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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

5 (ACRS)

6 PLANT LICENSE RENEWAL SUBCOMMITTEE

7 + + + + +

8 WEDNESDAY,

9 JUNE 11, 2003

10 + + + + +

11 ROCKVILLE, MARYLAND

12 The Subcommittee met at the Nuclear Regulatory

13 Commission, Two White Flint North, Room T2B3, 11545

14 Rockville Pike, at 8:30 a.m., Mario V. Bonaca,

15 Chairman, presiding.

16 COMMITTEE MEMBERS:

17 MARIO V. BONACA Chairman

18 F. PETER FORD Chairman

19 THOMAS S. KRESS Member

20 GRAHAM M. LEITCH Member

21 DANA A. POWERS Member

22 VICTOR H. RANSOM Member

23 STEPHEN L. ROSEN Member

24 WILLIAM J. SHACK Member

25 JOHN D. SIEBER Member

1 ACRS STAFF PRESENT:

2 RALPH CARUSO

3 OTHER NRC STAFF PRESENT:

4 STEWART BAILEY

5 WILLIAM (BUTCH) BURTON

6 BARRY ELLIOT

7 JOHN FAIR

8 PAUL GILL

9 DAVID JENG

10 STEVE JONES

11 CHERYL KAHN

12 PT KUO

13 SAM LEE

14 MUHAMMAD RAZZAQUE

15 PAUL SHEMANSKI

16 WAYNE WALKER

17 ALSO PRESENT

18 PHILIP DiBENEDETTO OPPD

19 FRED EMERSON NEI

20 SUDESH GAMBHIR OPPD

21 JOE GASPER OPPD

22 KEN HENRY OPPD

23 JOHN RYCYNA CNS

24 BERNIE VAN SANT OPPD

25 BILL WALTON Dominion

I-N-D-E-X

Opening Remarks - M. Bonaca, ACRS	4
Staff Introduction - P.T. Kuo, NRR	5
Omaha Public Power District Presentation	11
Joseph Gasper, OPPD	
Bernie Van Sant, OPPD	
Overview and Status of Open Items Related to License Renewal of Ft. Calhoun	59
Butch Burton, NRR	
SER Chap. 2: Scoping and Screening Methodology and Results and Inspection	95
Butch Burton, NRR	
Wayne Walker	
SER Chap. 3: Aging Management Programs and Review Results, Aging Management Review Inspection	112
Butch Burton, NRR	
SER Chap. 4: Time Limited Aging Analysis Overview and Pressurizer Weld Repair	181
Butch Burton, NRR	
Barry Elliott, NRR	
Improvements to Generic License Renewal Guidance Documents	221
Bill Watson, NEI	
Subcommittee Discussion	251

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

2 8:32 p.m.

3 CHAIRMAN BONACA: On the record. Good
4 morning. This meeting will now come to order. This
5 is a meeting of the Advisory Committee on Reactor
6 Safeguards, Subcommittee of License Renewal. I am
7 Mario Bonaca, Chairman of the Subcommittee.
8 Subcommittee members in attendance are Tom Kress,
9 Victor Ransom, Jack Sieber, Graham Leitch, Dana Powers
10 and William Shack.

11 The purpose of this meeting is to discuss
12 the license renewal application for the Fort Calhoun
13 Station, Unit 1 and the NRC Staff's Initial Staff
14 Evaluation Report. The Subcommittee will hear
15 presentations by and hold discussions with
16 representatives of the NRC staff, the Omaha Public
17 Power District and other interested persons regarding
18 this matter.

19 The Subcommittee will gather information,
20 analyze relevant issues and facts and formulate
21 proposed positions and actions as appropriate for
22 deliberation by the full committee. Ralph Caruso is
23 the Designated Federal official for this meeting.

24 The rules for participation in today's
25 meeting have been announced as part of the notice of

1 this meeting previously published in the Federal
2 Register on May 27, 2003. A transcript of the meeting
3 is being kept and will be made available as stated in
4 the Federal Register Notice. It is requested that
5 speakers first identify themselves and then speak with
6 sufficient clarity and volume so that they can be
7 readily heard.
8 We have received a request from a
9 representative of Nuclear Energy Institute ("NEI") for
10 time to make a presentation regarding improvements to
11 generic license renewal guidance documents and time
12 for this presentation has been included in the agenda.
13 This is the first application that relies
14 on standard format and relies heavily on the GALL
15 Report so we have a special interest in this
16 application. With that, we will proceed with the
17 meeting. I call upon Mr. Kuo of the Office of Nuclear
18 Regulation to begin. Mr. Kuo.
19 MR. KUO: Good morning, members of the
20 Committee and thank you, Dr. Bonaca. Today the Staff
21 will brief the Committee on the results of the safety
22 evaluation of the Fort Calhoun license renewal
23 application. We also have people from Robinson and
24 from Dresden and Quad City tied up on the telephone
25 line. They are listening to this presentation.

1 The project manager for the safety review
2 of this application is Mr. Butch Burton. He is
3 sitting on my far right. We also have Dr. Sam Lee who
4 is the Second Chief for License Renewal section who is
5 sitting on my right. Mr. Barton will be making the
6 presentation for the Staff on the result of the safety
7 evaluation but with the support of the technical
8 staff. Most of the key technical staff are sitting in
9 the audience and ready to answer any questions the
10 Committee may have.
11 We have also invited the region's team
12 leader for the Fort Calhoun inspection, Mr. Wayne
13 Walker. He is sitting in the audience right now but
14 he will be making the presentation sometime during the
15 presentation. As you pointed out, Dr. Bonaca, the
16 industry representative, Bill Walton, will make a
17 presentation on the format and content of the
18 application at the end of the Fort Calhoun
19 presentation.
20 This standard format as you know will be
21 used for all the future license renewal applications.
22 With that, if you don't have any questions for me, the
23 presentation will start with Fort Calhoun. I will
24 turn over this presentation to Fort Calhoun right now.
25 CHAIRMAN BONACA: Good. Let's proceed.

1 MR. GAMBHIR: Can I speak from here? Is
2 this okay? My name is Sudesh Gambhir. I'm from Fort
3 Calhoun Station. I'm the Division Manager of Nuclear
4 Projects. I have the oversight responsibility of the
5 license renewal project plus a couple of other
6 projects that we are doing at Fort Calhoun Station.
7 Mr. Chairman and the Members of the
8 Committee, we very much appreciate this opportunity to
9 provide you with highlights from our license renewal
10 application. That part of the presentation will be
11 made by Bernie Van Sant who is sitting by me here.
12 Bernie is the Licensing Manager for all license
13 renewal applications and part of Bernie taking over we
14 had Dr. Joe Gasper leading this project for us. Joe
15 will also make a presentation. Bernie is a little bit
16 under the weather. So we do have a standby, Ken
17 Henry, just in case Bernie feels like he needs some
18 help in that area.
19 The team for Fort Calhoun Station license
20 renewal project consisted of members of Fort Calhoun
21 Station who were experienced at Fort Calhoun. Then we
22 also brought in Constellation Nuclear Services ("CNS")
23 to help us with the application. The people who came
24 and worked with us were the same folks who were
25 involved with the Calvert Cliff application. So it

1 gave us a very strong team to put together a quality
2 document which most of you have had a chance to review
3 it. That's what we'll be providing you the highlights
4 on.
5 Just a little bit about Fort Calhoun's
6 performance today, over the years we have made
7 substantial improvements in performance. The
8 foundation for going forward is based on an excellent
9 material condition of Fort Calhoun Station. We have
10 a very nice operating record. We were also recently
11 recognized for that by INPO for strength in the
12 material condition and strength in the people
13 ownership. With that, I'm going to turn it over to
14 Dr. Gasper to provide an overview of our license
15 renewal application.
16 MR. LEITCH: Sudesh, just one question.
17 It seems to me that Fort Calhoun may be unique in it
18 is, I believe, a single unit.
19 MR. GAMBHIR: That is correct.
20 MR. LEITCH: And it's still completely
21 owned by Omaha Public Power District ("OPPD"). It's
22 a fairly small unit.
23 MR. GAMBHIR: That is correct.
24 MR. LEITCH: I guess one wonders in
25 today's environment of multiple unit sites, bigger

