thought I heard there,  
20 as well, that a subsequent NRC inspection was  
21 required. Is that -- regarding this boric acid  
22 linkage to plant procedures. Is that correct?

23 MR. JULIAN: We took a look at where they  
24 are on the screen during its third inspection, and  
25 they have an internal review of their nuclear

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1 assessment section that identified and paralleled the  
2 same issue, and that's tracked to be resolved by the  
3 end of the year. We were satisfied with that because  
4 the tracking was --

5 CHAIRMAN LEITCH: So that -- I guess  
6 that's a piece of information I'm missing, and maybe  
7 I'm getting the cart before the horse. But  
8 typically, there are two NRC inspections required of  
9 license renewal activity, and sometimes three. And  
10 at Robinson, you did the third?

11 MR. JULIAN: Right.

12 CHAIRMAN LEITCH: And that has just  
13 recently been completed?

14 MR. JULIAN: That is correct.

15 CHAIRMAN LEITCH: And I don't think we've  
16 seen the results of that, so that may be the linkage  
17 we're missing. I've seen one and two, but I don't  
18 think I've seen the results of three yet.

19 DR. KUO: That's being issued.

20 MR. JULIAN: Yes, it is.

21 CHAIRMAN LEITCH: Okay. So I can see it.  
22 Okay. Thank you.

23 MR. STEWART: Continuing with commitments  
24 and commitments tracking. Once we've implemented a  
25 commitment, typically these commitments are in some

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1 sort of a procedure, work procedure or whatever we  
2 agree at. We will have identified the specific -- we  
3 will identify it as a commitment in the implementing  
4 document, and that doesn't mean that you can't revise  
5 the document. But if you do revise it, you have to  
6 go through the 50.59 process, determine if there's  
7 any unreviewed safety question, or if you need to go  
8 back to NRC if you're doing anything that might  
9 affect the commitment. So we identify, we basically  
10 implement the changes, make the changes in the  
11 document, flag them as a commitment to the NRC, and  
12 rely on a 50.59 process to make sure that we don't do  
13 something in the future that might negate the  
14 commitment.

15 One other thing that we envision is after  
16 we -- we're working on -- currently now we're taking  
17 a look at our configuration control process so that  
18 we can incorporate some guidance to ensure that the  
19 requirements of 10 CFR 54.37 are met. These are  
20 basically, if you identify new structures or make a  
21 change or something, you basically go through the  
22 same sort of process that you would initially when we  
23 did the IPA on the plant. So we're looking at  
24 putting some controls in our configuration control  
25 process to make sure that we're looking at that.

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1                   We'll support this by -- when we do this,  
2 we'll do license renewal training to make sure people  
3 are aware of the requirements. We'll also have the  
4 equivalent of a license renewal design basis-type  
5 document. And, of course, we'll have the -- we will  
6 have issued -- it'll be Chapter 18 in our UFSAR,  
7 which would be a UFSAR supplement for license renewal  
8 that has all the program descriptions. And that's  
9 currently Appendix A in our license renewal  
10 application. That's all I have.

11                   CHAIRMAN LEITCH: Okay. Any questions  
12 for the applicant at this time? Okay. Thanks very  
13 much. If you're going to be around, there may be  
14 questions. You know, some of this is -- it's not a  
15 bright line between the applicant and the NRC  
16 discussion, so we often bounce back and forth. Thank  
17 you. Okay, P.T.

18                   DR. KUO: Okay. S.K., your show. We are  
19 about 30 minutes behind, so we've got to make up the  
20 --

21                   MR. MITRA: I'll go as fast as I can.  
22 Good afternoon. My name is S.K. Mitra. I am the  
23 Safety Review Project Manager for Robinson Nuclear  
24 Plant. Actually, the plant's name is H.B. Robinson  
25 Steam Electric Plant, Unit 2, but we call it Robinson

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1 Nuclear Plant, and in safety evaluation report we  
2 also called it Robinson Nuclear Plant, so it's much  
3 easier to speak about.

4 And with me, I acknowledge Dr. Mario  
5 Cora, who have helped me for the last few months to  
6 get together the safety evaluation report, and Mario  
7 will join us to do some presentation, part of the  
8 presentation with me. And also later on, Caudle  
9 Julian from Region 2, he's the Team Lead for all the  
10 inspections, so he will highlight the inspection  
11 presentation for us.

12 The application was submitted on June  
13 14th, 2002. It's a Westinghouse pressurized water  
14 reactor, 3 loop low cycle, generated 2339 megawatt  
15 thermal, and 769 megawatt electrical. We'll just go  
16 one unit at a time. And the plant is located on the  
17 shore of a manmade lake, Lake Robinson in Darlington  
18 County, South Carolina. And the current license will  
19 expire on July 31st, 2010, and the request for  
20 renewal to July 31st, 2030. And this is the second  
21 application we have reviewed using the GALL process.

22 We have two open items, and we have 29  
23 confirmatory items. Let me explain what open items  
24 and confirmatory items mean. Open items means that  
25 the issues that was not resolved when we issue our

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1 SER with open item, which is on August 25th, that's  
2 the open items. Two of them were still open at that  
3 time. The confirmatory items were the issues, we  
4 have resolved it, but we still waiting for the formal  
5 reply under oath and affirmation from the applicant.  
6 And we have received it, but we didn't go through the  
7 review as yet, and when Staff have a chance to review  
8 it, and they will include in their final SER those  
9 confirmatory items.

10 CHAIRMAN LEITCH: How are the two items  
11 resolved; that is, the steam generator feed drains  
12 and the feed well pumps?

13 MR. MITRA: We will address it.

14 CHAIRMAN LEITCH: These are the audits  
15 and inspections we have done, three inspections and  
16 two audits. The first one was the scoping and  
17 screening methodology audit. The second one is the  
18 scoping and screening inspection. We did aging  
19 management program audit, and we did aging  
20 management review inspection. And the last one, as  
21 Mr. Leitch was asking, is the final inspection,  
22 which we do in September 9 and 10 and the report  
23 was just being --

24 DR. BONACA: It was issued a new  
25 license.

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1 MR. MITRA: Yes, sir.

2 DR. BONACA: I mean, you described that  
3 you're going to have more time spent on-site.

4 DR. KUO: Right. And if I may, I'd  
5 like to point as the aging management program  
6 audit, this is the first one in a series of three,  
7 Robinson, Ginna and Summer that we will send a team  
8 of about 7 to 8 engineers and go into the site to  
9 verify the consistency with GALL parts. So, the  
10 rule we had was that when the applicant in their  
11 application indicated that their aging management  
12 program is consistent with GALL, the Staff only  
13 verifies a few boundary perimeters, but will not do  
14 the repeated review as we did in GALL, so the  
15 reviews stop there. But we would like to verify  
16 their consistency on-site, whether they have made  
17 the right judgment in terms of making a call that  
18 their program is consistent with GALL or not.

19 So that's what we started with  
20 Robinson, and we did two others. And after that,  
21 we will talk to the Committee again, when we have  
22 this new process. This is the period of a new  
23 process.

24 MR. MITRA: And we will be addressing  
25 each of the audits and the inspection later on as

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1 we progress.

2 DR. BONACA: Could I ask how many RAIs  
3 you have for this plant?

4 MR. MITRA: Okay. We have over 310  
5 RAIs.

6 DR. BONACA: See, what surprises me is  
7 that you used to have 170, 180. Then we get the  
8 first GALL, and that's 240. I keep this tally.  
9 Now we have the second GALL and we have 350. I  
10 mean, these numbers warrant explanation.

11 MR. MITRA: Yeah, I -- my feeling is  
12 that the RAIs that we have in Robinson review is in  
13 the same ball park with the Fort Calhoun. The only  
14 difference is how the RAIs are structured. You  
15 know, you just see the numbers and not always give  
16 you the exact issues of the RAIs. And secondly,  
17 since Fort Calhoun was the first GALL plant that  
18 Staff reviewed, we went back and did a second  
19 evaluation of the RAI process. We call it  
20 potential open items, and it has 13 items, but we  
21 have 59 issues in there. So if you add up, it  
22 comes about the same.

23 DR. BONACA: I guess where I'm going is  
24 that you're increasing the number of weeks you're  
25 spending on-site, which I believe is the right

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1 thing to do. I would expect to see a reduction in  
2 RAIs as you go forth because, I mean, you're  
3 solving issues as you go, and you have to write  
4 them down.

5 MR. MITRA: As we are --

6 DR. KUO: For this plant, actually, the  
7 RAIs were generated as using the traditional  
8 process, so the auditor went to the site only to  
9 verify the claim that these programs are consistent  
10 with GALL. And actually, they did some  
11 verification on the RAI process.

12 CHAIRMAN LEITCH: Wasn't another  
13 factor, though, that the ISGs were just being  
14 promulgated at this time.

15 MR. MITRA: Yes.

16 CHAIRMAN LEITCH: And the RAIs were a  
17 supplement to respond to the ISGs. I mean, had  
18 that all been done up front, it might have reduced  
19 the number of RAIs.

20 MR. MITRA: Exactly, because the RAIs  
21 were submitted after the application was here, and  
22 most of the RAIs on those ISGs were already being  
23 issued.

24 MR. ROSEN: So what is the first plant  
25 where we could expect to see a reduction in the

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1 RAIs?

2 DR. KUO: I would say starting from  
3 Farley you will see a significant reduction.  
4 Farley is here already.

5 DR. BONACA: Yes.

6 DR. KUO: But starting Farley, we used  
7 the new process. We sent auditor teams on site  
8 review.

9 CHAIRMAN LEITCH: Before that there is  
10 Ginna and Summer --

11 DR. KUO: Dresden and Quad Cities.

12 CHAIRMAN LEITCH: Dresden and Quad  
13 Cities. How about Brown's Ferry?

14 DR. KUO: Brown's Ferry would be in  
15 September, I mean in December, I'm sorry.

16 CHAIRMAN LEITCH: Okay.

17 DR. BONACA: So, hopefully, we are not  
18 seeing growth any more of the --

19 DR. KUO: I hope too.

20 DR. BONACA: Because, I mean, this is a  
21 question we have from the Commission. We are  
22 meeting with the Commissioners on Thursday, and  
23 when we talk about license renewal, the question  
24 always comes, you know, are we getting better, are  
25 we getting more efficient? And, you know, my

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1 desire is to say yes, sir, but as long as we see  
2 the number of RAIs growing --

3 MR. SIEBER: Just say it, we're getting  
4 better and better.

5 DR. KUO: If you see the same number of  
6 RAIs for Farley, it means that we failed in the  
7 process.

8 MR. BURTON: Dr. Bonaca, this is Bill  
9 Burton with the Staff. I think you'll see in the  
10 presentation for Fort Calhoun tomorrow, we're going  
11 to be talking about some lessons learned, and a lot  
12 of which you're seeing with Robinson is some of the  
13 implementation from some of the lessons learned  
14 from Fort Calhoun. And some of those things had an  
15 impact on the number of RAIs and things like that,  
16 so we'll talk about that a little bit tomorrow.

17 DR. BONACA: Thank you.

18 MR. MITRA: Any other questions? If  
19 not, I will have Dr. Mario Cora to present the  
20 scoping and screening portion of the presentation.  
21 Mario.

22 DR. CORA: Okay. Good afternoon,  
23 members of the ACRS Subcommittee for H.B. Robinson,  
24 our co-workers and members of the public. My name  
25 is Mario Cora. Today I will be presenting Section

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1 2, which we heard in some SER that we put together.  
2 I have been assisting Mr. S.K. Mitra, who is the  
3 Lead Project Manager in this project, the safety  
4 part.

5 Section 2 is entitled "Structures,  
6 Components Subject To An Aging Management Review",  
7 and this section in the SER is divided in five  
8 sub-sections. I will be going through the  
9 sub-sections subsequently.

10 The first section is Section 2.1, which  
11 deals with the scoping and screening methodology  
12 that the applicant used in describing the license  
13 renewal application. And our evaluation in the  
14 SER, we present our evaluation of the applicant's  
15 scoping and screening methodology. As part of the  
16 -- in Section 2.1 of the SER, we describe our Staff  
17 methodology audit. Staff evaluated the applicant's  
18 methodology to being in scoping and screening in  
19 the license renewal application.

20 CHAIRMAN LEITCH: Say, Mario, in the  
21 interest of time, unless some of the Committee has  
22 specific questions, I would suggest may be jump to  
23 2.3.

24 DR. CORA: You want to jump?

25 CHAIRMAN LEITCH: Yes, to 2.3.

1 DR. CORA: 2.3.

2 CHAIRMAN LEITCH: That's good, yeah.

3 DR. CORA: So 2.3 describes the  
4 mechanical systems, and in the license renewal  
5 application, this section is divided in reactor  
6 systems, engineered safety features, and auxiliary  
7 systems. These numbers we see in parentheses are  
8 the systems dealing with each of the major  
9 sections.

10 These were the system structural  
11 components that were initially omitted that meet  
12 the scoping criteria. These were the steam  
13 generator feedrings, the work pumps and associated  
14 piping, the hydrogen recombiners, spent fuel to  
15 make a path from the feeding water storage tank to  
16 the flow path. The systems were brought into scope  
17 after the Staff evaluated the aging management  
18 review.

19 CHAIRMAN LEITCH: Now the hydrogen  
20 recombiners, aren't they no longer required as per  
21 the changes to 50.44, or is that not yet the case,  
22 but at the time --

23 MR. STEWART: The rule change has been  
24 issued. We have not taken advantage of the rule  
25 change and take them out of our current licensing

1 basis.

2 MR. ROSEN: So the rule requires a  
3 site-specific amendment?

4 CHAIRMAN LEITCH: Yeah. I'm just -- I  
5 mean, I don't have a safety concern, obviously.  
6 It's just that efficiency, I was just surprised  
7 that they were still in there.

8 MR. ROSEN: Well, if they weren't, we  
9 would have complained.

10 CHAIRMAN LEITCH: We would have  
11 complained --

12 MR. STEWART: The rule change was just  
13 issued.

14 MR. ROSEN: Because they have to be  
15 removed by a site-specific --

16 DR. CORA: This is still their current  
17 licensing basis.

18 MR. ROSEN: So you can't win this one.

19 CHAIRMAN LEITCH: Let's move on. I'm  
20 sorry.

21 DR. CORA: So you want to continue on  
22 Section 2.3?

23 CHAIRMAN LEITCH: Right.

24 DR. CORA: Jumping to Section 2.3, we  
25 have two open items in the SER, and the two open

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1 items are in Section 2. The open items are 2.3,  
2 1.6-1 deals with feedrings, deals with the  
3 feedrings into scope, license renewal. The Staff  
4 understands that safety-related component,  
5 feedrings, is inside the safety-related component,  
6 and the Staff understand that should be brought  
7 into scope. In this part, within the feedring and  
8 j-nozzles could damage the safety-related  
9 components, especially when you get a transient.  
10 After the evaluation, the applicant submitted a  
11 response and this is in scope of license renewal.  
12 Up to this point, the open item is resolved.

13 The next open item we have is 2.3 3.8-  
14 1, where we have deep well pumps, and basically the  
15 issue here is following a Lake Robinson dam  
16 failure, the condition, the condensation storage  
17 tank, the deep well pumps will be the final supply  
18 of water for us evaluating feedwater. The Staff  
19 requested an RAI why there was an exclusion of the  
20 deep well pumps, and that issue was resolved.

21 CHAIRMAN LEITCH: So these deep well  
22 pumps in a last ditch effort then supply what, is  
23 it ground water?

24 DR. CORA: Yeah, that's my  
25 understanding.

1 CHAIRMAN LEITCH: Ground water to the  
2 aux feed system.

3 MR. STEWART: That's correct. That's  
4 after we run out of lake water.

5 CHAIRMAN LEITCH: Okay. So the deep  
6 well pumps feed the auxiliary feedwater storage  
7 tank?

8 MR. STEWART: They can feed the storage  
9 tank within --

10 MR. SIEBER: Pumps right in.

11 DR. CORA: So now I will present two  
12 confirmatory items in Section 2. One of them is  
13 the hydrogen recombiner, and basically, the Staff  
14 understand that the hydrogen recombiner should be  
15 brought into scope. And after the RAI was issued,  
16 the applicant responded, and this hydrogen  
17 recombiner were brought into scope of license  
18 renewal.

19 The next confirmatory item deal with  
20 the spent fuel pool makeup path. Okay? This was a  
21 confirmatory item that was an issue in the SER, and  
22 deals with the path between the refueling water  
23 storage tank and the spent fuel pool. And the  
24 Staff believe that that piping connection should be  
25 brought into scope, and on an RAI, the applicant

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1 responded and this was brought into scope of  
2 license renewal.  
3 Section 2.4 in the SER deals with the structural  
4 components subject to an aging management review.  
5 The way that the license renewal application is  
6 organized, it's organized in committing from the  
7 containment as a balanced structure, and then it  
8 lists 13 other structures. Up to this point, when  
9 we issued the SER, there is no open items or  
10 confirmatory items in this section.

11 Section 2.5 deals with the electrical  
12 systems and instrumentation, the control system.  
13 The Staff requested why these main components were  
14 not in scope, and up to this point, they show  
15 background components were brought into scope, and  
16 all associated components dealing with this were  
17 brought into scope.

18 MR. ROSEN: Now before you get off this  
19 slide, this is where my question was, about  
20 Building 175, which is the switch yard relay  
21 building, and the switch yard and transformer  
22 itself. Are they now all in scope?

23 MR. MITRA: Yes, all in scope.

24 MR. STEWART: Portions of it.

25 MR. ROSEN: Yeah, because the May

1 inspection report has a table at the back that says  
2 they are not.