1 units, whether the long term financial viability is
2 there and whether those pressures have in any way
3 impacted your ability to maintain the plant both now
4 and into the future. So I for one am going to be
5 interested in that. I don't know if you have any
6 comments. It's not really a question. It's just an
7 observation. I don't know if you have some comments
8 on that now.
9 MR. GAMBHIR: I can certainly address that
10 at this point and if there are more questions, I'll be
11 glad to address that. Fort Calhoun, it is true that
12 we are smaller unit. But on the positive side, the
13 unit is fully paid for. Our decommissioning fund is
14 fully paid for, just about paid for. I think there
15 are a few little things here and there that we need to
16 do. At this point, it's a great asset for people in
17 Nebraska as well as OPPD.
18 Our Board members, the people who own us
19 because we are owned by the State of Nebraska, they
20 have shown quite a confidence in what we are doing.
21 Besides license renewal, there have been
22 authorizations to do several other things. If you
23 look at our budget, it will give you no indication as
24 to if this being a small unit or financial liability
25 is any consideration at all there. It's the

1 performance of the plant which will decide the future
2 of the plant.
3 We are one of the founding members of the
4 Utility Services Alliance ("USA") and we are very
5 active in the USA. As you know, there are several
6 plants that they have teamed together. Besides Fort
7 Calhoun Station, we do have Wolf Creek, Susquehanna,
8 Cooper, DC Cook and Columbia Generating Station. What
9 we get to do in there in the process besides sharing
10 resources when we need it during the outages is we
11 also get to share a lot of experiences.
12 As a matter of fact very recently, we did
13 an assessment based on Davis-Bessie and that was
14 initiated more as a part of looking at the performance
15 and the safety culture. I did notice that on your
16 agenda I believe for the day after tomorrow you are
17 hearing from Fermi who is a part of USA. You will
18 hearing from Bill O'Connor on the safety culture
19 assessment that has been done for the USA. It's
20 tomorrow actually. I've seen that presentation and
21 I've been part of that.
22 I'm a member of the USA Alliance Board and
23 that has helped us. But the real future of the Fort
24 Calhoun is as we decided our performance. I think
25 that's very clear. I can share the results from our

1 last evaluation but when you look at things like
2 stakeholder confidence, we have strength in the area
3 of stakeholder confidence. We have strength in the
4 area of owner of the plant.
5 We made a lot of investment in improving
6 the material condition of the plant. I can say with
7 pride that we have operated the plant extremely well.
8 We had the last forced outrage that was caused because
9 there was an equipment problem in 2000. That was the
10 only outage since June 1998.
11 So when you look at the investment that
12 has been made, we have on the books several projects
13 that we are going to be doing and several improvements
14 that we're doing. All those things have been approved
15 in principle by the Board. We do have several
16 contracts that have been signed.
17 I don't know if that gives you any comfort
18 there or not. But for Fort Calhoun and OPPD, the
19 diversity of the fuel is an extremely important issue.
20 Yesterday I believe The USA Today had an article about
21 that the price of electricity is because of the gas.
22 Fort Calhoun will stay as a really good asset for
23 OPPD.
24 MR. LEITCH: Thank you.
25 DR. GASPER: Good morning. I'm Joe

1 Gasper, Manager of Major Projects for Fort Calhoun
2 Station. I've been with OPPD since 1974 and I was
3 Project Manager License Renewal from 1999 through
4 August of last year. I went through the process of
5 preparing the application, getting it submitted, etc.
6 before I turned it over to Bernie and took over some
7 other projects for Sudesh. Next slide.
8 We discussed earlier Fort Calhoun was the
9 first application that was based on the Standard
10 Review Plan ("SRP") and GALL. OPPD was an active
11 participant in the NEI, NRC GALL Demonstration Project
12 that occurred in 2000 and 2001. We were the Plant X
13 demo at that time. Based on that project, we, being
14 the Class of 2002, came away with an understanding of
15 what the format of the application was based on that
16 demo.
17 We submitted an application in January
18 2002. In February, we met with the Staff and the
19 reviewers. Based on that meeting, it was determined
20 that some revisions to the application were needed and
21 some revisions of the format were needed for the
22 Staff's review. Based on that, we worked with Butch
23 and came up with the changes in the format in late
24 February or early March. We submitted a revised
25 application based on that format in April.

1 The two major changes to the application
2 at that time were that the original application did
3 not contain a link between the Section 2 tables and
4 the Section 3 tables, Section 2 tables being the
5 equipment list and the Section 3 tables being the
6 result of the Aging Management Reviews ("AMR"). Those
7 links were inserted in the application and put in so
8 the links could be made. Next slide, Tom.
9 The second change in the format was that
10 for each of the sub- structures and components within
11 Section 3 of the application such as the reactor, the
12 reactor internals, steam and power conversion, etc.
13 We broke the Section 3 tables into three parts: the
14 first part being those systems, structures and
15 components ("SSCs") that had aging management programs
16 ("AMPs") that exactly matched the GALL; the second
17 part being the plant- specific SSCs and plant-
18 specific aging management programs; and then the third
19 portion of it being those aging management programs
20 that were credited for SSCs that were not listed in
21 GALL but had the same materials, the same environment
22 and same aging management program as is discussed in
23 the GALL. That is the method we decided upon to break
24 out Section 3 to clarify the relationship between our
25 application and the GALL. Next slide.

1 In the Section 3 and Appendix B of the
2 application broke down the aging management programs
3 in three types: first, those that are exactly
4 consistent with the GALL and matched the ten criteria
5 that are discussed in the GALL; second, those programs
6 that are basically consistent with the GALL but in
7 some cases we made either additions or deviations in
8 the ten criteria that were covered by the GALL; and
9 third, plant-specific programs that were not included
10 in the GALL. That was the basis of the format that we
11 went forward with and submitted in April 2002. Next
12 slide, Tom.
13 MR. LEITCH: When you say "not consistent
14 with the GALL", you don't really mean that there's a
15 conflict with that and the GALL.
16 DR. GASPER: No, there was not conflict.
17 MR. LEITCH: It's beyond what's prescribed
18 in the GALL.
19 DR. GASPER: They were the plant-specific
20 programs. In other words, they were programs that
21 were not discussed in the GALL. That would be a
22 better way of saying it.
23 MR. LEITCH: Okay.
24 MR. VAN SANT: Good morning. I'm Bernie
25 Van Sant. I'm Licensing Project Manager. I've been

1 with OPPD since 1982in various capacities in design
2 engineering. I've started work with Joe on the
3 license renewal application and he turned over a very
4 good product to me so a lot of the credit for this
5 goes to Joe. I'm going to go through the overview of
6 the application.
7 What I want to cover here is to go through
8 some of the information out of scoping and screening,
9 aging management, time limited aging ("TLA"),
10 information that was unique or different for Fort
11 Calhoun Station. Our project manager, Butch Burton,
12 will be covering these areas in detail as part of his
13 so we just want to pick up the highlights.
14 Then we'll continue on and identify the
15 interim staff guidance that were applicable to our
16 application. We will finish up with the commitments,
17 open items, confirmatory items and a summary of the
18 operating experience ("OE") that Sudesh had touched on
19 earlier. Next slide.
20 As part of the scope and screening
21 process, I wanted to touch a little bit on the
22 relationship between the Fort Calhoun Station quality
23 control classifications and how that related to the 10
24 CFR 54.4 three scoping criteria. When we did the
25 review against the 10 CFR 54.4 criteria, the math was

1 pretty much identical between the three areas and our
2 quality classifications.
3 As you can see up there for the Criteria
4 1 which is the safety related components, it matches
5 up with our quality classification of critical quality
6 elements ("CQE"). For Criteria 2, the non- safety
7 related can affect safety or support safety related
8 actions. It matches up exactly with our limited CQE
9 or limited quality control element classification.
10 Finally, for the regulated events, there's essentially
11 components from all three of the safety
12 classifications that are credited as part of the
13 Criteria 3 or regulated events.
14 MR. LEITCH: Bernie, I understood you to
15 say that safety-related is almost equal to critical
16 quality equipment or did you say exactly. Is there a
17 difference?
18 MR. VAN SANT: It is "equal to". The
19 equal sign up there is correct. If I said almost,
20 that was not correct.
21 MR. LEITCH: Okay. Thank you.
22 MR. VAN SANT: Next slide, Tom. The way
23 our process scoped and screened was we used the inputs
24 identified in the screening process and for the
25 mechanical and electrical systems, our plant

1 equipment, database and Q-List have all the quality
2 classifications for the tagged components at Fort
3 Calhoun Station. There's approximately 76,000
4 components in that database. What we did is for
5 mechanical and electrical we took all the safety
6 classifications and for anything that was a critical
7 quality element or Criteria 1 or Criteria 2, limited
8 critical quality element that was automatically
9 included in the scope of the license renewal.
10 Then we took the non-CQE and evaluated
11 them against all three criteria to make sure there
12 wasn't any inconsistencies in the way they had been
13 classified for QA purposes. So for all intents and
14 purposes, we took all CQE and limited CQE and then we
15 screened the non-CQE to make sure it didn't fit one of
16 the criteria listed above. If it did, then we put it
17 in scope of license renewal.
18 MR. ROSEN: You mentioned that you did
19 that to tag components. Do you have any non-tagged
20 components? If so, how do you handle those?
21 MR. VAN SANT: The non-tagged components
22 were identified through reviews of the USARs, DBDs,
23 P&IDs, EAs and design change packages. That mainly
24 came out for the structural components. We don't have
25 tag numbers of buildings, beams, walls, etc. That was

1 the methodology that we used for those.

2 CHAIRMAN BONACA: I have some questions

3 about some items. I guess this is a good time.

4 MR. VAN SANT: Yes. Fine.

5 CHAIRMAN BONACA: One question I have is

6 pressurizer spray head not in scope. Now we have

7 already seen this before from previous applications

8 but I have a question here. In the description, it

9 says that in order to bring the plant to cold shut

10 down for Appendix R, you need one of several methods

11 to cool down and to pressurize. One approach is the

12 spray head, I guess, through auxiliary spray supply

13 through by the CVCS.

14 A second approach is to use open and pure

15 PORVs. A third one is primary site of pressurization

16 by SES charging and decay heat removal by steam

17 generator safeties. You excluded the spray head

18 because you have these other alternate means of

19 cooling. The staff accepted it. I have a question.

20 Isn't there a primary means of cooling that the

21 operator depends on and isn't it the one that he

22 depends on typically to pressurize the spray head?

23 MR. VAN SANT: Yes, during normal

24 operations, they use the pressurizer spray.

25 CHAIRMAN BONACA: I can say that

1 legalistically you can't even bleed or feed. But
2 that's really not what you want to do. I'm trying to
3 understand the logic behind the exclusion of some
4 components based on a backup way of cooling and the
5 pressurizing.
6 I would like hear from the staff too the
7 point of the order on that because you accepted it.
8 I know we accepted it for a previous application.
9 Still every time I look at it I get heartburn so I
10 have to try to fix that. I want to ask your view.
11 MR. KUO: During our presentation, we'll
12 address that.
13 CHAIRMAN BONACA: I need to understand
14 what we rely on when you talk about processes or
15 approaches that are in the procedures that we depend
16 on for meanings of the requirements. Is any backup
17 way acceptable or do you have to depend on a primary
18 way and then somebody tells me that they are very
19 familiar with doing the process other ways and I can
20 buy it but I want to hear about that?
21 MR. BURTON: Dr. Bonaca, let me just say
22 the issue that you bring up, our reviewer also had the
23 same concern. There was quite a bit of discussion
24 between the reviewer and the applicant on that. When
25 we get up and do our portion of the presentation,

1 we'll make sure that he comes up and explains his
2 reasons.
3 CHAIRMAN BONACA: All right. If you want
4 to, we can discuss it later. I would like to
5 certainly make sure that we talk about it because I'm
6 interested in the generic approach you are using.
7 Here's the mode of participation and clearly a usable
8 spray head is the prime of the mode. Yet we are
9 relying on some other ways and that excludes
10 components that otherwise would be in scope.
11 MR. VAN SANT: Just to add one thing. One
12 thing you need to consider too is that any type of
13 degradation of that nozzle will affect normal
14 operation of any type of degradation that's going to
15 be an impact of normal operation that will require
16 attention. So it isn't an issue that would aged,
17 degraded. One relied on for an Appendix R event would
18 not be available even though we did not credit it.
19 MR. ROSEN: What would be the indications
20 of degradation during normal operation?
21 MR. VAN SANT: You would have a loss of
22 ability to cool down as quickly as you'd seen. It
23 would more of a trending issue or previously it may
24 have required more injection time into the pressurizer
25 to achieve a cooldown. You could still do it. You're

1 going to have the water entering into the pressurizer
2 and it's going to cool it down. All the spray does.
3 It's a matter of how efficient that water cools that
4 steam space volume in the pressurizer. Even without
5 the nozzle, you will get cooldown. That's our
6 analysis basis. There is no spray distribution in
7 there.
8 CHAIRMAN BONACA: Okay, so you will
9 discuss your acceptance for that.
10 MR. KUO: The reviewer right now is not
11 here so we're not going to get it. Our presentation
12 will address that question.
13 MR. VAN SANT: Okay.
14 CHAIRMAN BONACA: I have another question
15 on scope. When I go through the SER and I can list
16 from page 243 to page 104, there is a brief review of
17 the inspection period where there are a number of
18 implementation problems, spent fuel pools,
19 discrepancies between items in scope and drawings.
20 Fort Calhoun agreed and modified the drawings to
21 include additional components. Nitrogen gas system
22 same issue. HVAC, drawing corrections, auxiliary
23 building HVAC, control room HVAC, and so on.
24 At the end of reading those sections, I
25 got the feeling that did the review of the staff

1 identify all areas where implementation was not
2 correct? I have to develop trust that in fact that
3 happened to feel that we have reasonable assurance
4 that all components that should be in scope are in
5 fact identified. So maybe the question should come to
6 you. How do you get your confidence that the items
7 that should be in scope are brought in scope when you
8 have so many cases where you just go through the
9 inspection and discrepancies and you were correct.
10 You use the same guidance that they used and you find
11 additional components within scope.
12 MR. BURTON: Okay, this is Butch Burton.
13 I can't speak to any of the specifics right now but we
14 will have all of the scoping reviewers here when we
15 start our portion of the review. We can talk in
16 general about how the reviewers approach the review.
17 Then if there are any specific questions on particular
18 components or particular systems we can answer those.
19 We can give you a general overview.
20 CHAIRMAN BONACA: You're making a
21 statement that you have reasonable confidence and we
22 have to make a statement that we have reasonable
23 confidence and so I would like to understand how you
24 got the reasonable confidence.
25 MR. KUO: We understand that and during

1 our presentation, we'll address that.