3 MR. JULIAN: That came from the  
4 original application, that information, pointing  
5 out originally the application came in and they did  
6 not address station blackout and so it's been a  
7 retrofit going through the process.

8 MR. ROSEN: So your inspection was  
9 against the original application.

10 MR. JULIAN: We pulled that out of the  
11 application.

12 DR. KUO: They brought in, for the SPO  
13 they brought in four additional structures.

14 MR. ROSEN: Four additional structures,  
15 not just two. Now, you list the switch yard and  
16 transformers, we're talking about the unit  
17 auxiliary transformer and the main transformers?  
18 What are the transformers that we're talking about  
19 that are now in scope?

20 MR. STEWART: The startup transformer.

21 MR. ROSEN: Just startup. Is there a  
22 startup transformer?

23 MR. STEWART: Yeah.

24 MR. ROSEN: So those three, at least  
25 those three transformers?

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1 MR. STEWART: Yes.

2 MR. ROSEN: Even the auxiliary startup  
3 and main?

4 MR. BARTON: I'm not sure. I'm  
5 confused. On page 245-2 of the LAR, item 1,  
6 electrical bus has been eliminated from the aging  
7 management. And that item describes the isolated  
8 phasal, switch yard and transformer and associated  
9 switch yard bus. Now I'm assuming that to be the  
10 main transformer in that piece of equipment.

11 DR. KUO: I have the technical --

12 MR. BARTON: So I'm confused between  
13 that and what you're saying now is switch yard,  
14 switch yard house, and all the stuff required for  
15 SBO is now in scope. Is that different than what  
16 you described in Section 2.5-2 of the LAR?

17 DR. KUO: I have the reviewer here.

18 MR. BARTON: I think that would clarify  
19 the --

20 MR. ROSEN: Maybe if you step up to the  
21 diagram and show us what's in scope and what's not.

22 CHAIRMAN LEITCH: You need to identify  
23 yourself.

24 MR. SIEBER: Here, I'll give him the  
25 laser. He can use that if he wants.

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1 DR. KUO: Identify your name, please.

2 MR. PAL: This is Amar Pal, Electrical  
3 Engineering Branch. The first breaker that sits  
4 here on the offsite source, number one offsite  
5 source.

6 CHAIRMAN LEITCH: Is that in the switch  
7 yard there?

8 MR. PAL: This is the switch yard.

9 CHAIRMAN LEITCH: Yes.

10 MR. PAL: This is the switch yard bus.  
11 This is the breaker. This is this portion of the  
12 bus from the switch to this portion of the bus, and  
13 this connects to it and then another breaker. This  
14 is the transmission conductor for the primary  
15 status transponder, and then from the startup  
16 transformer, by means of a non-segregated phase  
17 bus, goes to the non-transforming switch gear. And  
18 then from the non-transforming switch gear via  
19 step-down transformer to breaker bus goes to the  
20 emergency bus. See, this is the transformer and  
21 you have to -- so this -- and the other one is from  
22 this transformer here to the D-train and the  
23 A-train, this being the first --

24 MR. ROSEN: All of that in red is in  
25 scope now.

1 MR. PAL: Yes. And then the second  
2 off-site source is through the main transformer.  
3 This is the breaker, this is the bus, same thing,  
4 to breaker, and the transmission from that to the  
5 main transformer. To get this supply, they have to  
6 disconnect the generator from the transformer.  
7 Without that, they can't get this off-site source  
8 so they disconnect the transformer and so on.

9 MR. ROSEN: So everything in blue there  
10 is now in scope.

11 MR. PAL: Now in the scope.

12 MR. ROSEN: And that source in the  
13 upper right-hand corner is the Unit 2 switch yard.

14 MR. PAL: This is the switch yard, yes.

15 MR. ROSEN: For the Robinson Nuclear  
16 Plant.

17 MR. PAL: That's right.

18 MR. ROSEN: Now on the other side, is  
19 the switch yard for the non-nuclear plant.

20 MR. PAL: No, this is their off-site  
21 source.

22 MR. ROSEN: It's their off-site source?

23 MR. PAL: Yes.

24 MR. ROSEN: I want to talk about the  
25 left side. Stay there. Where physically are those

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1 breakers located?

2 MR. PAL: These breakers in the switch  
3 yard.

4 MR. ROSEN: Which switch yard?

5 MR. PAL: The 230 KV switch yard.

6 MR. ROSEN: What? I'm sorry. I can't  
7 hear you.

8 MR. PAL: 230 KV switch yard. They  
9 have two switch yards.

10 MR. ROSEN: I know. So that's the 230  
11 KV switch yard, which is associated with which  
12 unit?

13 MR. PAL: The same nuclear unit, Unit  
14 2.

15 MR. HEATH: Amar, that's the 115 KV  
16 switch yard associated with Unit 1. And the other  
17 side Unit 2 is 230 KB switch yard.

18 MR. ROSEN: Okay. So your normal piece  
19 on the Unit 1 slide, and that has now got two  
20 breakers and some associated bus that are in scope  
21 for license renewal for the nuclear plant.

22 MR. HEATH: Right. That's where --  
23 that's the issue I would put on the table.

24 MR. ROSEN: To me, that creates some  
25 issues that were not typical, in that now you've

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1 got components of the nuclear plant's licensing  
2 basis, it's a renewable licensing basis, that are  
3 actually in the fossil switch yard, I mean, a  
4 non-nuclear switch yard. Is that correct?

5 MR. HEATH: It would be difficult --  
6 the switch yard is all together.

7 MR. ROSEN: I thought you said there  
8 were two separate switch yards.

9 MR. HEATH: No, they're all together.  
10 There's one switch yard. The Unit 1 side feeds  
11 into the 115 KB. The Unit 2 side feeds into the  
12 230 KB. It's all one switch yard. Typically  
13 though, that's the separation, just which plant is  
14 normally connected to which switch yard, which set  
15 of the 115 KB or 230 KB. In other words, Unit 1  
16 could shut down and it would make no difference to  
17 Unit 2, as far as that switch yard is concerned.

18 CHAIRMAN LEITCH: Now where is the  
19 second off-site source?

20 MR. PAL: Through the main transformer.

21 CHAIRMAN LEITCH: But is that a  
22 disconnect switch between the generator and that.  
23 There's copper links that must be removed?

24 MR. PAL: Yes. There could be some  
25 disconnecter unit.

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1 MR. ROSEN: But now we'll have aging  
2 management inspections on this portion of the  
3 switch yard on the left hand side.

4 CHAIRMAN LEITCH: Up to and including  
5 those two main circuit breakers.

6 MR. PAL: That's right.

7 MR. DONAHUE: Mike, these breakers here  
8 in the red, they're under existing scope. The red  
9 and blue are under existing --

10 MR. HEATH: I can't say. They are what  
11 these --

12 MR. ROSEN: And who takes care of those  
13 breakers in the switch yard? Is that the Progress  
14 Energy's transmission group?

15 MR. HEATH: Yes.

16 MR. ROSEN: Both the red and blue  
17 breakers.

18 MR. HEATH: Red and blue. We have an  
19 interface agreement with the transmission  
20 organization. Those are the same tech spec  
21 reference, for those playing the tech spec side.  
22 It's all associated. It's all maintained by the  
23 same group.

24 MR. ROSEN: And the switch yard relay  
25 building has batteries typically, which would be

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1 now in scope? Am I correct?

2 MR. SIEBER: There are auxiliaries to  
3 the breaker.

4 MR. ROSEN: No, I'm asking them. Are  
5 those in scope? The switch yard relay building is  
6 now in scope, I've been told, 175. Batteries  
7 react, equipment interior to the relay building.

8 MR. REYNOLDS: The batteries are active  
9 components.

10 MR. ROSEN: Active components. So  
11 anything in that building, except the batteries,  
12 which are handled under Maintenance Rule is in  
13 scope because of license renewal now.

14 CHAIRMAN LEITCH: In scope that may be  
15 screened out because they're active.

16 MR. ROSEN: Well, no, just the  
17 batteries were active.

18 CHAIRMAN LEITCH: Other active  
19 components.

20 MR. PAL: Relays on there two.

21 MR. ROSEN: Relays might be screened  
22 out, yeah. But duct work and other things might  
23 not be.

24 MR. PAL: Electrical work and the cable  
25 capacity component is under.

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1 MR. ROSEN: Well, that's right. So  
2 there will be activities, license renewal  
3 activities beginning sometime before the end of  
4 this term, the license term, in the relay building  
5 because of the license renewal of Unit 2, which  
6 will be inspected. This is always a tricky  
7 business, this interface with the external source.  
8 From an inspection point of view, and from a  
9 licensee management point of view, because you're  
10 interfacing with another organization, and the  
11 transmission review. Okay.

12 DR. KUO: Sometimes these components  
13 are actually are not owned by the licensee.

14 MR. ROSEN: They're not owned by them,  
15 but in this case they are.

16 DR. KUO: Right. The same license.

17 CHAIRMAN LEITCH: Could we get a copy  
18 of that little one-line diagram you just had up  
19 there too? That would be helpful if we could get a  
20 copy of that. Thank you. Go ahead, Mario. Thank  
21 you.

22 DR. CORA: So we -- the Staff  
23 determined that the applicant's screening satisfies  
24 the rule, and all system structural components  
25 within scope, are subject to an AMR.

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1                   Now I would turn over to Mr. Caudle  
2 Julian, who is a Team Leader for Region II. He  
3 will be briefing you on the audits and inspection.

4                   MR. JULIAN: How do I go forward?  
5 We'll talk about, today, the license renewal  
6 inspections that were done at Robinson, and this  
7 just shows you the outline of what our program is.  
8 We've talked about it before. This is a slide that  
9 I've shown you before, I believe, that we have an  
10 organized program for license renewal inspection,  
11 our manual Chapter 25.16, and an inspection  
12 procedure, 71.002. And I've told you before, I  
13 think, that within Region II, we have a consistent  
14 team of inspectors that's gone from site to site,  
15 and we continue to maintain that so far, luckily.

16                   Scoping and screening inspection, the  
17 objective of that is to confirm that the applicant  
18 has included all appropriate system structures and  
19 components in the scope of license renewal, as  
20 required by the rule. One week in length, starting  
21 March 31st at the Robinson site, and we had  
22 successful conclusion. The scoping and screening  
23 process was successful, we thought.

24                   The things we ran across there that we  
25 dealt with, our inspectors independently came along

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1 and questioned why Unit 1 and 2 fuel oil transfer  
2 piping deep well backup water supplies for  
3 auxiliary feedwater were not in scope, and we --  
4 our inspectors came across that independent of NRR,  
5 and so we both worked together on that issue.

6 MR. ROSEN: What about the power supply  
7 for the B-12 pumps?

8 MR. JULIAN: I don't know where those  
9 are powered from. Do you know, Mike, the deep well  
10 pumps? He's asking if the deep well pumps have any  
11 emergency power supply, I presume, is your  
12 question.

13 MR. HEATH: They're not.

14 MR. JULIAN: Right.

15 MR. ROSEN: Are they in scope? Is the  
16 power supply for those pumps in scope?

17 MR. HEATH: We did elective scoping on  
18 the plant spaces and power supply.

19 MR. JULIAN: The answer is yes, as far  
20 as the cables and the power supply. I don't think  
21 it's off emergency power, because you wouldn't  
22 typically postulate --

23 MR. ROSEN: Oh, no. That's not -- I  
24 wasn't asking about emergency power. I'm just  
25 asking whether the power supply itself is

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1 considered in scope for license renewal or not. I  
2 mean, how far back do you go? You're into your  
3 third backup here, and now I'm asking questions  
4 about the aging management of the third backup's  
5 power supply. I'm not getting a clear answer to  
6 that.

7 MR. JULIAN: The clear answer to that  
8 would be -- the easy pat answer is that all cables,  
9 they decided, are in scope; therefore, the cables  
10 themselves are in scope, but I don't believe those  
11 pumps are powered off emergency power. I would not  
12 expect that. They're a balance of plant type  
13 thing.

14 Let's see, how did I get ahead? How do  
15 I back up?

16 There are three examples of the  
17 inconsistency between the application and the  
18 boundary drawings and the calculations. We run  
19 across these paperwork discrepancies, and they  
20 repaired them. We ran across the calculation that  
21 they had and it's very confusing, describing how  
22 they're handling a non-safety related piping in the  
23 vicinity of safety-related. It was a very  
24 confusing procedure, and we struggled with that  
25 during inspection. Since then, they've gone back

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1 and completely rewritten that procedure to make it  
2 clear how that work was done, and we're happy with  
3 it. Subsequently, as I said in an inspection we  
4 looked at, we think that these issues have been  
5 fixed.

6 The second inspection was the aging  
7 management program's inspection. The objective  
8 confirmed that existing AMPs are working well, and  
9 examined the applicant's plan for establishing new  
10 AMPs and enhancing existing ones. Two weeks in  
11 length, conducted in June.

12 What we concluded from that was that we  
13 thought that there was incomplete integration of a  
14 future task into the established site action  
15 request tracking system. That's the issue that  
16 Roger discussed a bit ago. Since then, we've gone  
17 back and confirmed that's been fixed. They had a  
18 tracking system, but it was a working tool. It was  
19 not utilizing the official plant future task action  
20 tracking, so they needed to integrate those.

21 We concluded our walk down inspection during  
22 this period of time, and we concluded that the  
23 material condition of the plant was being  
24 adequately maintained, and observed that it has  
25 improved over time. We think Robinson looks better

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1 today than it used to in the olden days when we  
2 used to go there. The documentation was of good  
3 quality.

4 In this case, we wanted to make sure  
5 that we got the tracking system squared away, so we  
6 have completed already a third optional inspection,  
7 and we're satisfied that Roger has loaded  
8 everything into the official plant tracking system.  
9 And he has a good transition plan for completion of  
10 the license renewal project, and turning over of  
11 items that he himself will not get to complete. Now  
12 to say a word about the current status of the ROP,  
13 Reactor Oversight Program, and Robinson has a very  
14 good track record, as you can see. This is off our  
15 web site. All the performance indicators are  
16 green, and there have been no significant findings  
17 in the last two years, a couple of them, but  
18 they've been rated as green, very low safety  
19 signals. That concludes what I have to say. Do  
20 you have questions?

21 CHAIRMAN LEITCH: I have a couple of  
22 questions. I guess one related to this containment  
23 debris sump clogging issue, and you say something  
24 about a zone of influence. This is on the second  
25 inspection, page 14, zone of influence at 5,000

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1 square feet.

2 MR. JULIAN: Right. That's our  
3 structural inspector, who's -- each time he goes  
4 there, he always challenges the applicant to see if  
5 they have the calculation that deals with plugging  
6 of sump screens, and how much is likely -- how much  
7 plugging is likely to occur. That's what he's  
8 talking about there.

9 CHAIRMAN LEITCH: My question was  
10 really -- maybe I have the wrong picture of this  
11 thing. I was picturing a zone of influence in  
12 terms -- I would expect the units to be in cubic  
13 feet. Not so? Instead of square feet.

14 MR. JULIAN: Gosh, I don't know. I  
15 really don't know the answer to that.

16 MR. SIEBER: The surface of --

17 MR. STEWART: Our reaction is we have a  
18 zone of influence defined. You go in, and there's  
19 an and there's an overlay of some drawings that  
20 says, here's the area you're worrying about, and  
21 typically what we do is we have stricter controls  
22 on the coding and stuff in those zones of  
23 influence. And since they're overlaid, there's an  
24 overlay on the plant general arrangement drawing, I  
25 would expect it would be in terms of square feet,

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1 not surface area.

2 MR. JULIAN: I pictured it myself.  
3 That's why I thought you were saying those areas  
4 that could be impacted by high energy line break or  
5 something like that. You mentioned about the  
6 insulation on the walls, and it's -- they were not  
7 able -- I didn't go into containment, of course,  
8 during the time we were there. We did an earlier  
9 inspection on this, but the insulation was fairly  
10 well attached to the walls. It's on there with  
11 bolts, so we don't --

12 MR. ROSEN: But the things that get  
13 released when it's hit by a 2000 PSI stream of  
14 steam --

15 MR. CLEMENTS: But there's not a LOCA  
16 that could contain that. Because you have a feed  
17 line break or a steam line break, and --

18 MR. ROSEN: So it would be 1000 PSI.

19 MR. CLEMENTS: Yeah, but not a LOCA  
20 that --

21 MR. ROSEN: Right. Well, I would just  
22 think that a higher energy --

23 MR. CLEMENTS: If you had a broken  
24 primary, you don't put anything -- you have to put  
25 in the sump, and you're not worried about resource.

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1 You have a breached primary, you don't worry about  
2 the sump.

3 MR. JULIAN: He's saying the steam line  
4 or feed line break would not challenge the reactor  
5 --

6 MR. ROSEN: It wouldn't need to go to  
7 --

8 MR. JULIAN: It wouldn't go to the  
9 circulation.

10 CHAIRMAN LEITCH: I had two questions  
11 that are perhaps more properly directed to the  
12 staff, one on page 7 of this second inspection  
13 report, and one on page 12. Page 7 talks about the  
14 one-time inspection program, and it sounds like  
15 that was yet to be developed at the time of this  
16 inspection.

17 MR. JULIAN: That is correct. That's a  
18 commitment, one of the commitments that Roger  
19 discussed to be done on down the road.

20 CHAIRMAN LEITCH: And the same question  
21 about the electrical aging management program.

22 MR. JULIAN: Their electrical aging  
23 management program is in a very infancy of being  
24 developed. They're one of the applicants who came  
25 in originally and said the application said we need

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1 no aging management for electrical components. And  
2 I think that they revised their position. Am I  
3 correct?