2 CHAIRMAN BONACA: Thank you. I'm done.

3 MR. VAN SANT: The next topic I would like

4 to cover is the functional realignment or regrouping

5 of components that was used to prepare the scoping and

6 screening analysis for the license application. When

7 we looked at doing the scoping and screening process,

8 we based the system reviews on the system component

9 identification.

10 In other words, the tag numbers pretty

11 much were assigned to the systems in the database.

12 When we looked at that, we found there were some areas

13 that needed to be realigned due to material

14 properties, environment properties that fit better in

15 other systems.

16 I want to make it clear that when we did

17 this realignment it was following the scoping process

18 that had already scoped the components in or out of

19 the license renewal application. At that point we

20 knew which components performed the intended function

21 for the various systems before we ever moved a

22 component from one system to another.

23 We also had checks and balances when it

24 was moved from one system to another or to a commodity

25 group to ensure that component was properly

1 transferred from one system to another. We also had
2 controls on who was able to transfer components.
3 The reasons why we realigned these
4 components or regrouped them into other systems were
5 for the bullets identified up there. Basically we had
6 commodity groups where we pulled components out of
7 systems to place in commodities.
8 We had system interface components that
9 for example may have lined up between two systems.
10 While the one component may have been in safety
11 injection for instance, it may have been in a
12 different environment than what the normal safety
13 injection environment of borated water. It could
14 possible be in demin water type environment and
15 therefore if it interfaced with the demin water system
16 we would transfer it over to demin water. Those were
17 the type of system interface issues that we addressed.
18 Also there were areas where in order to
19 get the application more closely aligned with GALL, we
20 transferred some components out of one system into
21 another because that's how GALL treated them.
22 Specifically if you look at the component cooling
23 water heat exchanges, the GALL has the components
24 identified in the system generating the heat source.
25 Our tag numbers weren't aligned that way. However for

1 purposes of GALL alignment, we transferred those into
2 the heat generating systems.
3 MR. LEITCH: Bernie, what you've discussed
4 as I understand it is systems already in scope being
5 transferred from one system to another system. Were
6 there any situations here where systems not originally
7 being in scope were added to the scope by virtue of
8 this type of a review?
9 MR. VAN SANT: No, we used this to
10 actually eliminate some systems. There were systems,
11 for example plant compressed air, where the only
12 component in that may be the containment isolation
13 valves and the piping in the containment isolation
14 valves. The only intended function for that system
15 would have been containment isolation. We created a
16 commodity group for those type of components, moved
17 that containment isolation valve and piping out of
18 there into the commodity group and then screened that
19 system out from further consideration since there was
20 no other intended function performed by it.
21 MR. LEITCH: But the part of the air
22 system adjacent to the containment was scoped with the
23 containment then. Is that it?
24 MR. VAN SANT: The seismic piping supports
25 for that system related to that component are in

1 scope, yes.

2 MR. LEITCH: Okay.

3 MR. VAN SANT: Next slide. The next slide

4 I wanted to talk about was the scoping and screening

5 process for structures. I wanted to touch here just

6 on the items for Fort Calhoun Station. They are

7 somewhat unique or different.

8 The first item up there is the condenser

9 circulating water discharge tunnel. That was brought

10 into scope because our service water dumps into the

11 circulating water discharge tunnel before it goes to

12 the river.

13 Also we have an above-ground buried fire

14 protection diesel fuel oil tank. That's somewhat

15 unique in that we have a fire protection fuel oil tank

16 on-grade but it has a masonry block wall built up

17 around it with a concrete roof. Inside that

18 structure, it's filled with sand. That's where you

19 get the terminology above-ground buried tank. It's a

20 tank on-grade surrounded by sand essentially.

21 The last one there is our safety injection

22 refueling water tank. We bring that up because it's

23 not really a tank. It's part of the ox-building

24 structure. It's a reenforced room essentially that's

25 lined and used for the refueling water storage.

1 MR. LEITCH: One of the things that's a
2 little confusing to us as we go through this is some
3 of these items show up as open items and in the
4 intervening weeks and months have been resolved. That
5 circulating water discharge tunnel I think is one of
6 those where you originally perhaps had not had the
7 discharge tunnel all the way out to its discharge to
8 the river. You had stopped the scope at some other
9 point and has not been resolved.
10 MR. VAN SANT: Yes, if you look at the
11 design basis for the Station, it doesn't credit the
12 discharge tunnel as a safety related or even credited
13 for a regulating event for the discharge of that raw
14 water. Based on that, we did not scope it in
15 additionally as a structure that's below the surface
16 of the water level in the river so it's continually
17 flooded.
18 In going over the issue with the staff in
19 the idea to follow on with what Sudesh said is it
20 going forward in the 2033, we wanted to make sure we
21 had this structure in proper condition just for the
22 operation of the plant. We went ahead and included
23 this in scope.
24 MR. LEITCH: Okay.
25 MR. VAN SANT: For the electrical system,

1 it's shown up there. We basically scoped in 20
2 systems for electrical. We identified passive
3 components out of those systems, screened them into
4 the commodity groups shown there for cable connectors,
5 electrical bus bars and the containment penetrations
6 for the electrical systems.
7 MR. LEITCH: I guess I have a similar
8 question on fuse blocks. What's the status of that?
9 There's an issue about fuse blocks, fuse clips. Could
10 you just mention where we stand with that?
11 MR. VAN SANT: We're in compliance with
12 the ISG on fuse blocks. We've had discussions with
13 the staff members on that and we've come to
14 resolution. We're implementing the ISG.
15 MR. LEITCH: Okay.
16 DR. GASPER: The fuse blocks were always
17 in scope. The aging mechanism that came up with the
18 ISG was incorporated as resolution at ISG proceeding.
19 MR. LEITCH: Okay, thanks Joe.
20 DR. RANSOM: This may a rather naive
21 question but where did batteries fall? I never saw
22 that mentioned anywhere.
23 MR. VAN SANT: Those are active
24 components.
25 MR. BURTON: Let me be clear. I just want

1 to be clear about the terminology. That's true. The
2 batteries are within the scope of license renewal but
3 they are screened out as being active because they
4 have a change in configuration or properties which is
5 the criteria for whether something is subject to an
6 AMR. So they are in scope but they are not subject to
7 aging management review because they are active.
8 MR. VAN SANT: Just to briefly go over the
9 aging management review process that we used. Joe had
10 touched on it earlier. After we scoped and screened
11 the components, we then went through and identified
12 the material and environments, looked at the aging
13 effects and identified aging effects through use of
14 the EPRI tools for mechanical and structural.
15 We looked at the GALL lessons learned and
16 identified aging effects there and also at industry
17 and plant-specific operating experience. We then
18 grouped those components into the aging management
19 programs broken down as Joe had mentioned earlier
20 between the compliance consistent with GALL,
21 consistent with deviations or plant-specific programs.
22 To give you an idea of what we meant by
23 consistent with GALL with deviations, we had some
24 programs, for instance, our cooling water corrosion
25 program. For the GALL program they included chemistry

1 requirements as part of that cooling water corrosion
2 program. Our program broke it out between chemistry
3 and cooling water corrosion as two programs. Based on
4 that, we identified that as being consistent with GALL
5 with some deviations. The requirements for both the
6 chemistry and the cooling water corrosion program are
7 a direct match for the GALL. When we say deviations,
8 that's an example of what we mean by a deviation.
9 CHAIRMAN BONACA: I have a question
10 regarding the thermal shield bolts. You had some
11 history like other plants for the same generation of
12 the loss of preload but you didn't have any experience
13 of cracking of the thermal shield, do you?
14 MR. VAN SANT: No.
15 CHAIRMAN BONACA: You did not. And then
16 you replaced a number of those bolts.
17 MR. VAN SANT: Yes.
18 DR. GASPER: Yes, we went in and did a
19 thorough inspection and retorqued and replaced as
20 necessary.
21 CHAIRMAN BONACA: And you do periodically
22 inspect them again as part of the reactor vessel.
23 MR. VAN SANT: Reactor vessel.
24 CHAIRMAN BONACA: That is not part of your
25 bolting program, is it?