4 MR. STEWART: That's correct.

5 MR. JULIAN: Yes. So they have a  
6 description of their plans in the future. They  
7 have yet to be developed yet for cable, primarily  
8 cable inspection.

9 CHAIRMAN LEITCH: I guess, you know,  
10 some of these where the aging management program is  
11 a commitment to future industry action and the  
12 industry's developing things, I'm not surprised  
13 that that's the case but, you know, like the  
14 one-time inspection program, I don't know what  
15 future industry actions are required. I mean, why  
16 couldn't that just be developed now?

17 MR. JULIAN: Correct me if I'm wrong,  
18 Roger, but typically the one-time inspection  
19 program is a different applicant group, done  
20 different ways, but there may be more than one of  
21 those things, and those are typically things where  
22 the Staff feels like that, despite all assurances,  
23 it would be good before the start of the extended  
24 operating period to have a one-time inspection  
25 inside branch lines, you mentioned on RCS, fire

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1 protection I think may be another. And those are  
2 things that they have committed to do, but their  
3 commitment is to do them before the start of the  
4 extended period of operation, so they're going to  
5 drop loose and do them right now.

6 MR. BARTON: You guys did look at the  
7 electrical scoping when you were on site. What  
8 seems to be peculiar in this application is that  
9 there was a statement in here somewhere that  
10 there's no medium voltage cabling that requires  
11 aging management because it's not in an environment  
12 that's conducive to degradation of the insulation.  
13 All right. I find that hard to believe, that  
14 there's no 4160 kind of cable that runs anywhere in  
15 the plant.

16 There's another place in here that  
17 talks about cables and manholes that are direct  
18 buried. I assume that's in a conduit that's direct  
19 buried, not in a duct pipe. You know, and none of  
20 that is subject to any moisture, and none of that's  
21 4160 cabling, or you know, I'm lost. This is the  
22 first application I saw where there's no medium  
23 voltage cable that's in aging management scope.  
24 This plant must be in the air someplace or  
25 something. Dry air.

1 MR. HEATH: I'm Mike Heath. I'm the  
2 Electrical Lead at the Robinson Plant.

3 MR. BARTON: Yeah.

4 MR. HEATH: The cable we're concerned  
5 with is 4K, the medium voltage cable that's --

6 MR. BARTON: Right.

7 MR. HEATH: -- that's subject to eddy.

8 MR. BARTON: Right.

9 MR. HEATH: And it's in scope. At  
10 Robinson, we've had no cable that's subject to  
11 eddy. There was, in fact, a follow-up question on  
12 this particular plant, and we're very unusual.

13 MR. BARTON: You sure are.

14 MR. HEATH: But it's - - most plants,  
15 in fact, are going to have that, but in our case,  
16 we don't.

17 MR. CLEMENTS: The safety systems are  
18 almost exclusively 481.

19 MR. HEATH: And our service water pump  
20 is 481.

21 MR. BARTON: None of your diesel  
22 cabling or any of that stuff is subject to --

23 MR. HEATH: Diesel cabling is 481 --

24 MR. BARTON: It's all 481.

25 MR. HEATH: It's an unusual plant.

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1 MR. BARTON: I guess you are. Okay.

2 MR. SIEBER: Well, what do  
3 you know?

4 CHAIRMAN LEITCH: In one of your  
5 inspection reports, that there are no underground  
6 tanks.

7 MR. JULIAN: Right.

8 CHAIRMAN LEITCH: Is that correct, or  
9 is that too sweeping a statement?

10 MR. JULIAN: I believe that is true.

11 CHAIRMAN LEITCH: No underground tanks.

12 MR. SIEBER: That's what they say.

13 MR. JULIAN: The reason the titles  
14 appear like that, because a lot of times the  
15 applicants are following the GALL outline.

16 CHAIRMAN LEITCH: Right.

17 MR. JULIAN: Yeah, so we have some  
18 strange titles.

19 CHAIRMAN LEITCH: Yeah. So there's a  
20 section on underground tanks, and there are no  
21 underground tanks.

22 MR. JULIAN: This is a program about  
23 tanks, and there are no tanks.

24 CHAIRMAN LEITCH: Okay.

25 MR. BARTON: See, that's why this

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1 applicant, though, has all tank foundations in  
2 scope, because all the tanks are above ground.

3 MR. SIEBER: And so their water.

4 CHAIRMAN LEITCH: I had one question on  
5 page 12 of the first inspection report. It talks  
6 about a pipe restraint tower, and it said the jet  
7 impingement barriers were not in scope. I don't  
8 know what I'm talking about there. I don't know  
9 what a pipe restraint tower is or what the jet  
10 impingement barrier is, but it kind of sounds  
11 suspiciously like maybe it ought to be in scope.

12 MR. JULIAN: I think that's a tower  
13 that runs up the side of the auxiliary building.

14 MR. REYNOLDS: The pipe restraint tower  
15 is the area between the containment and the turbine  
16 building structure that's separated from the  
17 feedwater and the mainstream. The pipes run  
18 through it. I'm Bob Reynolds. As far as the  
19 impingement barriers, I'd have to look at that and  
20 see. I don't recall - It's like it's not there or  
21 they're not in scope.

22 CHAIRMAN LEITCH: It says it's not in  
23 scope.

24 MR. REYNOLDS: If it's not in that area  
25 then it's not in scope.

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1 MR. JULIAN: All right. I'm going to  
2 hold on that issue. Let me reread that, so I could  
3 get you an answer to that.

4 CHAIRMAN LEITCH: Yes, it's in your  
5 first inspection report on page 12 it refers to it.

6 MR. JULIAN: I'll look it up and get  
7 you an answer.

8 CHAIRMAN LEITCH: Okay. Thank you.

9 MR. JULIAN: That's all I have. Are  
10 there any other questions?

11 CHAIRMAN LEITCH: Well, I believe we  
12 are right on time for a break. And we are known to  
13 be generous and have a 15 minute break, so be back  
14 at quarter to 3.

15 (Whereupon, the proceedings in the above-entitled  
16 matter went off the record at 2:29:06 p.m. and went  
17 back on the record at 2:43:38 p.m.)

18 CHAIRMAN LEITCH: Let me just say that  
19 right before we took the break, there was a  
20 question about the jet impingement barriers not  
21 being in scope, the piping. So we just wanted to  
22 clarify that for the record.

23 MR. JULIAN: Right. We looked at that  
24 during the break here in the application, and we  
25 either misspoke in the report, or else we're

1 talking about other jet impingement barriers up  
2 there. The pipe clip restraints jet impingement  
3 barriers are clearly stated as being in scope for  
4 that pipe support tower, so that's the answer.

5 CHAIRMAN LEITCH: Good. Thank you.

6 DR. KUO: And, Mr. Leitch, let's see.  
7 Dr. Bonaca had a question on the pressurizer spray  
8 head, was it in scope or not.

9 CHAIRMAN LEITCH: Yes.

10 DR. KUO: I have Sam Miranda here. If  
11 I could, he would --

12 CHAIRMAN LEITCH: Please do. We have a  
13 microphone here. You just need to stand close to  
14 that.

15 MR. MIRANDA: At this point, the  
16 pressurizer spray --

17 DR. KUO: How do you spell your name,  
18 please.

19 MR. MIRANDA: My name is Sam Miranda.  
20 I'm from the Reactor Systems Branch. I reviewed  
21 the question of the pressurizer spray head, as to  
22 whether or not it should be in scope. And at this  
23 point, I believe it does not need to be in scope.  
24 It's pending confirmation from the applicant on  
25 some licensing from operating experience they

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1 supplied, and this goes to an RAI.

2 They indicated at that time that for a  
3 thorough search of international and American  
4 operating experience, that they haven't seen any  
5 instances where the pressurizer spray head would  
6 degrade in operation.

7 MR. SIEBER: One of the interesting  
8 things there, though, is you put the J-tubes in  
9 scope and the steam generator, because you're  
10 worried that pieces would fly off and stick in the  
11 relief valve. And you've got the same situation in  
12 the pressurizer, and I'm not aware from operating  
13 experience of any J-tube that has failed and  
14 generated pieces. They usually fail and they get a  
15 hole in the bottom of the header. So, you know,  
16 the reasoning isn't consistent.

17 CHAIRMAN LEITCH: Even with that, I  
18 don't know that operating experience is  
19 particularly a criteria for eliminating equipment  
20 from scope, is it?

21 MR. MIRANDA: I wouldn't eliminate it  
22 by itself on the basis of operating experience.  
23 The difference between the spray head and the  
24 J-tubes, in my mind, is that we have seen instances  
25 of degradation in the feed rings of steam

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1 generators.

2 MR. SIEBER: That's right.

3 MR. MIRANDA: And that's a precursor --

4 MR. SIEBER: It's not in the J-tube  
5 itself, it's in the ring.

6 MR. MIRANDA: It's in the ring, and in  
7 the valves.

8 MR. SIEBER: Because of the turbulence.

9 MR. MIRANDA: Yeah, it's flow-  
10 accelerated corrosion. There's also been flow-  
11 accelerated corrosion in feed lines in several of  
12 the thermal units.

13 DR. BONACA: But operating experience  
14 -- I mean, we have 30 years of operating  
15 experience, and these plants that go into 60 years  
16 old, and I'm trying to understand. There are ways  
17 to project, you know, expectation on equipment.  
18 And what is it that gives comfort to this case that  
19 this experience is still going to be valid 50 -- 30  
20 years from now

21 MR. MIRANDA: That's a guess. And as  
22 far as -- what I was looking for, what I'm still  
23 looking for is a confirmation from the applicant, a  
24 statement that says something like there's been no  
25 such corrosion, no indications that something might

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1 happen. Whereas we have seen things like that on  
2 the feed rings, I haven't gotten that kind of  
3 information about the spray head. I was looking  
4 for the precursor to this part.

5 DR. BONACA: I guess what troubles me  
6 has been the changing story from plant to plant.  
7 We've seen, I think in general this spray head is  
8 out of scope. The last plant we saw it was out of  
9 scope because the issue was that, yeah, they could  
10 fail, but they don't need it to get down to cold  
11 shutdown because even if the spray head is not in  
12 service, they can still, you know, depressurize and  
13 come down slowly but surely down there. That was  
14 one of the reasons why it's not in scope. Now we  
15 find a new reason why it's not in scope.

16 MR. BARTON: Is this thing too hard to  
17 look at or what?

18 DR. BONACA: It must be. I mean, there  
19 has to be something -- I think, if I were a spray  
20 head, I would feel so bad. I mean because --

21 MR BARTON: You're ignored, right.

22 MR.ROSEN: Can't anybody detect this  
23 other part?

24 MR. SIEBER: Nobody even wants to look  
25 at you.

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1 MR. ROSEN: That's right.

2 MR. MIRANDA: I would also consider as  
3 to why the spray head would not be available. If  
4 there was such -- if there were a failure mechanism  
5 that you could conceive of that would cause no  
6 spray to be available, then I would be concerned.

7 MR. SIEBER: But that's not the case.

8 MR. MIRANDA: That's not the case.

9 MR. SIEBER: On the other hand, if the  
10 head is missing and you're putting a stream of  
11 water and no spray, you don't get much  
12 depressurization at that point, so the failure  
13 could be --

14 MR. STEWART: It's not in the fire code.  
15 We don't have to have a pressurizer spray to  
16 depressurize the plant. It is one method. It's  
17 not the only method.

18 MR. SIEBER: That's true.

19 DR. BONACA: It is one method. It is  
20 the primary method. It's what you're advising them  
21 to use.

22 MR. SIEBER: It's the method that  
23 worked.

24 DR. BONACA: It's the method that  
25 works, and it's the method the operator used to

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1 use. I mean, that's the important point, too.

2 MR. BARTON: But if it don't work, it'll  
3 confuse him because he's used to using it.

4 DR. BONACA: Okay. Now I understand  
5 where the commitment is. You're expecting  
6 confirmation of operating experience that shows  
7 that degradation has not occurred.

8 MR. MIRANDA: Yes.

9 CHAIRMAN LEITCH: Okay. S.K.

10 MR. MITRA: Again, I am S.K. Mitra,  
11 Project Manager for Robinson Nuclear Plant. I'll  
12 start with Section 3, which is an aging management  
13 review. And GALL divides the system into six  
14 distinguished groups, the reactor system;  
15 engineering safety feature system; auxiliary  
16 system; steam and power conversion system;  
17 containment, structure and component support; and  
18 electrical and instrumentation control.  
19 On the aging management review, the aging  
20 management program is the most important program in  
21 the aging management review, so we'll address it  
22 right on top. We have 12 common aging management  
23 programs. Common means it goes across the  
24 different systems and structures, like boric acid  
25 program, the chemistry program, and all those. And

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1 26 system and structural group-specific AMPs, which  
2 is just in one system, the reactor system or  
3 auxiliary system, specifically for that.

4 Out of that we have, consistent with GALL, we have  
5 13 verbatim consistent with GALL. We have 18 of  
6 them, some kind of deviation was taken. There's  
7 seven non-GALL programs, and --

8 CHAIRMAN LEITCH: S.K., I had a  
9 question right on that point. In the applicant's  
10 table, the sections that have a suffix of .1, they  
11 say that that means that it's evaluated in GALL.  
12 And .2 means different from GALL or not evaluated  
13 in GALL. And the SER on page 3-2 says that .1  
14 means evaluated in GALL, and those that were not  
15 evaluated in GALL, but can be managed using GALL or  
16 an associated AMP. So I guess I'm confused. There  
17 seems to be a difference between the licensee's  
18 description and the SER description as to where  
19 those programs fit that are the ones that you  
20 describe as consistent with GALL, but with some  
21 deviation. Are they under the .1 section, or the  
22 .2 section?

23 MR. MITRA: These are the -- where they  
24 mention it in SER, that paragraph that's talking  
25 about aging management review tables that 3.X.1 of

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1 the tables, which is either consistent with GALL or  
2 same material environment where aging affects the  
3 component, that's in the 3.X.1 table. And the  
4 3.X.2 table is that which are not -- it's non-GALL  
5 components. But that's what I think it was -- it's  
6 nothing to do with aging management programs. The  
7 aging management programs are not described in any  
8 of the tables. This is in Appendix B.

9 CHAIRMAN LEITCH: Yes. I should say  
10 aging management review, not aging management  
11 program. I guess, I don't know that it makes a  
12 great deal of difference, but I would just say that  
13 it appears as though the applicant's tables under,  
14 say, 3.X.1 and 3.X.2, their definition is different  
15 than the definition that's used in the SER on page  
16 3-2.

17 MR. MITRA: Okay. I will take a look  
18 at that because off-hand I don't remember the  
19 difference.

20 CHAIRMAN LEITCH: Sure. Okay.

21 MR. MITRA: I'll address that.

22 CHAIRMAN LEITCH: It's a fine point,  
23 but just a point of confusion. There's no problem  
24 with those that are consistent with GALL, or those  
25 that are not in GALL. They're clear enough, but

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1 that middle category, it's a question of which  
2 table it's in. Is it .1 or .2?

3 MR. MITRA: Some of that -- the  
4 division that needs further clarification, that is  
5 in Table 1. And all of them that are not in GALL  
6 are in Table 2. That's my understanding. Am I  
7 right, Roger?

8 MR. STEWART: On the aging management  
9 programs, the Table 3.X.1, 3.X.2 has no bearing in  
10 terms of consistent with GALL here. On 3.X.1 and  
11 3.X.2 tables, there was a specific RAI, but the  
12 Staff asked us to clarify how we determined whether  
13 a component or item was in Table 1 versus Table 2.  
14 And S.K. is correct in terms of what we basically  
15 responded there, that it's the same as GALL. It's  
16 in Table 3.X.1.  
17 Additionally, if we had something that might be a  
18 different component, provided that component has  
19 the same material, same environment, same aging  
20 effects and we rely on the same program as GALL, we  
21 put it in 3.X.1, even though it might be a  
22 component that they didn't list in GALL.

23 CHAIRMAN LEITCH: Okay.

24 MR. STEWART: And then 3.X.2 was the  
25 stuff that's different with GALL, so you will find

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1 some stuff in 3.X.1. It might be a different  
2 component or something that GALL didn't explicitly  
3 mention it, but we looked at it. As long as it's  
4 the same material, same environment, same aging  
5 effect, and using the same program, we put it in  
6 3.X.1.

7 CHAIRMAN LEITCH: Okay. That helps.

8 MR. SIEBER: But that arises because  
9 you didn't do it on a system basis. You did it on  
10 plant basis. Correct?

11 MR. STEWART: We followed the same  
12 groupings in GALL in terms of reactor systems,  
13 ECCS. If we went through and broke down our stuff,  
14 we might find we had a different component  
15 nomenclature, say, than GALL, and that's where we  
16 would come up and identify --

17 MR. SIEBER: You had 19 auxiliary  
18 systems in the plant, but you didn't have 19  
19 references in your table on a system-by-system  
20 basis.

21 MR. STEWART: Correct.

22 DR. KUO: This is the one thing  
23 actually that we will consider when we revise the  
24 GALL documents. But, you know, we heard a lot of  
25 comments on this area. You know, I've got a

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1 component which has the same material, in the same  
2 environment --

3 MR. SIEBER: And why do I have to have  
4 two different programs.

5 DR. KUO: So this is something that we  
6 need to consider when we update the GALL.

7 MR. SIEBER: Yes, I think part of that  
8 is the way you think about them. Because, for  
9 example, I think in terms of systems and commodity  
10 lists, and other people think of it another way,  
11 but we all should be versatile enough to be able to  
12 accept the other person's point.

13 DR. KUO: Right.

14 MR. SIEBER: And I'm working on that.

15 MR. MITRA: Okay. And the last bullet  
16 said that we have AMPs that are addressed in the  
17 C.0.3 section, and there are other AMPs which are  
18 the other 26 AMPs which are good specific AMPs  
19 there with each of the systems and structures.  
20 Again, the total number of AMPs was 38, and the  
21 number of AMPs that are originally came with the  
22 license renewal application was 34. Four AMPs were  
23 added, and these are the four AMPs we listed:  
24 radiation monitoring instrumentation non-EQ cable,  
25 neutron flux instrumentation cable, fuse holders,

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1 and bus ducts. We do that all in the electrical.  
2 Some of the RAIs, some in the SBO.  
3 We have conducted an audit, and this is an audit  
4 done by the NRR Staff, and specifically from  
5 License Renewal group, five project managers with  
6 various experience went down and audited the AMPs  
7 that claimed to be consistent with GALL. All of  
8 them have been audited, and we compared the  
9 attributes, the ten attributes of the GALL with the  
10 ten applicant's attributes to see if they're really  
11 consistent. And we have found a couple of places  
12 that might not look like it's consistent with the  
13 GALL attribute. We talked to the plant staff - I  
14 mean the applicant's staff and some of the  
15 documents were revised as we were doing our audit.  
16 And now we found all of them are consistent,  
17 excepting one, the non-EQ insulated cable and  
18 connections program. That program lacked enough  
19 detail for us to make a conclusion whether it's  
20 consistent with GALL, so we asked the applicant to  
21 revise the program to at least have -- you know,  
22 compare them with the GALL and have all ten  
23 attributes. They did devise a program, sent it to  
24 our technical staff in NRR, and they looked at it,  
25 and they found it acceptable.

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1 DR. KUO: This audit has been done on a  
2 100 percent basis, so they audited all the programs  
3 that they have.

4 MR. MITRA: Section 3.1 had reactor  
5 systems, and in reactor systems we have the  
6 subsystems: the reactor coolant system piping,  
7 reactor coolant pumps, pressurizer, reactor vessel,  
8 reactor vessel internals, steam generators. We had  
9 nine confirmatory items on that, no open items, and  
10 we are waiting for the Staff to look at the  
11 response to the confirmatory items to accept or so  
12 they can resolve.

13 CHAIRMAN LEITCH: I'm sorry. I missed  
14 one two slides back, I guess --

15 MR. MITRA: Okay.

16 CHAIRMAN LEITCH: -- where you had the  
17 neutron flux instrumentation cable. There was an  
18 open item there that -- that's it. I guess the  
19 Staff was concerned about the ten-year frequency of  
20 testing. Now how has that issue been resolved? Is  
21 it still ten years?

22 MR. MITRA: It's ten years, and the  
23 first one would be done before the end of the  
24 extended period, and after that, each ten years.

25 CHAIRMAN LEITCH: So the concern about

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1 the ten years being too infrequent went away?

2 DR. KUO: Amar, can you address that?

3 MR. PAL: Yes. It's not a concern  
4 anymore.

5 CHAIRMAN LEITCH: Okay. Was some of  
6 the basis for that that failure had not been  
7 experienced?

8 MR. PAL: Operating experience and --

9 MR. MITRA: Come forward, please. And,  
10 again, identify your name.

11 MR. PAL: Yes. Operating experience  
12 shows that they didn't have any failure. There was  
13 one bulletin published over that, and that  
14 essentially changed some of the cables part of the  
15 bulletin. And the other part, I believe neutron  
16 flux monitoring, they did not change. It was not  
17 required to change. And that cable is the same  
18 cable as the other cables, and that was in  
19 existence for over 30 years, and no failure, and no  
20 problem occurred. So based on that, we believe  
21 that aging is a slow process for cable and  
22 consistent with the other cable aging management  
23 programs.

24 CHAIRMAN LEITCH: Okay. So it's still  
25 in scope, still in the AMP for ten years?

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1 MR. PAL: Yes.

2 CHAIRMAN LEITCH: Okay.

3 MR. MITRA: Any other question on this?

4 CHAIRMAN LEITCH: No. I'm sorry to  
5 take you back. You were a couple ahead of this.

6 MR. MITRA: That's okay. We went  
7 through that. And I thought we should specify the  
8 Alloy 600 Program. NRC Order EA-009-03 requires  
9 augmented inspections for Alloy 600 nozzles to  
10 upper reactor vessel head during the current  
11 licensing basis. And the Bulletin 2003-03  
12 addresses cracking in the Alloy 600 penetration  
13 nozzles adjoined to the lower vessel head, and that  
14 is being addressed by the applicant. And the  
15 formal -- I think we didn't get the formal response  
16 to that. They will -- I think they will follow  
17 what is the bulletin has said. And as other Alloy  
18 600 and Alloy 82/182 issues arise, staff will  
19 address them within the current operating term.  
20 And as Jim Medoff said, there is a commitment by  
21 the applicant to submit the Alloy 600 program to  
22 the Staff for review and approval by July 31, 2009,  
23 which is a year before the operating period, and  
24 the commitment would permit the Staff to review the  
25 AMP for acceptability against NRC requirements, if

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1 any future requirement that would be, and as well  
2 as those inspection activities that Jim had  
3 mentioned on EPRI-MRP Class 1 Alloy 600-based  
4 metals, and on 82/182 weld materials.

5 MR. ROSEN: And this was the year  
6 before the current licensing term expires that was  
7 mentioned earlier.

8 MR. MITRA: Right.

9 DR. BONACA: The Alloy 600 would  
10 include other commitments that they try to have  
11 with Alloy 690? There would be some --

12 MR. SIEBER: I don't think they have  
13 any.

14 MR. MITRA: Jim is raising his hand.  
15 Come on up.

16 MR. MEDOFF: This is Jim Medoff with  
17 Materials and Chemical Engineering Branch. I've  
18 reviewed the orders. I think replacing the head  
19 does not get you out of examinations. It just --  
20 because it's supposed to be an approved material,  
21 it just defers it out a little bit, so just the  
22 fact that you've replaced the head doesn't mean you  
23 don't have to follow the orders.

24 MS. COFFIN: You might have to change the title of  
25 the program.

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1 MR. MEDOFF: Right.

2 DR. BONACA: I wanted to make sure the  
3 program wasn't so restrictive as just talking in  
4 this example. I mean, they'll have interim  
5 material in that time.

6 MR. SIEBER: Let me, since we're  
7 talking about Alloy 600, a lot of plants in this  
8 class of plants have a requirement in the tech  
9 specs for augmented inspection of the reactor  
10 vessel safe end. Is this one of those plants where  
11 safe end is an augmented inspection?

12 MR. BAUCOM: This is Chuck Baucom with  
13 the licensee, the applicant. We do not have such a  
14 requirement in our technical specifications. We do  
15 look at our dissimilar metal welds in accordance  
16 with various Section 11 programs.

17 MR. SIEBER: That's right. But usually  
18 the augmented inspection is more frequent and  
19 sometimes requires volumetrics; whereas the  
20 standard inspection is a VT, a visual.

21 MR. BAUCOM: I'm not aware that we're  
22 considering augmented exams at this time.

23 MR. SIEBER: You ought to think about  
24 that a little bit. Yes, sir.

25 MR. MEDOFF: This is Jim Medoff again.

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1 For the Summer issue, since the MRP has not  
2 finalized its activities on the safe end nozzle  
3 welds, the commitment by the applicant should pick  
4 that up.

5 MR. SIEBER: Okay. Well, that's one  
6 example, but the issue of safe ends has been around  
7 since the 1970s.

8 MR. MEDOFF: Right. We haven't  
9 forgotten about the Summer issue. It's still  
10 something that we need to talk to the MRP about  
11 addressing.

12 MR. SIEBER: Okay. I'll sleep better  
13 tonight. (Laughter.)

14 MR. MITRA: In Section 3.2, we go to  
15 engineered safety features (ESF) systems, and that  
16 covers residual heat removal, safety injection,  
17 containment spray, containment air recirculation  
18 cooling, containment isolation. We don't have any  
19 open or confirmatory items on that.

20 And 3.3 is the auxiliary system. We have 19  
21 auxiliary subsystems described in Section 3.3, and  
22 we have three confirmatory items, no open items.

23 CHAIRMAN LEITCH: Does one of those  
24 confirmatory items have to do with radioactive  
25 equipment drains, whether they're in scope or not

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1 in scope?

2 MR. MITRA: Yes.

3 CHAIRMAN LEITCH: What was the  
4 resolution of that?

5 MR. MITRA: That they are not in scope,  
6 and we have a confirmatory item, but the applicant  
7 has explained, and I will have Renee Li of Staff  
8 explain why it's not in scope.

9 MS. LI: The system is in scope. Okay. It is a  
10 stainless steel piping exposed to raw water, and  
11 the applicant has identified loss of material due  
12 to crevice pitting and leak, but the applicant  
13 states that those aging effects on mechanisms would  
14 not impact the system function. Okay. And so we  
15 ask RAI, request applicant to elaborate why they  
16 make that conclusion. And based on their response,  
17 I think first of all, because it is the drain  
18 system, so normally it is dry. Okay. So they  
19 expect the corrosion rate due to the drain would be  
20 very insignificant. But also, the concern say if  
21 degradation would occur, then the blockage -- okay.  
22 The blockage is due to its own corrosion but, you  
23 know, they already say the corrosion rate would be  
24 very insignificant, and blockage due to external  
25 source, because they have strainer that would

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1 prevent, you know, debris getting into it. And  
2 also, actually, this system is under -- I think  
3 Robinson has a leakage, refuse leakage program  
4 which normally that including operator wrong,  
5 assessment, walkdown and all that. And, moreover,  
6 I think I did ask them how about looking into the  
7 interaction between a partial failure of this  
8 system to the nearby safety-related system, and  
9 their answer is there is no special interaction.  
10 So based on all of this, I accept their response  
11 that no -- degradation of the system would not  
12 impact its intended function.

13 CHAIRMAN LEITCH: Okay. I guess I  
14 understand why there's not a degradation that would  
15 impact its function. I guess my question was why  
16 did we think it was in scope in the first place?  
17 What criteria did it --

18 MS. LI: Because it is still a pressure boundary, I  
19 think.

20 MR. STEWART: Containment penetrations.

21 MS. LI: Right. It is a pressure boundary.

22 CHAIRMAN LEITCH: I'm picturing --  
23 maybe I don't picture what this system is exactly.  
24 I'm picturing, like, an equipment bed plate drain  
25 kind of thing. Is that what we're talking about

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1 here?

2 MR. STEWART: This is Roger Stewart.  
3 That's one piece of it. Part of it -- originally  
4 it was in scope because you had containment  
5 penetration, so anything that's a containment  
6 penetration is in scope, so we had some of that.

7 CHAIRMAN LEITCH: Okay.

8 MR. STEWART: In addition, we put it in  
9 scope because when we looked at some of our  
10 flooding analysis, or particularly with fire  
11 protection, some of the flooding analysis, we rely  
12 on these drains to carry the water away and not  
13 cover up some of the switchgear stuff, so that  
14 brought portions in scope that you're thinking  
15 about in terms of the floor drains and grates and  
16 stuff.

17 CHAIRMAN LEITCH: Right. Okay. Good.  
18 So understanding why it's in scope, then I  
19 understand, you know, why it doesn't have a  
20 credible or a problematic aging mechanism.

21 MS. LI: Okay.

22 CHAIRMAN LEITCH: Yes. Thank you.

23 MR. MITRA: I lost it.

24 MR. ROSEN: Any questions on the material  
25 he's covered? (Laughter.)

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1 MR. MITRA: Here we go. Section 3.4,  
2 we covered steam and power conversion systems. And  
3 there's 12 steam and power conversion systems. We  
4 don't have any open items, any confirmatory items  
5 on that.  
6 3.5 is the containment structures, and component  
7 supports. That includes containment structure and  
8 13 other structures. And we have one confirmatory  
9 item, no open items. And we'll show that  
10 confirmatory item. I think you are interested in  
11 that.  
12 Inaccessible concrete. That's what you have asked,  
13 and we have our experts in the back. The below-  
14 grade soil or water aggressiveness, pH is slightly  
15 lower than the threshold of 5.5. I was asked what  
16 slightly means. It's about 5.46, so just about  
17 there. The prime indicator is inspection of intake  
18 structure, dam spillway, excavated reactor  
19 auxiliary building foundation and manholes. And  
20 periodic testing of ground water to monitor any  
21 change. And it will be done every year, once a  
22 year, testing of ground water. And commitment was  
23 given to resolve below- grade degradation issue  
24 through enhancement of the structural monitoring  
25 program and IWL.

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1 DR. BONACA: Would you describe these  
2 enhancements of the structural monitoring program?

3 MR. MITRA: As I said, that they have  
4 committed to do an inspection of the dam spillway  
5 and intake structure every ten years. And any time  
6 they have excavated any of the structure, they will  
7 do the inspection. They will look for the  
8 degradation of concrete, and that's how they will  
9 enhance that. And they will be training in it to  
10 see how the degradation progresses.

11 SPEAKER: What's the IWL here? Is that the ASME  
12 code section?

13 MR. SIEBER: Yes, Section 11.

14 SPEAKER: "Through enhancements of IWL." What do you  
15 mean by that?

16 DR. KUO: Hans Asher is raising his  
17 hand. I think he's waiting to answer the question.

18 MR. ASHER: It's enhancement of the  
19 structure monitor program, and IWL. IWL is not  
20 being enhanced.

21 MR. ROSEN: I would think you would  
22 have difficulty doing that.

23 DR. BONACA: And for inaccessible  
24 concrete, you do have opportunistic inspections.

25 MR. MITRA: I didn't get the question.

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1 DR. BONACA: For inaccessible concrete.

2 MR. MITRA: Yes.

3 DR. BONACA: You do have opportunistic  
4 inspections.

5 MR. MITRA: Yes.

6 DR. BONACA: So the same thing.

7 MR. ROSEN: Now that you cleared up  
8 whether you're going to enhance IWL or not, what  
9 does the reference to IWL there mean?

10 MR. ASHER: Let me explain. I'm Hans  
11 Asher from the Division of Engineering. Basically,  
12 IWL program by itself does not include the  
13 inspection of the below-grade portion of the  
14 containment structure. Now what the applicant did  
15 was that for containment, they announced the IWL  
16 program to include that inspection, if needed, in  
17 that program, in the early part of the  
18 announcement. For other structures, they included  
19 the below-grade structural degradation monitoring  
20 under the structural monitoring program, so that's  
21 why both things appear over here.

22 MR. ROSEN: So the applicant has  
23 committed to exceed the requirements of IWL.

24 MR. ASHER: That's correct.

25 MR. ROSEN: That's what that reference

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1 is about.

2 MR. ASHER: That's what I would  
3 understand, yes.

4 MR. ROSEN: Okay.

5 MR. MITRA: Any other questions?

6 CHAIRMAN LEITCH: I suppose the dam was  
7 filled in conjunction with Unit 1, so it's older  
8 than Unit 2?

9 MR. MITRA: The dam was older than the  
10 units.

11 CHAIRMAN LEITCH: So we would then  
12 conclude that the dam might be -- the dam spillway  
13 might be a leading indicator. Is that why we're  
14 accepting that?

15 MR. MITRA: Yes.

16 MR. REYNOLDS: I just wanted to say,  
17 you mentioned the pH - Bob Reynolds, Progress  
18 Energy. He mentioned that the pH was 5.46. That's  
19 for the lake water. That's average for the lake  
20 water, and the actual groundwater is more like a  
21 little bit above 4, about 4.4, 4.35, in that range,  
22 so that was the main reason --

23 MR. ROSEN: So it's much more  
24 aggressive than the lake water.

25 MR. REYNOLDS: Yes.

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1 MR. MITRA: And Bob had some number for  
2 sulfates and chloride. Do you want to give that?

3 MR. REYNOLDS: Yeah, I don't have them  
4 handy with me, but they're very minimal. It's,  
5 like, less than 20 or 30 parts per million I  
6 believe it was. It's very, very minimal for  
7 sulfates and chlorides.

8 DR. BONACA: And phosphate also is  
9 minimal?

10 MR. REYNOLDS: We actually have some  
11 test results from years ago, and it's .05 parts per  
12 million.

13 MR. MITRA: Any other questions?  
14 Section 3.6, Electrical and I&C. And we have three  
15 component commodity groups. This is a little  
16 different. The electricals, they have -- the aging  
17 management review was done on a commodity basis, so  
18 they have three of the commodity groups which are  
19 subject to aging management review, bus ducts,  
20 insulated cables and connections, and  
21 electrical/I&C penetration assemblies. We have  
22 three confirmatory items. There're no open items.  
23 And there are four AMPs added to following  
24 components: radiation monitoring instrumentation  
25 non-EQ cable, neutron flux instrumentation cable,

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1 fuse holders, and bus ducts. These are not  
2 ordinarily submitted with the license renewal  
3 application. These are submitted after the RAI  
4 process has gone through, and some of them as a  
5 result of station blackout.

6 Now go to Section 4, TLAAs, Time-Limited Aging  
7 Analyses. And this is how it's organized in GALL  
8 and organized in application: the identification of  
9 TLAAs, reactor vessel neutron embrittlement, metal  
10 fatigue, environmental qualification, concrete  
11 containment tendon prestress, and other TLAAs that  
12 include thermal aging embrittlement, LBB or leak-  
13 before-break analysis; foundation pile corrosion;  
14 elimination of containment penetration coolers; and  
15 aging of Boraflex. And we'll go through each of  
16 them as we progress.