1 MR. VAN SANT: No, that's part of the
2 reactor vessel internals program.
3 CHAIRMAN BONACA: Okay.
4 DR. SHACK: One of the other unique
5 features of your reactor vessel internals as you seem
6 to be lucky enough to have some good analysis on the
7 components is a flowskirt and I notice you talk about
8 swelling and cracking of that. What data do you have
9 to go on? You are doing fracture mechanics analysis
10 based on fluence but is there any data on Alloy 600
11 and the radiation system stress corrosion factor
12 fluence levels for susceptibility and behavior?
13 MR. VAN SANT: I don't have an answer for
14 you on that. I'm sorry.
15 DR. SHACK: The other unique feature for
16 Fort Calhoun are your 347 control rod drive housings
17 and Palisades has some cracking and I think you had
18 some cracking. How has that been addressed?
19 MR. VAN SANT: That's an ongoing issue for
20 current license. We are looking at doing inspections
21 weekly, inspections on the housings and last outage
22 and we're doing more inspections on the housings this
23 outage. One of the things that we've committed to the
24 NRC to do is to develop a program right now in some
25 Part 50 space to address this issue. We have a

1 commitment in the application that whatever comes out
2 of our Part 50 space, resolution of this issue would
3 be carried over in the license renewal.
4 MR. GAMBHIR: Just to answer that, we have
5 been inspecting these housings for last several years
6 now. What we do is we go in and inspect several
7 housings. So far, we have not seen any degradation
8 but that's something that we're monitoring really
9 actively.
10 DR. SHACK: I hope you had some
11 degradation once upon a time.
12 MR. GAMBHIR: We did have one. This was
13 a particular housing that was a spare housing that was
14 not vented. That's when we had a problem. Since that
15 time, what we've been doing is we've inspecting these
16 things. We do this two ways. Every outage we've
17 doing it. So we have not seen anything since then.
18 That is true we did have one.
19 Going back to your question about the
20 Alloy 600 and probably the same thing applies to the
21 corrosion question also, we do online monitoring.
22 Basically it's a noise monitoring. That's how
23 actually we had earlier detected problems with our
24 thermal shield. So there will be indications and that
25 will be monitored and in that case, it can be managed.

1 That's how we found the tunnel bolting issue.

2 DR. SHACK: Well, as I read the document

3 though it says that what you're going to credit for

4 the Alloy 600 flowskirt is a fracture mechanics

5 analysis which means that you're going to do an

6 analysis which means you need some data. I was just

7 curious where the data is going to come from.

8 MR. VAN SANT: Westinghouse is doing

9 studies for the Alloy 600 issue. They are going to

10 drive that data for us.

11 DR. SHACK: Okay, is Alloy 600 part of the

12 job or are people doing the radiations on it? I'm

13 just not aware of any data on Alloy 600?

14 MR. VAN SANT: I don't think there has

15 been any done at this time.

16 CHAIRMAN BONACA: I have a general

17 question about your perspectives on the guidance for

18 one time inspection. We have reviewed now many

19 applications and we thought that it would be

20 reasonably clear but that's a very important point.

21 When you go to and propose one time inspection versus

22 a program, I look at GALL AMP XI and 3.2 where there's

23 a definition of that and it seems reasonably clear to

24 me. I would like to get your sense. Do you feel that

25 there is clear guidance right now available to

1 determine when you would go to and propose one time
2 inspection versus a program?
3 MR. VAN SANT: I'm going to have Ken Henry
4 address this. He's the program experts for the
5 license application. Ken, step up to the mike if you
6 don't mind.
7 MR. HENRY: I'm Ken Henry. The GALL does
8 give a good description on the expectation for one
9 time inspection. It lists fairly specific criteria
10 for looking at worse case conditions identifying the
11 areas that would be most susceptible. We committed to
12 those standards that were identified in GALL so I feel
13 we have a good understanding of what the expectation
14 of the program is.
15 CHAIRMAN BONACA: So you think there is
16 enough guidance or do you think that some inferring
17 staff guidance just expanding on it could be helpful?
18 MR. HENRY: There was one issue that came
19 up during the reviews. There was some additional
20 guidance on the one time inspection for the small bore
21 pipe. I don't remember the exact criteria but there
22 was some additional guidance that we committed to. Do
23 you remember what the exact thing was, Butch? It did
24 come up during one of our audits, the aging management
25 audit.

1 MR. BURTON: Again the one time inspection
2 was one of the items in our presentation for section
3 three that we were going to specifically talk about.
4 As Ken is saying, one of the issues had to do with
5 small bore piping and our reviewer who isn't here
6 right now but he'll be here at that point of the
7 presentation had to do with turbulent penetrations as
8 well as the most susceptible locations, most
9 susceptible turbulent penetration and one other
10 aspect.
11 I can't remember exactly what it is but we
12 did capture that because we recognized that in
13 accordance with GALL and the one-time inspections,
14 those one-time inspections have to look in the right
15 places. Part of that was to make sure we laid out the
16 criteria for where those locations should be. We'll
17 talk more about that this afternoon.
18 DR. LEE: This is Sam Lee from License
19 Renewal Section. Like Butch was saying, it depends on
20 what the location is to look at like penetration areas
21 or aging effect to look at stress corrosion cracking,
22 thermal fatigue. We are actually developing a interim
23 staff guidance to add in these guidance for the small
24 bore piping in these one-time inspection program.
25 CHAIRMAN BONACA: All right. So you are

1 actually developing some additional guidance. That I
2 think may be why because in this application what I've
3 seen here in this application is a proper application
4 of the actual guidance.
5 In other cases, we have seen some debate
6 at times proposing one- time inspection in cases where
7 you know that you're going to have some degradation so
8 it doesn't make sense. It means that there is a
9 misunderstanding of what the one-time inspection is
10 about which is only to verify that we know there is
11 without respect degradation or degradation would be so
12 slow that one other fact is 60 years of alteration.
13 Thank you.
14 MR. LEITCH: Sam, that ISG is beyond the
15 set of ISGs that we've already seen. This is a new
16 ISG.
17 DR. LEE: If you look at the status table
18 that we presented to the Committee last month, it's
19 one of the ISG that's under developed. It is an
20 existing one.
21 MR. LEITCH: Thank you.
22 MR. VAN SANT: Next slide.
23 MR. LEITCH: Just one question about the
24 aging management reviews, I think Fort Calhoun has
25 experienced early on some buckling of the containment

1 liner plates. Did that drive you in any way to change
2 your aging management review at that point?
3 MR. VAN SANT: We looked at the buckling
4 that was identified. It appears to have happened
5 either during construction or shortly thereafter. We
6 performed a detailed fatigue analysis, finite element
7 analysis on that and determined that we're within the
8 stress allowables for that. We haven't done anything
9 in the way of an aging management program to address
10 that. We feel it's a design issue that's been
11 analyzed.
12 MR. LEITCH: But the buckling as I
13 understand it was more than what's predicted.
14 MR. VAN SANT: It was more than what the
15 tolerance allowed and therefore it had to be analyzed
16 as a deviation from the design standard. They went
17 back in and for that particular area did a finite
18 element analysis of it to ensure that it still met the
19 design requirements.
20 MR. LEITCH: But it didn't in any way
21 impact the integrity of the liner plate.
22 MR. VAN SANT: No.
23 MR. LEITCH: Okay.
24 MR. VAN SANT: To summarize the results of
25 the aging management review, we have 24 aging

1 management programs that we credit in the application.
2 Those are documented in Appendix B of the application.
3 The application identifies which of those programs are
4 consistent with GALL and which ones are plant-specific
5 and also which ones have deviations.
6 It also summarizes the operating
7 experience that we've had with those programs. For
8 our application, we had plant-specific programs. We
9 used the 10 criteria out of the SRP to evaluate those
10 programs and ensure that they complied with the rule
11 for aging management program. We bring this up
12 because we're one of the first plants to come through
13 and use the GALL. That's why we identify this slide.
14 Next.
15 For Fort Calhoun Station, we had fourteen
16 TLAAs total. Four of them were plant-specific TLAAs.
17 The other ten were identified as part of the review of
18 the SRP TLAAs. For Fort Calhoun, we had the
19 environmental fatigue issue for the reactor coolant
20 system piping. We have the TLAA for leak before break
21 that was credited in resolution of USIA-2 for the
22 reactor coolant system.
23 We also back in 2000 had a leak in a
24 J-groove weld on the nozzle for our pressurizer that
25 was repaired. That also was a TLAA for Fort Calhoun.