17 The reactor vessel neutron embrittlement. The  
18 tables show that pressurized thermal shock is below  
19 their limit. The limit is 300 for circumferential  
20 welds, and RNP have 275 degree Fahrenheit. And for  
21 plates, forgings, and axial welds, the limit is 270  
22 degree Fahrenheit, and the RNP is 235, so it's well  
23 within the limit.

24 Reactor Vessel Upper Shelf Energy (USE), the table  
25 shows that it's minimum foot-pounds is 50 for

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1 welds/forging. The RNP foot-pounds are 56. For  
2 plate materials, the equivalent margin analysis,  
3 the limit is 42. RNP has 45. Nozzle forging, the  
4 limit is 50 foot-pounds, RNP is 53, and nozzle  
5 welds minimal limit is 50, and RNP of 52.

6 And by the way, for both of these Staff performed  
7 their independent calculation. They looked through  
8 and made their calculation independent of the  
9 application.

10 MR. ROSEN: Let me congratulate you for  
11 making this easy for us.

12 MR. MITRA: Thank you.

13 MR. ROSEN: Because this slide and the  
14 previous one will save us about an hour's worth of  
15 discussion.

16 DR. KUO: We learned a lesson from last  
17 year. (Laughter.)

18 MR. ROSEN: Lesson learned.

19 CHAIRMAN LEITCH: At the risk of,  
20 perhaps, adding to the discussion -- it was so good  
21 -- but I guess what you're saying is the nominal  
22 limit in that plate materials would have been 50  
23 foot-pounds also?

24 MR. MITRA: Yes.

25 CHAIRMAN LEITCH: But you used an

1 alternate method, I guess, this equivalent margin  
2 analysis, and I'm not sure --

3 MR. MITRA: Jim Medoff is raising his  
4 hand. Come on.

5 MR. ROSEN: That's the disadvantage of  
6 making it clear.

7 MR. MITRA: Yeah. (Laughter.)

8 MR. MEDOFF: The Upper Shelf Energy for  
9 reactor vessel plate materials is covered by 10 CFR  
10 Part 50, Appendix G. The rule requires that we  
11 have 75 foot-pounds for your materials initially  
12 without any irradiation, and then they have to  
13 maintain their values above 50 foot-pounds through  
14 the end of the life of the plant. If you don't  
15 meet that, what the rule requires you to do is use  
16 a refined analysis regarding equivalent margin  
17 analysis. And Robinson is an early vintage plant,  
18 Westinghouse plant, and for those early vintage  
19 Westinghouse designs, Westinghouse did a generic  
20 equivalent margins analysis. So what I did was I  
21 went to the safety evaluation, got the value for  
22 the plate materials in this, and then confirmed  
23 that their Upper Shelf for those materials would be  
24 above the approval --

25 MR. ROSEN: What safety evaluation are

1 you talking about, the Westinghouse?

2 MR. MEDOFF: No. It was our safety  
3 evaluation on the WCAP.

4 MR. ROSEN: Okay.

5 MR. MEDOFF: So I can get that for you  
6 if you want.

7 MS. COFFIN: Essentially, it's just a refined  
8 fracture mechanics evaluation as opposed to basing  
9 it on the Charpy tes.

10 MR. MITRA: Can you identify yourself,  
11 because he is going crazy.

12 MR. ROSEN: Tell us who you are.

13 MS. COFFIN: Oh, Stephanie Coffin. Sorry.

14 CHAIRMAN LEITCH: On a point close to  
15 that, there was a discussion about Capsule U, and  
16 it wasn't clear to me. It looked as though the  
17 record perhaps on Capsule U is unclear.

18 MR. MEDOFF: Well, that's not a TLAA.  
19 That's the reactor vessel surveillance aging  
20 management program, which goes into the PTS  
21 assessment, and the surveillance data goes into  
22 the PTS assessments and the upper shelf energy  
23 assessment, so there's an interrelation. But the  
24 question was actually under the management program,  
25 because we can project our neutron fluences for the

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1 capsule based on leak factors, where they stand  
2 inside the reactor. And the licensee had actually  
3 moved that capsule, so we had some questions on how  
4 the leak factors for the capsules had changed. But  
5 they addressed all our questions on that.

6 CHAIRMAN LEITCH: Okay. Good. Thank  
7 you.

8 MR. MITRA: Section 4.3, Metal Fatigue.  
9 And auxiliary feedwater line fatigue. The 4-inch  
10 by 16-inch AFW and main feedwater connection, maybe  
11 they're fatigue critical. And it might be this  
12 Cumulative Usage Factor (CUF) equal to 1 at  
13 approximately about 50 years of operation, and that  
14 is based on projections of actual transients to  
15 date. And the applicant committed that this  
16 transient will be tracked by fatigue management  
17 program. The components will be either re-analyzed  
18 or replaced prior to exceeding cycles of transients  
19 tracked by the fatigue monitoring program. And  
20 they committed to revise the UFSAR supplement in  
21 Confirmatory Item 4.3.2-1.  
22 Environmentally-Assisted Fatigue is projected that  
23 that will be Environmentally-Assisted Fatigue  
24 adjusted CUF more than 1 for pressurizer surge line  
25 during extended period of operation. And applicant

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1 committed to do fatigue of surge line. It will be  
2 managed using one or more of the following options.  
3 They will refine the fatigue analysis to lower the  
4 CUF to less than one. They will repair the  
5 affected location. They may replace the affected  
6 location, or manage the fatigue by using NRC-  
7 approved augmented ISI program. And the applicant  
8 is to provide the details of this ISI program for  
9 NRC Staff to review and approve prior to the period  
10 of extended operation, if Option 4 is selected.  
11 And, again, revision of UFSAR supplement will be  
12 addressed in confirmatory item. Any questions?

13 CHAIRMAN LEITCH: Could you go back to  
14 that aux feedwater line?

15 MR. MITRA: Yes.

16 CHAIRMAN LEITCH: I guess, the way I  
17 read this thing, it appeared as though they had  
18 taken a shot at the number of cycles. And then  
19 they found out in reviewing this that, based on  
20 that number of cycles, this was not qualified even  
21 for 40 years. And then they went back and they  
22 came up with a cumulative usage factor of .99. And  
23 I suspect being a number like .99, the way they got  
24 that was to assume a number of cycles that gave  
25 them .99. That's for 40 years. Now we're saying

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1 it's going to be okay for 60 years based on some  
2 other number of cycles. Is that number of cycles  
3 reasonable?

4 MR. MITRA: Again, Ken Chang, the  
5 reviewer for that can answer that.

6 DR. CHANG: My name is Ken Chang.  
7 Right now I'm in the License Renewal Branch, but  
8 six months ago I was in EMEB doing the TLAA review  
9 and a little bit of SER. This auxiliary system,  
10 auxiliary feedwater connection, for the 16 inch,  
11 there are two kind of auxiliary feedwater pump.  
12 There's steam-driven and air-driven. There's six  
13 connections. All of those are two types. One type  
14 was replaced, and the other type was trying to  
15 analyze a way out. When they analyzed the way up,  
16 they found out that there's a mistake, one mistake  
17 involving the calculation, so they decide to do a  
18 more refined calculation.  
19 The first five was difficult, and then refined  
20 calculation qualified the 40 years, no problem.  
21 But we need 60 years. So based on the latest  
22 operating experience, extrapolate the transients  
23 which happen in the last few years for the future,  
24 between now and the renewal license, the extended  
25 operation period starts. And they can

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1 approximately get 50 years at that time, a usage  
2 factor approaching one. So, therefore, based on  
3 the current knowledge of transient and  
4 extrapolation, it's only up to 50 years usage  
5 factor. We will get to the limit. However, the  
6 operating is getting better and better. The  
7 transient counting and the transient recording is  
8 also getting better.

9 The trend in the past is, the last few years the  
10 usage factor increase very slowly. And going by  
11 that trend, there may be some hope that by the time  
12 we extend operation into the end of current period,  
13 the usage factor is not that high, and you  
14 extrapolate this on that data that it's going to be  
15 better, so there is hope. Refined calculation may  
16 get you over to be less than one. And that would  
17 be acceptable; however, we cannot count on that.  
18 So the applicant agreed, for the second option, if  
19 they cannot show less than one before the extended  
20 period starts, they replace it. So to me, this is  
21 acceptable.

22 MR. SIEBER: And that's not a big deal  
23 either.

24 DR. CHANG: No, not a big deal. This  
25 is not Class 1 type.

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1 MR. SIEBER: Right.

2 MR. ROSEN: So it's just a T; right? A  
3 4-inch by 16-inch T?

4 DR. CHANG: Branch connection. Key  
5 would be very difficult.

6 MR. SIEBER: It's a reducer.

7 MR. ROSEN: It's a reducer.

8 DR. CHANG: Yes. We call it a reducing  
9 T or branch connection. Normally, the ratio is --  
10 you know, the run to the branch exceeding 3 or 4 is  
11 a branch connection. Otherwise, it's T.

12 CHAIRMAN LEITCH: Is there a commitment  
13 then to replace if it goes over one? I mean, I  
14 thought maybe if it was a touch over one that --

15 DR. CHANG: At the end of 40 years, if  
16 they cannot demonstrate with analytical methods  
17 that the usage factor at the end of 60 years will  
18 be less than one, they replace at that point.

19 CHAIRMAN LEITCH: Okay.

20 DR. CHANG: So there's no risk involved  
21 here, if we trust the analytical tool.

22 CHAIRMAN LEITCH: Yes. Okay. Thank  
23 you. Good explanation.

24 MR. MITRA: Section 4.4, addresses  
25 environmental qualification (EQ) and applicant EQ

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1 program consistent with GALL. Staff concluded the  
2 EQ program will continue to manage equipment in  
3 accordance with 10 CFR 50.49, and meets 10 CFR  
4 54.21(C) (1) (iii). And we put GSI-168,  
5 "Environmental Qualification for Low-Voltage  
6 Instrumentation and Control Cable." We addressed  
7 that on Fort Calhoun, that Staff have issued RIS  
8 2003-09 on May 2, 2003. And the issue is closed,  
9 and no actions are required on license renewal  
10 basis.

11 Now Concrete Containment Tendon Loss of Prestress.  
12 It's addressed in Section 4.5, and the prestress  
13 losses are estimated for 60 years, and the Staff  
14 finds the estimation is reasonable. The Staff's  
15 concerns are with the grouted tendon, which as we  
16 already discussed, is one of a kind. Tendon  
17 monitoring is not possible. But the applicant  
18 agreed to perform two tests similar to the  
19 Structural Integrity Test during the period of  
20 extended operation at Design Basis Accident  
21 Pressure. And the measurement and observation  
22 verified the behavior of the containment. Any  
23 question on that?

24 MR. ROSEN: What do you mean by two  
25 tests?

1 MR. MITRA: Similar tests like  
2 Structural Integrity Testing.

3 MR. ROSEN: But why two tests? Why --

4 MR. CLEMENTS: One now, and one at a  
5 later period of time.

6 MR. ROSEN: One now, you mean --

7 MR. CLEMENTS: Yes. Towards the end of  
8 the existing license, and one ten years into the  
9 license.

10 MR. ROSEN: Oh, I see.

11 MR. CLEMENTS: What we do is it's the  
12 same period of time as the pressurizer containment  
13 mini test that we'll do this test.

14 MR. STEWART: We're alternating the  
15 required Appendix J Integrated Leak Break Test to  
16 take these additional measurements and monitor the  
17 behavior for the tendons to see if --

18 MR. ROSEN: One before 40 years, and  
19 the other one around 50.

20 MR. STEWART: No, sir. These were both,  
21 the commitments, both in the period of extended  
22 operation.

23 MR. ROSEN: Both in that period of  
24 extended operation.

25 MR. STEWART: Yes, sir.

1 MR. ROSEN: Well, the first one is early  
2 in the period of extended operation.

3 MR. STEWART: Yes, sir.

4 MR. ROSEN: And the other one is midway?

5 MR. STEWART: Yes.

6 MR. ROSEN: That sounds appropriate.

7 MR. MITRA: Any other questions? Other  
8 TLAAs. We have thermal aging embrittlement and  
9 leak-before-break analysis. The applicant evaluated  
10 the validity of leak-before-break analysis of the  
11 main loop piping for the period of extended  
12 operation. The leak-before-break analysis included  
13 the effects of thermal aging on the fracture  
14 toughness properties and the critical crack size  
15 analysis for cask material. The Staff reviewed the  
16 leak-before-break analysis and found it acceptable.  
17 Foundation Pile Corrosion, addressed in 4.6.2. The  
18 applicant still -- the Robinson Nuclear Plant's  
19 steel piles are under the Category 1 structure. And  
20 applicant compared material and environment to EPRI  
21 Report, TR-103842. The conclusion from that  
22 comparison is insignificant corrosion. The RNP  
23 steel piles are in undisturbed natural soil, and  
24 they are not appreciably affected by the corrosion  
25 due to deficiency of oxygen, aa nd the same on the

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1 groundwater also. And the Staff finds the TLAA  
2 finding is acceptable.

3 MR. SIEBER: I have a question on this  
4 one.

5 MR. MITRA: Okay.

6 MR. SIEBER: You have Category 1  
7 structure supported by piling and the other  
8 structures adjacent to them are not, so one of them  
9 is solid. I think the piling goes to bedrock.

10 MR. REYNOLDS: Well, it does go down  
11 into something. It doesn't go in the bedrock. It  
12 goes into a clay substance, and --

13 MR. SIEBER: Something that's more solid  
14 than the piles.

15 MR. REYNOLDS: Yes.

16 MR. SIEBER: Well, the question has to  
17 do with the settlement of structures. You know, the  
18 ones on the piling aren't going to settle as much as  
19 the ones that aren't on pilings, and so are  
20 differential settlement and pipe stress and things  
21 like that part of your aging management in these  
22 structures?

23 MR. REYNOLDS: Yes. It's part of our  
24 structural monitoring program. It's one of the  
25 categories that we look at, differential settlement.

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1       However, in this particular case, the containment  
2       variables, the type of freight tower, fuel handling,  
3       all these are all on piles. The turbine building.  
4       So all the others are on piles. Some of the  
5       external structures are not on piles.

6               MR. SIEBER: For example, water  
7       treatment and things like that, where you don't have  
8       a lot of big-time commitment.

9               MR. REYNOLDS: Water treatment is  
10       actually part of the turbine building so it would  
11       be.

12              MR. SIEBER: Okay. That answers my  
13       question. Thank you.

14              MR. MITRA: Elimination of Containment  
15       Penetration Coolers. Applicant analyzed and found  
16       that concrete temperature around the containment  
17       penetration will remain below 200 degrees  
18       Fahrenheit. The applicant withdrew the TLAA and  
19       response of Confirmatory Item 4.6.3-1 will address  
20       the issue of how the analysis was done and why it  
21       will be always less than 200 degrees Fahrenheit.

22              CHAIRMAN LEITCH: I don't understand the  
23       sense of this. It's a question of understanding.  
24       At some point in time, they add containment  
25       penetration coolers and have eliminated those, taken

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1 those out of service?

2 MR. MITRA: Right. Dealing with the  
3 license renewal application as a TLAA, then they  
4 analyzed that the containment will never be over 200  
5 degrees Fahrenheit, so they withdraw that TLAA.

6 MR. ROSEN: This is a normal operating  
7 temperature you're talking about? What is it?

8 MR. MITRA: Yes.

9 MR. REYNOLDS: Bob Reynolds of the  
10 applicant. We had -- when we went through and did  
11 our analysis, we had one penetration that came  
12 through the RHR penetration. When we heat up and  
13 cool down during plant transients, the concrete  
14 could potentially exceed 200 degrees Fahrenheit, and  
15 200 degrees would be the ACI limit. Basically, if  
16 you go above that, you could have -- potentially  
17 have problems with the concrete, so we looked at  
18 that for a while. And after further looking at the  
19 interval of time it takes to just heat up, and the  
20 cool-down period is like 20 hours, maybe 30 hours  
21 during certain intervals. And during that period of  
22 time, you're not at that temperature of 350 degrees  
23 long enough to ever reach 200 degrees. They found  
24 that in the calculation, initial calculation when  
25 they eliminated the coolant. It stated that in

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1 there, so we should never reach the 200 degrees.  
2 We're not at that temperature long enough to ever go  
3 through the pipe, through the insulation, through  
4 the sleeve, etc.

5 MR. ROSEN: That's because you initiate  
6 RHR cooldown. It's hot, but then it cools off  
7 quickly enough to keep the penetration cool.

8 MR. REYNOLDS: That's correct. It's  
9 only used for a certain number of hours.

10 MR. ROSEN: And it's only in the very  
11 beginning of the usage that the temperature is high.

12 MR. REYNOLDS: That's correct.

13 MR. CLEMENTS: And there's not enough  
14 heat transfer here to get the concrete too hot.

15 MR. ROSEN: During the time when that  
16 coolant is still hot.

17 MR. REYNOLDS: That's correct. We  
18 initially thought that we would, based on the  
19 calculations, but we went back and found some more  
20 details.

21 MR. MITRA: Section 4.6.4, Aging of  
22 Boraflex. Licensee or the applicant submitted an  
23 amendment to eliminate the credit of the Boraflex  
24 panels from the Robinson Technical Specification all  
25 together. Panels are not needed to maintain the

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1 factors for the geometry of the spent fuel rods.  
2 Staff is reviewing that amendment application. It's  
3 still being reviewed, so we have a commitment and a  
4 confirmatory item 4.6.4-1 that addressed that if the  
5 amendment is not approved or is delayed beyond  
6 November, 2003, applicant will submit an Aging of  
7 Boraflex TLAA, and the Boraflex Monitoring Program.  
8 And we will address in our safety evaluation report  
9 if it's necessary at that time, when we'll issue it  
10 the last part of January, the final SER.