1 We have energy line break issues that became TLAA as
2 a result of crediting usage factors for our main steam
3 and feedwater piping for break selection on location
4 criteria.
5 DR. SHACK: I had a question on your
6 fatigue monitoring system which you are essentially
7 using to repressurize your surge line where you have
8 a very high computed usage factor. When you do the
9 fatigue monitoring, you get presumably much more
10 realistic cyclic histories but then you compute a
11 usage factor from that which I assume are based on
12 fairly realistic or ASME code stress levels. What
13 kind of fatigue cycle curve do you use? Have you used
14 a realistic cycle history and you're still using
15 perhaps a non- conservative fatigue life curve or is
16 everything realistic?
17 MR. VAN SANT: We're using the real life
18 operational experience to develop the fatigue cycle
19 count. Then we're doing the fatigue evaluation in
20 accordance with the NUREG regulations for 62.60 if
21 that answers your question. We have committed that as
22 part of prior to going into the period of extended
23 operation in which we're going to look at the surge
24 line. We'll ever have to replace it, repair it.
25 If they have an inspection program

1 developed that allows for inspection and deposition of
2 the fatigue usage greater than one prior to extended
3 life, then we may credit that. Additionally we're
4 changing out our pressurizer as part of our power
5 upgrade program. At that time, we'll more than likely
6 replace the line.
7 DR. SHACK: When you have the realistic
8 cycle history, do you use essentially a life curve
9 with environmental degradation or is it the code life
10 curve?
11 MR. VAN SANT: No, we have the
12 environmental fatigue correction factor applied to
13 those.
14 DR. SHACK: Okay.
15 CHAIRMAN BONACA: I have a question about
16 your Alloy 600 program. That's a new problem for
17 license renewal, isn't it?
18 MR. VAN SANT: Excuse me.
19 CHAIRMAN BONACA: The Alloy 600.
20 MR. VAN SANT: The Alloy 600, yes.
21 CHAIRMAN BONACA: It contains a lot of the
22 actions that you have to implement to this point to
23 for example CRDM cracking and the inspections. The
24 question I have is will you wait ten years before you
25 implement this program. Are you waiting for license

1 renewal or are you going to implement it before? It
2 seems to me that a lot of this stuff that is discussed
3 there is needed today.
4 MR. VAN SANT: Right. We're in the
5 process of implementing it right now and Ken can give
6 you some more detail on that.
7 MR. HENRY: It's a new formal program as
8 part of the license renewal but we have things going
9 on with Alloy 600 as an industry. A lot of the
10 activities are new per se but just the fact that it
11 has been formalized into a specific identified
12 program. Yes, it's ongoing and with the current
13 industry events and stuff, we're maintaining that
14 program ongoing.
15 CHAIRMAN BONACA: When I look at it, I
16 feel that it would be great initiation irrespective of
17 license renewal. That's really where license renewal
18 is helpful in developing some programs that may be
19 convenient to implement before you get to the license
20 renewal period. That's a real improvement in the
21 management of the inspections there.
22 MR. VAN SANT: Our intent for all our
23 programs is to get them implemented as soon as
24 feasible just because it's something that if you wait
25 ten years and then go in and try to implement you've

1 lost a lot of the history and a lot of knowledge of
2 why you are doing it. Our intent on all our programs
3 is trying to get them implemented as soon as we can.
4 CHAIRMAN BONACA: Yes. Do you feel that
5 you have enough documentation, guidance, etc. so that
6 these commitments will not be forgotten. Some of
7 these programs right now are just on paper. They are
8 just promises that you will do this or you will do
9 that.
10 MR. VAN SANT: Right.
11 CHAIRMAN BONACA: But you feel that there
12 is enough guidance for the future generations to pick
13 up and remember where the commitments came from.
14 MR. VAN SANT: Yes. We have a slide here
15 further on that talks about commitments but I'll touch
16 on it now just to say yes, we have them documented,
17 tracked and our methodology ensures that we keep those
18 commitments alive and store the basis for them.
19 MR. ROSEN: This discussion reenforces the
20 discussion we had yesterday with the Region I staff
21 about the bow wave we mentioned before. Here is a
22 case where a licensee was already in fact implementing
23 provisions of his license renewal and the staff in the
24 regions needs to be cognizant of that and on top of
25 that beginning effectively now. So the bow wave

1 begins today. It begins even before the license is
2 renewed.
3 CHAIRMAN BONACA: You have a good point.
4 We didn't sense that the region was really actively
5 looking at license renewal yet. And yet they have a
6 lot of plants that some of them already have obtained
7 renewed licenses.
8 MR. LEITCH: Calvert Cliffs.
9 CHAIRMAN BONACA: So there has to be some
10 awareness on the part of the region on what's coming
11 to them particularly because now for example this
12 application, a lot of GALL are not being inspected
13 now. The reliance is going to be on the region to
14 inspect before license renewal. Now I think I know
15 what's coming to them.
16 MR. KUO: I believe most of the regions
17 are aware of what's coming. We have had interface
18 meetings between the region called the counterpart
19 meeting. In the past, we had one in Region II and
20 then Region III. We do convey the message of license
21 renewal and how much they have picked up on this needs
22 to be seen. But yes, they are aware of this.
23 CHAIRMAN BONACA: But isn't it true that
24 now reliance on GALL increases their workload in the
25 future?

1 MR. KUO: No.

2 CHAIRMAN BONACA: What you did for

3 whatever the applicant said we are consistent with

4 GALL you did some audit to verify that.

5 MR. KUO: Yes.

6 CHAIRMAN BONACA: And then the rest was

7 left to prelicense renewal -- to verify. So there

8 seems to me some additional work that you used to do

9 that now is put off to the future and is being done by

10 those inspections.

11 MR. KUO: Actually we haven't start I

12 wouldn't call a new process but we proceduralized our

13 process to have the headquarter people to do the audit

14 early on.

15 CHAIRMAN BONACA: The headquarter people.

16 MR. KUO: Yes. The headquarter people

17 early on.

18 CHAIRMAN BONACA: At some point in the

19 future it would be good for us to understand how these

20 activities are going to be.

21 MR. KUO: Yes, as soon as this procedure

22 is formalized. Actually I would like to come before

23 the Committee and give you an overview of our process

24 so that you all know what we've been doing.

25 CHAIRMAN BONACA: Yes, we will be glad to

1 hear it.

2 MR. ROSEN: It may be useful, Mario and

3 Graham, to make some comment in our letter about this

4 point about the early implementation of the inspection

5 of these activities. I don't think we've done that

6 before. We've talked about the bow wave but always in

7 the sense that it was quite a few years out in the

8 future and it's a challenge for staff resources in the

9 future. But it's not so. It's actually a challenge

10 beginning now.