11 MR. ROSEN: Is this because the Staff is  
12 now granting credit for soluble boron?

13 MR. MITRA: Yes.

14 MR. ROSEN: And, whereas, before they  
15 didn't? So now with the granting of the credit for  
16 soluble boron, Boraflex panels are no longer needed  
17 to contain Keff?

18 MR. MITRA: That's right.

19 DR. BONACA: What happens if you lose  
20 circulation of water coolant?

21 MR. CLEMENTS: It's got nothing to do  
22 with the shielding relied on by the Boraflex. I  
23 mean, the Boraflex has nothing to do with cooling.

24 DR. BONACA: No, I understand. I'm  
25 asking about boron precipitation.

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1 MR. SIEBER: No precipitation but you  
2 could get a gradient of boron concentration.

3 MR. CLEMENTS: There's two pieces to  
4 that. One is, there's also a burn-up requirement on  
5 the fuel.

6 MR. MITRA: That's all I have. Any  
7 other question?

8 CHAIRMAN LEITCH: I had a general  
9 question as I looked through this material regarding  
10 security equipment, and whether it's in scope or not  
11 in scope. And I was trying to find a common thread  
12 here. It looked like some of the stuff was in  
13 scope, and some wasn't in scope. And I guess it  
14 seemed to me that the justification in most cases  
15 was that somehow it was related to fire protection.  
16 Is security equipment per se in scope, or is it only  
17 in scope as it relates to fire protection?

18 MR. HEATH: I can address that.

19 CHAIRMAN LEITCH: Okay.

20 MR. HEATH: This is Mike Heath. The  
21 security system includes security doors in the  
22 auxiliary building.

23 MR. ROSEN: You probably ought to come  
24 forward.

25 MR. MITRA: Come forward.

1 MR. HEATH: We brought that in fire  
2 protection because security system included the fire  
3 doors going into the auxiliary building, so it's  
4 within fire protection for those doors, and that's  
5 the only part of security we brought in.

6 SPEAKER: And there was also one-time mass light for  
7 operators.

8 MR. HEATH: We brought in high mass  
9 light. That was brought in because it was --

10 CHAIRMAN LEITCH: And that was something  
11 that was fire protection, as well.

12 MR. HEATH: Yes. Fire protection. We  
13 used it for lighting post-fire.

14 CHAIRMAN LEITCH: Yes.

15 SPEAKER: And that brought in the security.

16 MR. HEATH: Right.

17 CHAIRMAN LEITCH: But the security  
18 building, as such, is not.

19 MR. HEATH: The security building is for  
20 the equipment it houses associated with that light.

21 CHAIRMAN LEITCH: Okay.

22 MR. HEATH: That light brought in a lot  
23 of stuff.

24 CHAIRMAN LEITCH: Okay. I understand.

25 Well, do any of the Committee Members have any

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1 comments/questions at this point?

2 MR. SIEBER: I guess as a comment, I  
3 found the application of the SER easier than  
4 previous ones to review. I think the Staff and the  
5 applicant both did a pretty good job.

6 MR. BARTON: I would second that. This  
7 was the easiest so far.

8 MR. ROSEN: When we get to Farley, we'll  
9 have no RAIs to read.

10 MR. BARTON: That will be a piece of  
11 cake.

12 MR. SIEBER: One slide for the program.

13 DR. CHANG: Do you have a target that's  
14 useful? (Laughter.)

15 MR. ROSEN: Do you see how many air  
16 molecules there are.

17 MR. SIEBER: Yeah, you count.

18 DR. BONACA: I thought, too, that it was  
19 an easier application to review, and in part it's  
20 because we are more familiar with GALL. And the  
21 other thing I find is the more and more we find  
22 applications that are consistent with GALL, I tend  
23 to look at the operating experience for the plant.  
24 We can look at were there any major problems in the  
25 plant, were there any repairs that would require

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1 unique aging management programs. And so I think  
2 that we're going in the right direction, getting  
3 more focused on plant-specific and less on the  
4 generic because of GALL.

5 I still am concerned about, you know, all the  
6 inspection that you're doing verifies the statement  
7 of the applicant that they are consistent with GALL  
8 is true. But at some point, there's going to be  
9 other inspections to be done before we get to the  
10 30th year to do verification of implementation. And  
11 here today, we see more and more of those  
12 commitments now, to commit to do whatever we will  
13 come up with, with the Westinghouse program, and  
14 with the EPRI program, and so on and so forth.  
15 That's going to be a lot of work to be done by the  
16 Staff to do that kind of verification.

17 DR. KUO: That is true, Dr. Bonaca. And  
18 as we said before, this commitment list is part of  
19 our inspection procedure.

20 DR. BONACA: Sure. I understand.

21 DR. KUO: And, you know, we are trying  
22 to make sure that this is not going to get lost in  
23 the next 10 to 20 years. That's the biggest concern  
24 we have had so far.

25 MR. ROSEN: What we talked about, PT, in

1 the past was this bow wave of commitments, not just  
2 at Robinson, but at all the plants, all roughly  
3 contemporary, each plant knowing exactly what to do  
4 and having a good program to do it, but the Staff  
5 having to verify the implementation of those  
6 commitments effectively across the whole industry at  
7 once.

8 MR. SIEBER: Different commitments.  
9 Well, it won't be at once.

10 MR. ROSEN: Well, pretty close together.

11 DR. KUO: Yes.

12 MR. ROSEN: It'll be pretty close  
13 together, when all the plants came on line in a  
14 given period of time, and so the challenge is not  
15 going to be for the individual licensee so much,  
16 it's the Inspection Branch and the Staff. We made  
17 that comment to the Commission and to you.

18 DR. KUO: Yeah.

19 MR. ROSEN: And I know that some day  
20 you'll have a war room with all of these plants on  
21 it, and all their commitments, and you're sitting  
22 there saying what should we do now? I hope not. I  
23 hope you'll --

24 DR. KUO: Yes, we'll start doing that.  
25 We have informed the management that, you know,

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1 later on by the time that we have to inspect all  
2 this commitments, either we have the resources for  
3 the Inspection Branch, or we have the resources for  
4 the region.

5 DR. BONACA: I think it's also big  
6 challenge for the licensee. I would like to hear  
7 from the licensee, because you have, in addition to  
8 all these things which are in scope, you also have  
9 those other items which are not in scope. And you  
10 don't want to have the plant, you know, run in the  
11 ground because you have -- for example, the  
12 pressurizer spray head, I mean, is not in scope.  
13 And, certainly, you don't want it to break and have  
14 pieces up there, and so on and so forth. So it's  
15 going to be a real challenge.

16 MR. SIEBER: You'll never know until you  
17 can't depressurize it.

18 DR. BONACA: What?

19 MR. SIEBER: You'll never know until you  
20 can't depressurize.

21 MR. BARTON: Until the operators tell  
22 you something is wrong --

23 MR. SIEBER: Hey, this isn't working  
24 right.

25 DR. BONACA: I'm being serious. I think

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1 it's a big challenge, because this only defines a  
2 certain set of components, but you have a much  
3 broader set of components you have to worry about.  
4 And it's going to be a challenge for the whole  
5 industry.

6 MR. SIEBER: Well, I was always curious.  
7 This is -- I don't want an answer because it's no  
8 business of our's, but how many FTEs go into doing  
9 one of these reviews. There's a lot of reviewers  
10 and you can tell there's a lot of work. And then  
11 compare that to how many FTEs you think it's going  
12 to take to do the inspections, because I think that  
13 we're going to do a lot of review and approval  
14 first, and then the next 20 years, it'll be like the  
15 inspections in order to verify. And my guess is the  
16 inspections will take more FTEs than the review  
17 does.

18 DR. KUO: We hope it doesn't.

19 MR. SIEBER: It's far easier to read and  
20 write than it is to cramp and crawl, looking.

21 MR. ROSEN: Well, you're also talking  
22 about a perfect world in which nothing new turns up.  
23 And I don't live in that world.

24 MR. SIEBER: Yes, I can understand.

25 MR. ROSEN: It seems like every -- you

1 live in an imperfect world. We tend to have new  
2 challenges. And older plants tend to have more new  
3 challenges, perhaps, maybe. We'll see. We'll see  
4 how that turns out.

5 MR. BARTON: Then when you increase  
6 power by 20 percent, you induce a whole new set of  
7 challenges.

8 MR. ROSEN: Older plants operating at  
9 higher power.

10 MR. BARTON: Yes.

11 MR. SIEBER: Well, strangely enough, a  
12 plant like this, though, has a fair amount of  
13 margin, other than steam generators, which to my way  
14 of thinking in a 3-loop plant do not have a lot of  
15 surplus. And that's why they don't have very high  
16 output. But generally, speaking T-hot is lower so  
17 you don't have the stress on materials and the flows  
18 are low, and so my guess would be that if the plant  
19 was well maintained, it would perform well.

20 DR. KUO: Just to give you a preview, as  
21 a preview, that we are going to receive three unique  
22 plants. The first one on my list is Browns Ferry.  
23 They are coming in - their application will come in  
24 December. This will be three units.

25 MR. SIEBER: All three units?

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1 DR. KUO: All three units.

2 MR. SIEBER: How about the one -- they  
3 don't even know what the one --

4 DR. KUO: They are doing the restart  
5 work right now.

6 MR. SIEBER: Yes, I know, but I doubt  
7 that they would, when they refurbish that plant,  
8 that they would make it like it was in 1980.

9 DR. KUO: Their commitment is to make it  
10 the same as the Units 2 and 3.

11 MR. ROSEN: They'll have to go out and  
12 buy all that old stuff.

13 DR. KUO: They're going to spend about  
14 \$2 billion.

15 MR. ROSEN: Yes. And try to find all  
16 the old vendors for all that old stuff.

17 MR. SIEBER: They'll have to dig them up.

18 MR. ROSEN: This will be interesting to  
19 see.

20 DR. KUO: Yes. That will be a challenge  
21 for us, I'm sure.

22 CHAIRMAN LEITCH: I think we owe the  
23 applicant and the Staff some guidance as to those  
24 things that we'd like to hear at the full committee  
25 meeting.

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1 MR. SIEBER: Yes.

2 CHAIRMAN LEITCH: Perhaps, the emphasis  
3 on certain points that were made here. Perhaps  
4 there are other issues. Would any of the Committee  
5 like to speak to that?

6 DR. BONACA: Well, just one observation,  
7 a point I made before, is that, you know, personally  
8 as I move from plant to plant, I believe we need to  
9 focus more on the unique differences of the plant's  
10 operating history. And go into, you know, areas  
11 like containment buckling in the liner. These  
12 areas we should look at. And maybe it would be  
13 worthwhile to have a brief synopsis by the applicant  
14 of some of the operating history. I mean just, you  
15 know, the relevant issues, that they have shown a  
16 plan on how to deal with some of the unique things.

17 CHAIRMAN LEITCH: Major equipment  
18 replacement, major repairs.

19 DR. BONACA: That's right. Things that  
20 would affect the way to look at some components in  
21 license renewal.

22 DR. CHANG: Dr. Bonaca, maybe I can say  
23 something. When we go out to -- Ken Chang, doing a  
24 few audits before. When we go out to audit AMPs for  
25 containment review, we spent an awful lot of time in

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1 looking to the operating experience, how they  
2 address operating experience of the plant, as well  
3 as how the operating experience of the other plants  
4 in the industry affects your thinking when you are  
5 looking into your plant.

6 DR. BONACA: So we would like to hear  
7 from you, too.

8 DR. CHANG: We've started to, but it will  
9 be increased.

10 DR. BONACA: Because, again, I mean as  
11 we go forward, where there is compliance with GALL  
12 and there is no history that says otherwise, we're  
13 not going to look any more that thoroughly because  
14 we are familiar with those commitments.

15 CHAIRMAN LEITCH: Anyone else?

16 MR. BARTON: I don't know if you want to  
17 make sure the Committee hears what's going on in the  
18 Boric Acid Inspection Program here. You know, this  
19 is shortly after Davis-Besse. That might come up,  
20 what is their program going to be like. So that may  
21 be something the Committee wants to hear.

22 CHAIRMAN LEITCH: And we also heard that  
23 the Boric Acid Inspection Program had not been tied  
24 tightly to plant procedures as recent inspections  
25 shows that it was, and maybe we can hear more about

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1 that since this is such a hot topic right now. And  
2 I think we'd like to hear -- I, for one, would like  
3 to hear the closure of this issue, the slide that's  
4 on the board right at the moment. And I'd also be  
5 curious - I don't know that it's directly related to  
6 license renewal, but I'd like to hear the  
7 disposition of this relief request for relaxation of  
8 the order for head inspection. I'd just like to  
9 know the disposition. It's in the current license  
10 basis. It's not license renewal really. I mean,  
11 they'll have a new head long before that.

12 DR. KUO: Okay.

13 MR. SIEBER: I don't know that they know  
14 they have a disposition.

15 CHAIRMAN LEITCH: No, they don't. But  
16 what I'm saying is when we get to the full committee  
17 meeting two or three months from now, they may know  
18 that. If they know it, I'd like to hear it.

19 MR. ROSEN: I have one thought about --  
20 this is really, of course, not part of license  
21 renewal either, but what are the plant's plans for  
22 power uprate? Is that something that is known or  
23 that can be talked about, or is it -- should we just  
24 assume --

25 MR. SIEBER: Here at this plant? Other

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1 than some --

2 MR. STEWART: We did a power uprate from  
3 the time we submitted -- we did that after we  
4 submitted, and there's no major power uprates that  
5 I'm aware of on the books for planning right now.

6 MR. SIEBER: You would have to change  
7 steam generators.

8 MR. STEWART: Roughly 5 percent power  
9 uprate in the 80s.

10 MR. SIEBER: That was a stretch point.

11 MR. STEWART: We stretched, and you're  
12 right. With the steam generators and stuff we have,  
13 there's -- we have no projects on the books right  
14 now.

15 MR. SIEBER: Well, your steam generators  
16 are in pretty decent shape. Unless you really need  
17 the power, it wouldn't be worth the money.

18 CHAIRMAN LEITCH: I think one of the  
19 things, too, I'm always interested in when we get to  
20 the Full Committee Meeting is just how you're going  
21 to track these commitments. In other words, you  
22 touched on it today, but I'd like to hear a little  
23 more about it. I mean, when the license renewal  
24 group goes away, who owns this program? You talked  
25 -- if I remember the numbers, some of these programs

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1 were going to be implemented within what you called  
2 the short period. But there are perhaps 30 of them  
3 or 25 of them that are not going to be implemented  
4 in the short period. Just some plans. I mean, we  
5 recognize that you don't have to do it until the end  
6 of the current period, but we'd just like to know  
7 what your thinking is, what your plans are, how is  
8 this going to be implemented? How are these  
9 commitments going to be tracked internally in your  
10 organization. Because you guys, the plant renewal,  
11 license renewal team are going to go away or move on  
12 to big and better things. But somebody is going to  
13 have to continue this. So I think at the full  
14 committee meeting we'd like to just hear a little  
15 more about that topic. I mean, you touched on it  
16 today, but it's just a matter of re-emphasis.  
17 Anything else?

18 Well, I think we can declare success at  
19 maintaining the schedule. We did have to squeeze a  
20 couple of people there a little bit, and we  
21 apologize for that, but we were able to come in on  
22 schedule. I want to thank the applicant and the  
23 Staff.

24 As the other members have mentioned, I  
25 think the presentations were excellent, and I think

1 the application was well-prepared and easy to  
2 review, to the credit of everyone that was involved  
3 with the process. So thanks very much, and we stand  
4 adjourned. Thank you.

5 (Whereupon, the proceedings in the  
6 above-entitled matter went off the record at 4:03  
7 p.m.)  
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CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Advisory Committee on  
Reactor Safeguards  
Plant License Renewal  
Subcommittee

Docket Number: n/a

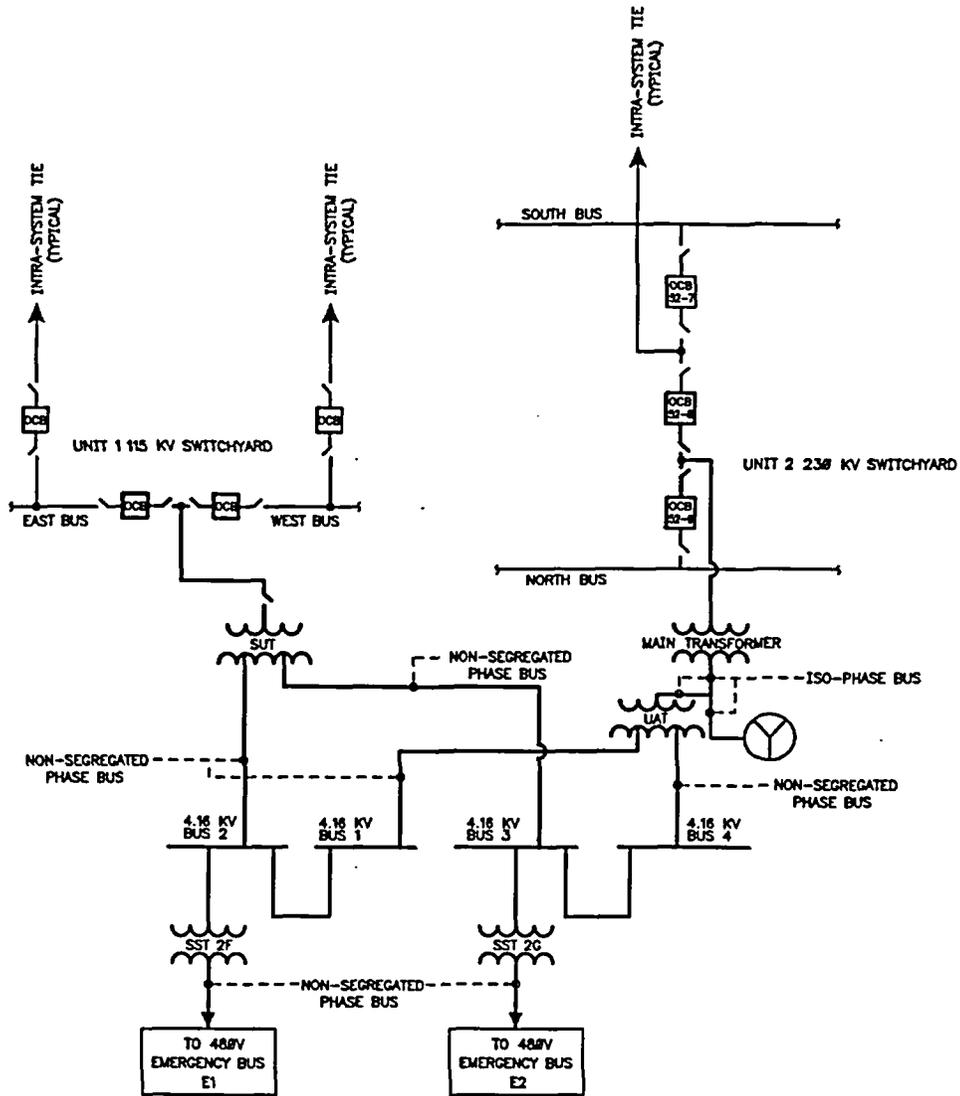
Location: Rockville, MD

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

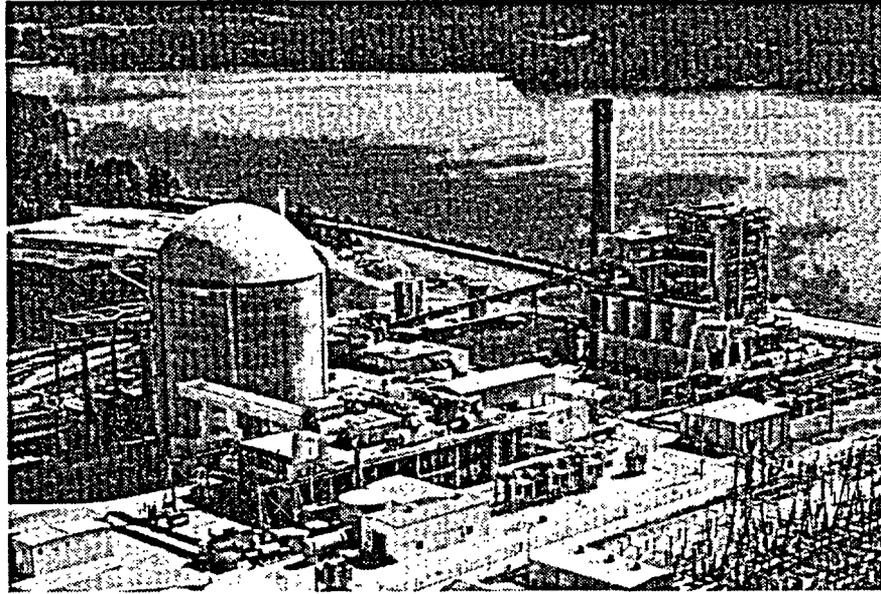


Eric Hendrixson  
Official Reporter  
Neal R. Gross & Co., Inc.

# RNP-SB0 Offsite Power Recovery

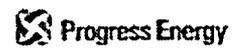


RED = First Source of Offsite Power  
 BLUE = Second Source of Offsite Power



## **ROBINSON NUCLEAR PLANT**

**Progress Energy  
Presentation to ACRS  
Roger Stewart  
September 30, 2003**



## CONTENTS

- Background
  - ◆ Unit 1/Unit 2 Shared Resources
- Operating experience
  - ◆ RV Head Penetrations
- Scoping and Screening Methodologies/  
Exceptions to GALL
- Commitments/Tracking



## Background - RNP

- Initial License granted July 31, 1970
- Westinghouse 3 loop 2339 MWT PWR
  - ◆ “Sister” plant to Turkey Point
  - ◆ All NRC Performance Indicators Green
  - ◆ All NRC Inspection Findings Green



## **Unit 1/Unit 2 Shared Resources In Scope Systems/Structures**

- Lake
  - ◆ Common Lake, Dam, Spillway
  - ◆ Separate Intake Structures
- Fuel Oil
  - ◆ Unit 1 credited for additional capacity
- Fire Water Systems
  - ◆ Systems are cross connected but separated by closed isolation valves



## **Unit 1/Unit 2 Shared Resources Non-LR Scope Systems/Structures**

- Hydrogen Supply
- Sewage Treatment
- Telephone and PA Systems
- Training Buildings
- Warehouse
- Waste Oil Disposal Facility
- Railway
- Access Road

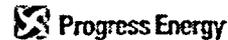


## Operating Experience

	1999	2000	2001	2002	2003
Capacity	95.01	103.96	92.18	93.70	(9/22) 103.32 (proj.) 103.39
Refuel	9/24 to 10/24		4/7 to 5/12	10/12 to 11/14	

Breaker to Breaker operation between spring 2001 and fall 2002 refueling. Other offline, minimal:

- 1/8/99 to 1/10/99 Maintenance Outage to repair WD-1728
- 6/21/00 to 6/22/00 Manual Trip due to Turbine EH oil leak
- 11/24/02 Turbine taken offline to repair steam leak



## RV Head Penetrations - Upper

- RO-20 Inspection
  - "Bare Head" Inspection performed as the result of evidence of leakage (CRDM canopy seal weld)
  - No VHP nozzle or RCS pressure boundary leakage detected
  - Inspection performed prior to issuance of NRC Bulletin
- Analyses confirmed leakage paths exist such that visual examination would detect leakage
  - Westinghouse Analyses
  - FEA performed by Dominion Engineering and Structural Integrity Associates
  - Design and manufacturing information
- RO-21 Inspection – No indication or degradation identified that required repair
- Replacement Head Ordered for RO-23 (Fall 2005)



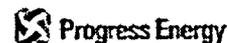
## **RV Head Penetrations - Lower**

- RNP Plans RO-22 (Spring 2004) Inspection
  - Remote bare metal visual
- Developing Contingency Plans
  - Identification of sources
  - NDE and repair



## **Scoping and Screening Methodologies/ Exceptions to GALL**

- IPA/TLAA technical work performed in accordance with Progress Energy Quality Assurance Program (Appendix B)
- LRA prepared following guidance of NEI 95-10 in SRP format
- Supplement provided to address ISGs
- Unique Aspects-
  - Grouted Tendons
  - Dedicated Shutdown Diesel
- No Major Exceptions to GALL



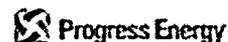
## **Commitments/Tracking**

- 10 Existing Programs Credited with no changes required
- 37 Commitments for 27 Enhancements and 10 New Programs
- All Commitments have been entered into RNP Commitment Tracking Program
- 18 of the Commitments are anticipated to be accomplished “near-term”
- 19 of the Commitments are anticipated to be “transitioned”
  - Transition Plan in place



## **Commitments/Tracking**

- Once Implemented
  - Commitments are identified in implementing documents
  - Change controlled by 10 CFR 50.59 process
- Configuration control process will incorporate guidance to ensure that requirements of 10 CFR 54.37(b) are met; Support by
  - License Renewal Training
  - License Renewal Design Basis Document
  - UFSAR Supplement





# H.B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2

License Renewal SER  
with Open Items

Staff Presentation to the ACRS  
SIKHINDRA (S.K.) MITRA  
Project Manager  
September 30, 2003



## Overview

- › APPLICATION SUBMITTED BY LETTER DATED JUNE 14, 2002
- › WESTINGHOUSE PRESSURIZED WATER REACTOR, THREE LOOP CLOSED CYCLE, GENERATE 2339 MEGAWATT THERMAL, AND 769 MEGAWATT ELECTRICAL, 1 UNIT
- › PLANT LOCATED ON MANMADE LAKE ROBINSON IN DARLINGTON COUNTY, SOUTH CAROLINA.



## Overview (continued)

- **CURRENT LICENSE EXPIRES JULY 31, 2010**
- **REQUEST LICENSE RENEWAL THROUGH JULY 31, 2030**
- **APPLICATION IMPLEMENTED THE GENERIC AGING LESSONS LEARNED (GALL) PROCESS**



## NRC Review Process

- **2 OPEN ITEMS (RESOLVED)**
- **29 CONFIRMATORY ITEMS**
- **BROUGHT INTO SCOPE AND SUBJECTED TO AMR**
  - **5 NEW STRUCTURES**
  - **159 NEW COMPONENTS**
- **4 NEW AMPs**



## **NRC Audits and Inspections**

- **SCOPING AND SCREENING METHODOLOGY AUDIT**
  - **SEPTEMBER 17 - 20, 2002**
- **SCOPING AND SCREENING INSPECTION**
  - **MARCH 31 - APRIL 4, 2003**
- **AGING MANAGEMENT PROGRAM AUDIT**
  - **MAY 28 - 29, 2003**
- **AGING MANAGEMENT REVIEW INSPECTION**
  - **JUNE 9 - 14 and JUNE 23 - 27, 2003**
- **FINAL INSPECTION**
  - **SEPTEMBER 9 - 10, 2003**

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## **Section 2 - Structures and Components Subject to an Aging Management Review**

- **2.1 - SCOPING AND SCREENING  
METHODOLOGY**
- **DESCRIBES METHODOLOGY USED TO  
IDENTIFY SSCs THAT ARE WITHIN  
THE SCOPE OF THE LICENSE  
RENEWAL RULE AND SUBJECT TO AN  
AMR**

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## **Section 2.1 – Scoping and Screening Methodology (Continued)**

- **STAFF CONDUCTED METHODOLOGY AUDIT**
- **PURPOSE OF AUDIT WAS TO VERIFY THAT THE SCOPING AND SCREENING METHODOLOGY WAS CONSISTENT WITH THE REQUIREMENTS OF THE RULE**
- **AUDIT TEAM FOUND THAT THE APPLICANT'S METHODOLOGY SATISFIES THE RULE**

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## **Section 2.2 – Plant Level Scoping Results**

- **STAFF REVIEWED SECTION 2.2 TO DETERMINE IF ANY STRUCTURES OR COMPONENTS SUPPOSED TO BE WITHIN SCOPE WERE OMITTED**
- **SEVERAL STRUCTURES AND COMPONENTS INITIALLY OMITTED FROM SCOPE THAT MET SCOPING CRITERION 54.4(a)(2)**

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## Section 2.3 Scoping and Screening of Mechanical Systems

- **INCLUDES:**
  - **REACTOR SYSTEMS (7)**
  - **ENGINEERED SAFETY FEATURES SYSTEMS (5)**
  - **AUXILIARY SYSTEMS (19)**
  - **STEAM POWER CONVERSION SYSTEMS (12)**

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## Section 2.3 Scoping and Screening of Mechanical Systems (Continued)

- **SSCs WERE INITIALLY OMITTED FROM SCOPE. THESE SSCs MET SCOPING CRITERION 54.4(a)(2)**
  - **STEAM GENERATOR FEEDRINGS**
  - **DEEPWELL PUMPS, AND ASSOCIATED PIPING**
  - **HYDROGEN RECOMBINERS**
  - **SPENT FUEL POOL MAKEUP PATH FROM RWST**
- **THESE SYSTEMS WERE BROUGHT INTO SCOPE, ALONG WITH ASSOCIATED AGING MANAGEMENT INFORMATION**

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## Open Items

- › **Open Item 2.3.1.6-1**
  - › **STAFF IDENTIFIED THAT DEGRADATION OF THE FEEDRINGS, J-NOZZLES, OR J-NOZZLE WELDS COULD PRODUCE LOOSE PARTS INSIDE THE STEAM GENERATOR SHELL**
    - › **MAY DAMAGE SAFETY-RELATED COMPONENTS, ESPECIALLY DURING TRANSIENTS**
    - › **COMPONENTS BROUGHT INTO SCOPE AND OPEN ITEM IS RESOLVED**

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## Open Items (continued)

- › **Open Item 2.3.3.8-1**
  - › **FOLLOWING A LAKE ROBINSON DAM FAILURE AND DEPLETION OF CONDENSATE STORAGE TANK INVENTORY FAILURE OF DEEPWELL PUMPS WOULD CAUSE FAILURE OF THE SAFETY RELATED AUXILIARY FEEDWATER SYSTEM AND PREVENT THE RESIDUAL HEAT REMOVAL NECESSARY TO MAINTAIN A SAFE SHUTDOWN CONDITION**
    - › **THREE DEEPWELL PUMPS, ASSOCIATED PIPING, AND VALVES WERE BROUGHT INTO SCOPE AND OPEN ITEM IS RESOLVED.**

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## Confirmatory Items

- › **Confirmatory Item 2.3.2.5-1**
  - › **STAFF IDENTIFIED HYDROGEN CONTROL HAS AN INTENDED FUNCTION FOR THE POST-ACCIDENT HYDROGEN SYSTEM, AND HYDROGEN RECOMBINERS PREVENT THE ACCUMULATION OF COMBUSTIBLE CONCENTRATION OF HYDROGEN WITHIN THE CONTAINMENT BUILDING.**
  - › **HYDROGEN RECOMBINERS AND ASSOCIATED PIPING WERE BROUGHT INTO SCOPE**

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## Confirmatory Items (continued)

- › **Confirmatory Item 2.3.3.9-1**
  - › **FAILURE OF MAKEUP SUPPLY FROM REFUELING WATER STORAGE TANK (RWST) COULD CAUSE FAILURE OF SPENT FUEL COOLING DUE TO INADEQUATE COOLANT INVENTORY**
  - › **SPENT FUEL POOL (SFP) MAKEUP WATER PATH AND ASSOCIATED COMPONENTS FROM RWST TO SFP WAS BROUGHT INTO SCOPE**

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## **SECTION 2.4 STRUCTURES AND STRUCTURAL COMPONENTS**

- **DESCRIBES STRUCTURES AND  
STRUCTURAL COMPONENTS**
  - **CONTAINMENT**
  - **OTHER STRUCTURES (13)**
- **NO OPEN OR CONFIRMATORY ITEMS**

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## **SECTION 2.5 - ELECTRICAL SYSTEMS, INSTRUMENTATION, & CONTROL SYSTEMS**

- **SSC WERE INITIALLY OMITTED FROM  
SCOPE**
  - **FUSE HOLDERS**
  - **STATION BLACKOUT COMPONENTS,  
SUCH AS:**
    - **GENERATOR ISOLATED PHASE (ISO-PHASE) BUS  
DUCT**
    - **NON SEGREGATED 4.16-kV & 480 V BUS DUCTS**
    - **HIGH-VOLTAGE INSULATORS**

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## SCOPING AND SCREENING SUMMARY

- ▶ **THE APPLICANT'S METHODOLOGY MEETS THE REQUIREMENTS OF THE RULE.**
- ▶ **SCOPING AND SCREENING RESULTS INCLUDED ALL SSCs WITHIN THE SCOPE OF LICENSE RENEWAL AND SUBJECT TO AN AMR.**

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## LICENSE RENEWAL INSPECTIONS

- ▶ **HIGHLIGHTS:**
  - ▶ **SCOPING AND SCREENING INSPECTION**
  - ▶ **AMR INSPECTION**
  - ▶ **FINAL INSPECTION**
  - ▶ **COMMITMENT TRACKING**
  - ▶ **PLANT ROP**

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## License Renewal Inspection Program Implementation

- LICENSE RENEWAL MANUAL CHAPTER - MC 2516
- LICENSE RENEWAL INSPECTION PROCEDURE - IP 71002
- SITE-SPECIFIC INSPECTION PLAN FOR EACH APPLICANT
- SCHEDULED TO SUPPORT NRR's REVIEW
- RESOURCES-CONSISTENT TEAM OF THE SAME FIVE INSPECTORS
- TRAINING PROGRAM FOR REPLACEMENT TEAM MEMBERS

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## License Renewal Inspections

- *SCOPING AND SCREENING INSPECTION*
- **OBJECTIVE: TO CONFIRM THAT THE APPLICANT HAS INCLUDED ALL APPROPRIATE SSCs IN THE SCOPE OF LICENSE RENEWAL AS REQUIRED BY THE RULE.**
- ONE WEEK IN LENGTH
- CONDUCTED MARCH 31 – APRIL 4, 2003 AT ROBINSON SITE
- **CONCLUDED THAT SCOPING AND SCREENING PROCESS WAS SUCCESSFUL IN IDENTIFYING THOSE SSCs NEEDING AGING MANAGEMENT REVIEW**

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## **SCOPING & SCREENING INSPECTION** *(Continued)*

- QUESTIONED WHY UNIT 1 AND 2 FUEL OIL TRANSFER PIPING AND DEEP WELL BACKUP WATER SUPPLY FOR AUXILIARY FEEDWATER SYSTEM WERE NOT IN SCOPE
- THREE EXAMPLES OF INCONSISTENCY BETWEEN THE APPLICATION, BOUNDARY DRAWINGS AND CALCULATIONS
- CALCULATION DESCRIBING HANDLING OF NON-SAFETY RELATED PIPING IN VICINITY OF SAFETY RELATED WAS UNCLEAR
- SUBSEQUENT INSPECTION FOLLOWUP FOUND THESE ISSUES HAD BEEN CORRECTED

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## **AGING MANAGEMENT INSPECTION**

- OBJECTIVE: TO CONFIRM THAT EXISTING AMPs ARE WORKING WELL AND TO EXAMINE THE APPLICANT'S PLANS FOR ESTABLISHING NEW AMPs AND ENHANCING EXISTING AMPs
- TWO WEEKS IN LENGTH
- CONDUCTED JUNE 9-27, 2003
- INCOMPLETE INTEGRATION OF FUTURE TASKS INTO ESTABLISHED SITE ACTION REQUEST TRACKING SYSTEM
- MATERIAL CONDITION OF PLANT WAS BEING ADEQUATELY MAINTAINED AND HAS IMPROVED OVER TIME.
- DOCUMENTATION WAS OF GOOD QUALITY.