11 DR. LEE: This is Sam Lee. For the

12 existing program that's consistent with GALL, when the

13 region does the two inspections, three inspections,

14 they also inspect those today. They do not wait until

15 later.

16 MR. ROSEN: Not exactly consistent with

17 what we heard in Region I yesterday.

18 DR. LEE: I guess when Wayne Walker comes

19 up he can probably talk about the region inspection

20 and what did it cover.

21 MR. KUO: Dr. Rosen, because of that there

22 might be some deviations between regions and that's

23 why we are right now proceduralizing this process.

24 From now on, we, the headquarters, will be doing the

25 audit. The whole process is evolving and as soon as

1 we are ready, we will come back to the Committee and
2 give you an overview of all that.
3 MR. VAN SANT: The next slide we had up
4 there was just some information to identify which of
5 the ISGs that have been implemented have been
6 incorporated into our application. I won't go into
7 any detail on that. I know we're running a little
8 late unless there are any questions.
9 CHAIRMAN BONACA: Yes, the SER actually,
10 it's good. There are a lot of improvements and at
11 least, the commitments in the back is very good. Just
12 to the applicant, I have a question in general. You
13 had an application that contained a lot of
14 descriptions. Some of those elements have been
15 changed because you have agreed to change it there.
16 We are not going to go back and update the document.
17 The document remains historic.
18 MR. VAN SANT: One of the things that we
19 had as an open item was update of the Table threes in
20 the MR review. A lot of what went into that table
21 revision was things that came out to document these
22 types of issues in the application.
23 CHAIRMAN BONACA: So you think if the
24 whole staff now over the next ten years retires and
25 you have a new staff coming, they will be able to

1 understand the logic behind all things or changes, the
2 combination of the application and the SER.
3 MR. VAN SANT: Yes. The other thing that
4 we had is an effort ongoing to update our plant
5 documentation that was used in the development of the
6 application. Once we get the plant engineering
7 analysis updated that will reflect the current
8 application as shown in the SER there will be a paper
9 trail that will easily followed.
10 CHAIRMAN BONACA: Okay.
11 MR. VAN SANT: I wanted to talk here a
12 little bit about the commitment listed in the SER. It
13 consists of three different commitment types: program
14 enhancements, new programs and TLAA evaluations. This
15 is a little bit unique in that some of the previous
16 plants didn't have these commitment lists included as
17 part of the SER. We'll have them as part of the SER
18 and also they'll be included in our Appendix A update
19 to our USAR.
20 We have a commitment action tracking
21 program for all licensing commitments that OPPD Fort
22 Calhoun Station makes. These commitments will be
23 treated the same as any of our other NRC commitments.
24 What we do with the commitments once we've put them
25 into our action tracking database is we go out and

1 annotate the procedures that actually implement that
2 commitment. So that when you're in the field and you
3 look at the procedure if there's a step in there, it
4 annotated as to why that step is in there if it's
5 there for a commitment. Someone going through and
6 doing a procedure change wouldn't get rid of that
7 procedural step without knowing that there's some
8 licensing actions that would need to occur before they
9 could do that.
10 Ken Henry can give a status on where we're
11 at on implementation of these procedures. In interest
12 of time, I don't know if we want to do that. It's up
13 to ACRS.
14 CHAIRMAN BONACA: Any interest in that?
15 I think we can move on.
16 MR. VAN SANT: Okay. Just to summarize
17 the SER open items and confirmatory items, we have 11
18 open items, nine that required OPPD action with four
19 confirmatory actions. OPPD has been up here in public
20 meetings with the staff to discuss these open items.
21 We have gone over our proposed resolution for all nine
22 and I believe we have concurrence from the staff that
23 the proposed resolution is acceptable. Given that,
24 we'll go ahead and formally submit our resolution for
25 the open items, our responses to the open items. We

1 expect that we'll all those closed out here in a very
2 short period.
3 MR. LEITCH: I'm curious about the other
4 two. How are they going to be closed? Is that staff
5 actions?
6 MR. VAN SANT: Yes, staff actions. Next
7 slide, Tom.
8 MR. SIEBER: The letter you sent in dated
9 March 14, 2003, is that the resolution letter?
10 MR. VAN SANT: No. With this slide, I
11 just wanted to finish up and go over what Sudesh had
12 touched on earlier. If you look at our recent plant
13 operating experience, we've had problem performance
14 indicators from the NRC. Our NRC Problem
15 Identification and Resolution Inspection was completed
16 here back in May and showed no green or higher
17 findings. We've been recognized by INPO as having
18 excellent operation.
19 I did want to note one thing. Last year,
20 in the spring of 2002, we made a decision to shut down
21 early and replace our leaking fuel. It had been a
22 problem that we had been dealing for several years.
23 There were design problems in the manufacture of the
24 fuel that we couldn't overcome. After dealing with
25 that problem and not getting any resolution on the

1 design issue rather than run until the end of cycle,
2 we elected to shut down early, get rid of the bad
3 fuel, change fuel manufacturers and solve the problem.
4 To date on this current run, we have no leaking fuel
5 identified.
6 MR. LEITCH: You had a grid-to-rod
7 fretting problem.
8 MR. VAN SANT: Yes.
9 MR. LEITCH: Now don't you still have some
10 fuel still in service that has that same potential
11 problem?
12 MR. VAN SANT: No, sir.
13 MR. LEITCH: It's all gone.
14 MR. VAN SANT: We have changed out that
15 fuel. That was why we shut down earlier was to get
16 rid of that fuel that had that potential problem.
17 CHAIRMAN BONACA: You still have 14 by 14
18 assembly design.
19 MR. VAN SANT: Yes.
20 MR. ROSEN: What do you run the peak
21 burners on now?
22 MR. VAN SANT: Joe, do you know?
23 DR. GASPER: We are basically 1/3 batch 18
24 month cycles, pretty standard for CE type reactors.
25 I can't give you a number. We're basically pretty

1 much running the standard CE reactor fuel to fuel
2 design and fuel.
3 CHAIRMAN BONACA: So you have not
4 transitioned to 24 month cycles.
5 DR. GASPER: No, we have not switched to
6 24 month cycles. We're 18 now.
7 MR. ROSEN: So when you are on 18 month
8 cycles, you're loading cores that with energy content
9 equivalent to something on the order of 500 effective
10 full power days.
11 DR. GASPER: Yes. We fuel every 18
12 months. We're running about a 30 refueling outage and
13 we're a capacity factor of about 90 percent. It's
14 roughly 500 day cycle.
15 MR. VAN SANT: The next point I wanted to
16 make is since 1998 we've had only one forced shutdown
17 and that was due to the leak in the J groove weld on
18 the pressurizer. That's also identified as one of the
19 TLAA. Finally the last outage was when we performed
20 a reactor vessel visual head inspection and identified
21 that the top of the reactor head vessel was very
22 clean. It had no leaks from any of the nozzles.
23 We're also going to be performing that same inspection
24 this coming outage in September. Then in 2006 we do
25 plan on changing out the reactor vessel head.

1 MR. ROSEN: Have you looked at the bottom
2 at any time?
3 MR. VAN SANT: No, we have not. We have
4 no nozzle penetrations in the bottom head.
5 MR. LEITCH: I didn't quite hear. When do
6 you plan to replace the head?
7 MR. VAN SANT: 2006.
8 MR. LEITCH: So you will have another
9 inspection to do between now and then.
10 MR. VAN SANT: Yes.
11 MR. LEITCH: Do you expect to be able to
12 fully comply with the NRC Order on that topic?
13 MR. VAN SANT: Yes, we do. We're going to
14 do a full inspection on that, a volumetric.
15 DR. SHACK: Oh, it's going to be a
16 volumetric.
17 MR. VAN SANT: In 2005, yes.
18 DR. SHACK: And how many effective
19 degradation years do you have?
20 MR. VAN SANT: As of this outage, it'll be
21 just under 12.
22 MR. ROSEN: And what's the temperature?
23 DR. SHACK: They have the EDY so that's at
24 12 at 600.
25 DR. GASPER: Head temperature is slightly

1 under 600. I think it's 595 in that neighborhood.