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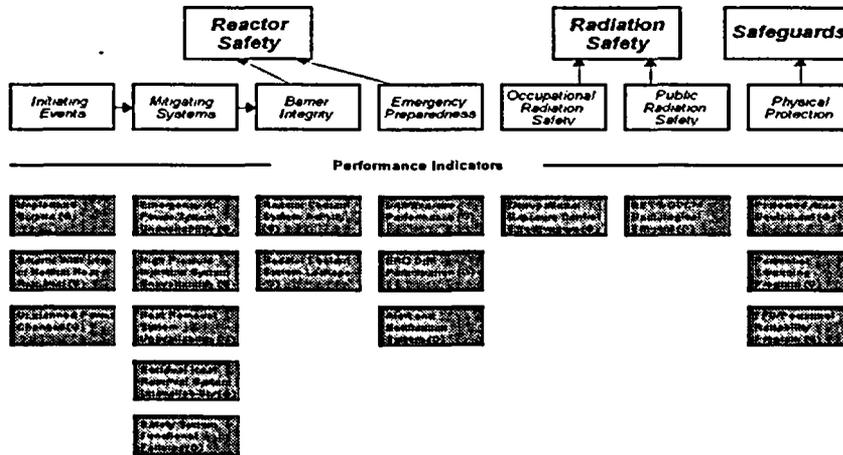
# AGING MANAGEMENT INSPECTION (Continued)

- THIRD (OPTIONAL) INSPECTION
- CONDUCTED SEPTEMBER 9-10, 2003
- APPLICANT HAD LOADED FUTURE TASKS INTO ESTABLISHED SITE ACTION REQUEST TRACKING SYSTEM
- TRANSITION PLAN FOR COMPLETION OF LICENSE RENEWAL PROJECT WAS ESTABLISHED

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## RNP 2Q/2003 PERFORMANCE SUMMARY



Last Modified July 22, 2003



## **SECTION 3 - AGING MANAGEMENT REVIEW**

- › **GALL DIVIDES SYSTEMS AND STRUCTURES INTO 6 BROAD SYSTEM/STRUCTURAL GROUPS**
- › **REACTOR SYSTEMS (3.1)**
- › **ENGINEERED SAFETY FEATURES SYSTEMS (3.2)**
- › **AUXILIARY SYSTEMS (3.3)**
- › **STEAM AND POWER CONVERSION SYSTEMS (3.4)**
- › **CONTAINMENTS, STRUCTURES AND COMPONENT SUPPORTS (3.5)**
- › **ELECTRICAL AND INSTRUMENTATION AND CONTROLS (3.6)**

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## **AGING MANAGEMENT PROGRAMS**

- › **12 COMMON AGING MANAGEMENT PROGRAMS (AMPs)**
- › **26 SYSTEM/STRUCTURAL GROUP-SPECIFIC AMPs**
- › **CONSISTENT WITH GALL: 13**
- › **CONSISTENT WITH GALL, BUT WITH SOME DEVIATION: 18**
- › **NON-GALL: 7**
- › **STAFF EVALUATION RESULTS OF COMMON AMPs DOCUMENTED IN SER SECTION 3.0.3, SYSTEM SPECIFIC AMPs IN EACH SYSTEM/STRUCTURE GROUP**

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## RNP AMPs STATISTICS

- TOTAL NUMBER OF AMPs: 38
- NUMBER OF AMPs ARE REFERENCED IN THE LRA: 34, NOW: 38
- FOUR AMPs ADDED FOR FOLLOWING COMPONENTS
  - RADIATION MONITORING INSTRUMENTATION
  - NON-EQ CABLE
  - NEUTRON FLUX INSTRUMENTATION CABLE
  - FUSE HOLDERS
  - BUS DUCTS

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## RNP AMPs AUDIT

- DATE OF AUDIT - MAY 28-29, 2003
- AUDITORS - 5 PROJECT MANAGERS FROM LICENSE RENEWAL
- AUDITED ALL THE ATTRIBUTES OF THE AMPs CLAIMED TO BE CONSISTENT WITH GALL
- CONCLUDED AMPs WERE CONSISTENT WITH GALL EXCEPTING:
  - NON-EQ INSULATED CABLES AND CONNECTIONS PROGRAM LACKED DETAIL TO CONCLUDE CONSISTENCY WITH GALL
  - AMP WAS REVISED AND RESUBMITTED TO TECHNICAL STAFF FOR REVIEW
  - STAFF FOUND IT ACCEPTABLE

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## SECTION 3.1 - REACTOR SYSTEMS

- › REACTOR COOLANT SYSTEM PIPING
- › REACTOR COOLANT PUMPS
- › PRESSURIZER
- › REACTOR VESSEL
- › REACTOR VESSEL INTERNALS
- › STEAM GENERATORS
  
- › NINE CONFIRMATORY ITEMS
  
- › NO OPEN ITEMS

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## ALLOY 600 PROGRAM

- › NRC ORDER EA-009-03 REQUIRES AUGMENTED INSPECTIONS OF ALLOY 600 NOZZLES TO UPPER REACTOR VESSEL HEAD DURING CLB
- › NRC BULLETIN 2003-03 ADDRESSES CRACKING IN THE ALLOY 600 PENETRATION NOZZLES ADJOINED TO THE LOWER VESSEL HEAD
- › AS OTHER ALLOY 600 OR ALLOY 82/182 ISSUES ARISE, STAFF WILL ADDRESS THEM WITHIN THE CURRENT OPERATING TERM

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## **ALLOY 600 PROGRAM (Continued)**

- ▶ **COMMITMENT BY THE APPLICANT TO SUBMIT THE ALLOY 600 PROGRAM TO THE STAFF FOR REVIEW AND APPROVAL BY JULY 31, 2009**
- ▶ **THE COMMITMENT WILL PERMIT THE STAFF TO REVIEW THE AMP FOR ACCEPTABILITY AGAINST NRC REQUIREMENTS AS WELL AS THOSE INSPECTION ACTIVITIES RECOMMENDED BY THE EPRI-MRP FOR CLASS 1 ALLOY 600 BASE METALS AND ALLOY 82/182 WELD MATERIALS**

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## **SECTION 3.2 - ENGINEERED SAFETY FEATURES (ESF) SYSTEMS**

- ▶ **RESIDUAL HEAT REMOVAL**
- ▶ **SAFETY INJECTION**
- ▶ **CONTAINMENT SPRAY**
- ▶ **CONTAINMENT AIR RECIRCULATION COOLING**
- ▶ **CONTAINMENT ISOLATION**
  
- ▶ **NO OPEN OR CONFIRMATORY ITEMS**

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## SECTION 3.3 - AUXILIARY SYSTEMS

- > **19 AUXILIARY SYSTEMS**
- > **THREE CONFIRMATORY ITEMS**
- > **NO OPEN ITEMS**

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## SECTION 3.4 - STEAM AND POWER CONVERSION SYSTEMS

- > **12 STEAM AND POWER CONVERSION  
SYSTEMS**
- > **NO OPEN ITEMS**
- > **NO CONFIRMATORY ITEMS**

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## **SECTION 3.5 - CONTAINMENT, STRUCTURES, AND COMPONENT SUPPORTS**

- › **CONTAINMENT STRUCTURE**
- › **13 OTHER STRUCTURES**
- › **ONE CONFIRMATORY ITEM**
- › **NO OPEN ITEMS**

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## **AGING MANAGEMENT OF IN-SCOPE INACCESSIBLE CONCRETE**

- › **BELOW GRADE SOIL/WATER-AGGRESSIVE, pH  
SLIGHTLY LOWER THAN THE THRESHOLD OF 5.5**
- › **PRIME INDICATORS: INSPECTION OF INTAKE  
STRUCTURE, DAM SPILLWAY, EXCAVATED RAB  
FOUNDATION, MANHOLES**
- › **PERIODIC TESTING OF GROUNDWATER TO MONITOR  
CHANGES**
- › **COMMITMENT TO RESOLVE BELOW GRADE  
DEGRADATION ISSUES THROUGH ENHANCEMENTS OF  
SMP AND IWL**

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## SECTION 3.6 - ELECTRICAL AND I&C

- 3 COMPONENT COMMODITY GROUPS SUBJECT TO AN AMR
  - BUS DUCTS
  - INSULATED CABLES AND CONNECTIONS
  - ELECTRICAL/I&C PENETRATIONS ASSEMBLIES
- THREE CONFIRMATORY ITEMS
- NO OPEN ITEMS
- FOUR AMPs ADDED FOR THE FOLLOWING COMPONENTS:
  - RADIATION MONITORING INSTRUMENTATION NON-EQ CABLE
  - NEUTRON FLUX INSTRUMENTATION CABLE
  - FUSE HOLDERS
  - BUS DUCTS

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## SECTION 4 - TIME-LIMITED AGING ANALYSES

- 4.1 - IDENTIFICATION OF TLAA's
- 4.2 - REACTOR VESSEL NEUTRON EMBRITTELEMENT
- 4.3 - METAL FATIGUE
- 4.4 - ENVIRONMENTAL QUALIFICATION
- 4.5 - CONCRETE CONTAINMENT TENDON PRESTRESS
- 4.6 - OTHER TLAA's
  - 4.6.1 - THERMAL AGING EMBRITTELEMENT, LBB ANALYSIS
  - 4.6.2 - FOUNDATION PILE CORROSION
  - 4.6.3 - ELIMINATION OF CONTAINMENT PENETRATION COOLERS
  - 4.6.4 - AGING OF BORAFLEX

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## SECTION 4.2 - REACTOR VESSEL NEUTRON EMBRITTLEMENT

- › Analysis of PTS projected to end of PEO
- › Staff performed independent calculations

ITEMS	LIMIT (° F)	RNP (°F)
CIRCUMFERENTIAL WELDS	300	275
PLATES/FORGINGS/AXIAL WELDS	270	235

PTS = Pressurized Thermal Shock



## REACTOR VESSEL UPPER SHELF ENERGY (USE)

- › ANALYSIS OF USE PROJECTED AT THE END OF PEO
- › STAFF PERFORMED INDEPENDENT CALCULATION

REACTOR VESSEL UPPER SHELF ENERGY (USE)	LIMIT (MINIMUM) FT-LBS	RNP FT-LBS
WELDS/FORGINGS	50	56
PLATE MATERIALS	42 (EMA)	45
NOZZLE FORGING	50	53
NOZZLE WELDS	50	52

EMA = Equivalent Margin Analysis



## SECTION 4.3 METAL FATIGUE

### AUXILIARY FEEDWATER (AFW) LINE FATIGUE:

- 4"X16" AFW AND MAIN FW CONNECTIONS ARE FATIGUE CRITICAL
- CUF=1.0 AT ~ 50 YEARS (BASED ON PROJECTIONS OF ACTUAL TRANSIENTS TO DATE)

CUF = Cumulative Usage Factor

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### AUXILIARY FEEDWATER (AFW) LINE FATIGUE (Continued):

- COMMITMENT
  - TRANSIENTS WILL BE TRACKED BY FMP
  - COMPONENTS WILL BE EITHER RE-ANALYZED OR REPLACED PRIOR TO EXCEEDING CYCLES OF TRANSIENTS TRACKED BY FMP
  - REVISION OF UFSAR SUPPLEMENT IS CONFIRMATORY ITEM 4.3.2-1

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## **ENVIRONMENTALLY-ASSISTED FATIGUE (EAF)**

- > **PROJECTED EAF-ADJUSTED CUF>1.0 FOR PZR SURGE  
LINE DURING EXTENDED PERIOD OF OPERATION**
- > **COMMITMENT:**
- > **FATIGUE OF SURGE LINE WILL BE MANAGED USING  
ONE OR MORE OF THE FOLLOWING OPTIONS:**
  1. **REFINE FATIGUE ANALYSIS TO LOWER CUF TO LESS  
THAN ONE**
  2. **REPAIR AFFECTED LOCATIONS**
  3. **REPLACE AFFECTED LOCATIONS**
  4. **MANAGE FATIGUE BY USING NRC APPROVED AUGMENTED ISI  
PROGRAM**

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## **ENVIRONMENTALLY-ASSISTED FATIGUE (EAF) (Continued)**

- > **THE APPLICANT IS TO PROVIDE DETAILS OF  
THE ISI PROGRAM FOR NRC STAFF'S  
REVIEW AND APPROVAL PRIOR TO THE  
PERIOD OF EXTENDED OPERATION, IF  
OPTION 4 IS SELECTED**
- > **REVISION OF THE UFSAR SUPPLEMENT IS  
CONFIRMATORY ITEM 4.3.2-2**

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## **SECTION 4.4 - ENVIRONMENTAL QUALIFICATION**

- **APPLICANT'S EQ PROGRAM CONSISTENT WITH GALL**
- **STAFF CONCLUDED EQ PROGRAM WILL CONTINUE TO MANAGE EQUIPMENT IN ACCORDANCE WITH 10 CFR 50.49, AND MEETS 10 CFR 54.21(C)(1)(iii)**
- **GSI-168, "ENVIRONMENTAL QUALIFICATION OF LOW-VOLTAGE INSTRUMENTATION AND CONTROL CABLES"**
  - **STAFF ISSUED RIS 2003-09, ON MAY 2, 2003**
  - **ISSUE IS CLOSED**
  - **NO ACTION IS REQUIRED**

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## **SECTION 4.5 - CONCRETE CONTAINMENT TENDON LOSS OF PRESTRESS**

- **PRESTRESS LOSSES ESTIMATED FOR 60 YEARS**
- **STAFF FINDS ESTIMATION REASONABLE**
- **STAFF CONCERN - GROUTED TENDONS - TENDON MONITORING NOT POSSIBLE**
- **APPLICANT AGREED TO PERFORM TWO TESTS SIMILAR TO STRUCTURAL INTEGRITY TESTING (SIT) DURING PEO AT DESIGN BASIS ACCIDENT PRESSURE (DBA)**
- **MEASUREMENTS AND OBSERVATIONS - VERIFY GROSS BEHAVIOR OF CONTAINMENT**

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## 4.6 - OTHER TLAAs

### SECTION 4.6.1 - THERMAL AGING EMBRITTLEMENT AND LEAK BEFORE BREAK

- THE APPLICANT EVALUATED THE VALIDITY OF THE LEAK-BEFORE-BREAK (LBB) ANALYSIS OF THE MAIN LOOP PIPING FOR THE PERIOD OF EXTENDED OPERATION
- LBB ANALYSIS INCLUDED THE EFFECTS OF THERMAL AGING ON THE FRACTURE TOUGHNESS PROPERTIES AND CRITICAL CRACK SIZE ANALYZED FOR CASS MATERIALS
- THE STAFF REVIEWED THE LBB ANALYSIS AND FOUND IT ACCEPTABLE

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## SECTION 4.6.2 FOUNDATION PILE CORROSION

- RNP STEEL PILES ARE UNDER THE CATEGORY 1 STRUCTURES
- APPLICANT COMPARED MATERIAL AND ENVIRONMENT TO EPRI REPORT, TR-103842
  - CONCLUSION: CORROSION INSIGNIFICANT
- RNP STEEL PILES ARE IN UNDISTURBED NATURAL SOIL, AND THEY ARE NOT APPRECIABLY AFFECTED BY CORROSION DUE TO THE DEFICIENCY OF OXYGEN.
- STAFF FINDS THE TLAA FINDING ACCEPTABLE

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## **SECTION 4.6.3 - ELIMINATION OF CONTAINMENT PENETRATION COOLERS**

- **CONCRETE TEMPERATURE AROUND CONTAINMENT PENETRATION REMAIN BELOW 200°F.**
- **APPLICANT WITHDREW THE TLA AND RESPONSE OF CONFIRMATORY ITEM 4.6.3-1 WILL ADDRESS THE ISSUE**

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## **SECTION 4.6.4 - AGING OF BORAFLEX**

- **LICENSE AMENDMENT WAS SUBMITTED TO ELIMINATE CREDIT OF THE BORAFLEX PANELS FROM RNP TECHNICAL SPECIFICATIONS**
- **PANELS ARE NOT NEEDED TO MAINTAIN  $K_{eff}$  FOR THE GEOMETRY OF THE SPENT FUEL RODS**
- **STAFF IS REVIEWING THE AMENDMENT APPLICATION**
- **CONFIRMATORY ITEM 4.6.4-1 ADDRESSED, IF THE AMENDMENT IS NOT APPROVED OR IS DELAYED FOR APPROVAL BEYOND NOVEMBER 2003, APPLICANT WILL SUBMIT AGING OF BORAFLEX TLA AND BORAFLEX MONITORING PROGRAM**
- **REVIEW OF PROGRAM WILL BE INCLUDED IN FINAL SER. IF NECESSARY**

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