2 MR. LEITCH: Just one question about your

3 operating experience. I read that a couple of weeks

4 ago the unit came off in a planned fashion but

5 evidently you found it necessary to file an event

6 report because you predicted that the grid voltage

7 would drop below that allowed in the tech specs. I

8 guess that leads me to two question. Is that normal?

9 It makes me think that maybe your power supply

10 connection to the grid is perhaps more fragile than

11 we're used to seeing. I was just wondering. Do you

12 always get low grid voltage when you take the machine

13 off or was it some unusual set of circumstances at

14 that time?

15 DR. GASPER: Joe Gasper. Immediately we

16 filed the report based on a computer program and

17 identified that we would anticipate the voltage issue.

18 However in talking to our distribution center, there

19 was no physical indications that there was a problem

20 on the grid.

21 Upon further investigation, we determined

22 that it's a program that was run by a regional

23 distribution council and determined that something was

24 going on in the program. There were no indications on

25 the grid itself that there was any kind of

degradation. So we filed the report because we did go into that entry but upon investigation, we didn't identify any real degradation in the grid and we have not typically seen any degradation in the grid. As a matter of fact, we added additional distribution line in the last five years to help with the distribution on the plant.

MR. LEITCH: So it's a calculation anomaly, Joe, not a real problem.

DR. GASPER: Yes, that's correct.

MR. GAMBHIR: This is Sudesh Gambhir. Just to clarify something, the unit did not come offline so this was nothing to do with the actual unit coming offline.

MR. LEITCH: I misunderstood.

MR. GAMBHIR: This is a program that we have put in place based on a problem at another plant. What we have is we predict what the voltage could be if the unit came offline. I think this was a Callaway event that happened several years ago. So this program looks at 5,000 different points on the transmission system and monitors it.

So it's a predictive tool that we use more as a conservative measure as to if there's anything we need to do. The idea is that if the unit did come

1 offline, would we have enough voltage. We're still
2 trying to learn the intelligence how you predict 5,000
3 points to make sure that you have enough voltage.
4 There is no problem with the grid. As a matter of
5 fact, there's a lot of investment made in the grid to
6 improve the situation there.
7 MR. LEITCH: Okay. Thank you.
8 MR. GAMBHIR: If I could just sum this up
9 here and I'll go back to your questions about the
10 viability of Fort Calhoun Station. That question is
11 a very good question that's been asked by many people.
12 The answer always comes back because of the reasons I
13 explained earlier. It's still a good investment for
14 OPPD.
15 Just to add a couple of things here, we do
16 have a contract in place to replace the steam
17 generators in 2006. Since this is a small
18 containment, we have to make a big hole in the
19 containment to get the steam generators in there.
20 Even though we have not seen any problem with our
21 reactor vessel head, we thought this would be a
22 prudent thing to go ahead and replace the reactor
23 vessel head also. So we are doing that in 2006.
24 Bernie earlier alluded to the fact that we
25 are also looking at replacing the pressurizer. Once

1 again we have not seen any problem but we recognize
2 that there could be problems because of what's
3 happening in the industry. So we have as a matter of
4 fact in the very final negotiation of buying the new
5 pressurizer if that happens, we'll be one of the first
6 to replace the pressurizer. It's not for a reason but
7 just as a prudent thing.
8 We're also looking at several improvements
9 on the BOP side. OPPD has made considerable
10 investment in hiring new operators. We have a
11 leadership academy that runs for four weeks and we've
12 investigated a lot of time and resources in developing
13 people. We'll have people to run the unit. All of
14 that I would say is an indication that we have very
15 good support from the corporation.
16 We also are very active in the industry.
17 You probably will see somebody from OPPD somewhere,
18 wherever we are. Part of this is fighting complacency
19 because we don't wait to be complacent. We don't want
20 to be isolated. So that's very well supported.
21 And with the questions earlier about what
22 are we going to do with these commitments, someone who
23 has worked on design basis reconstitution and tried to
24 dig out information from the plant that was built, I
25 have a personal commitment to make sure that these

1 commitments that we are making stay in our active
2 document and that information and knowledge is turned
3 over to the next generation. That's the vision that
4 we have. I don't see a developing problem at Fort
5 Calhoun Station. So the commitments we are making,
6 Dr. Bonaca, those commitments will become
7 institutionalized commitments in our process. Thank
8 you.
9 MR. ROSEN: Coming back if I can to the
10 question of this inspection by regions of activities
11 that are actually caused by license renewal, in
12 looking at the commitments table in A-5, almost all
13 the commitments are to implement the program prior to
14 the period of extended operation. That's all it says.
15 Now for a licensing document, that seems perfectly
16 appropriate to say that but in practice in reality,
17 there is a more definitive schedule than that.
18 MR. VAN SANT: Right.
19 MR. ROSEN: It would seem to me that it
20 would be useful for the Committee and certainly for
21 the regions to have more information than that bold
22 statement of prior to the period of extended
23 operation.
24 MR. HENRY: Hi, Ken Henry. We're
25 implementing stuff now, for instance like the Alloy

1 600 program. The program basis document has already
2 been developed and is in place. There are
3 recommendations in that program basis document that
4 are still need to be implemented.
5 For example, we identified approximately
6 175 procedures that needed to be annotated. At this
7 point, 106 of them have been approved and are in the
8 books. We expect the rest of them to be implemented
9 within the next months. Our goal really is to have
10 most of everything in place by the end of the year.
11 That's just a goal.
12 There are some activities for instance the
13 one-time inspections. There are some that won't be
14 done, like the reactor vessel, until the last 10-year
15 ISI inspection which happened to occur the year
16 before. Some of those type of activities will stretch
17 out but the actual procedures, documentation type
18 items, will be incorporated in the near future.
19 MR. ROSEN: There is a real world schedule
20 for doing these things, not a licensing fiction.
21 MR. HENRY: Yes.
22 MR. ROSEN: And that real world schedule
23 would be useful to the Committee and I'm sure to the
24 region. For example, just to put a cap on this, you
25 are going to perform dipaniger (PH) examinations on

1 two RCP thermal barriers some time before the period
2 of extended operation. Clearly the region would want
3 to witness that and be involved and set their own
4 procedures for reviewing it. Yet with this
5 information, they really have no indication whether
6 that's going to start tomorrow or in ten years. I'm
7 campaigning for more transparency of the actual
8 scheduling and more coordination with regions.
9 MR. KUO: Mr. Rosen, I just want to make
10 a remark here. As far as the license renewal really
11 is concerned, we don't have any requirements for the
12 applicants to implement their committed program for
13 license renewal before year 40. As you said in
14 reality if the applicant is willing voluntarily to
15 implement the programs earlier and let us know, that
16 would be great. I just want to point out that there
17 really isn't the requirement. If we would want to
18 require the applicant to do that, then it would be
19 involving a real change in that sense.
20 MR. ROSEN: I'm not suggesting that.
21 CHAIRMAN BONACA: Okay. So any other
22 questions for the applicant? If not, I think the next
23 presentation is from the staff.
24 (Pause.)
25 MR. BURTON: Good. Thanks. Can everybody

1 hear me with the microphone? Good morning. My name
2 is Butch Burton. I was the Staff's lead project
3 manager for the review of the Fort Calhoun
4 application.
5 A lot of my initial comments have already
6 been addressed. As you know, Fort Calhoun was the
7 first plant to fully implement the new GALL process.
8 If you remember when you looked at St. Lucie, St.
9 Lucie did implement certain aspects of GALL but Fort
10 Calhoun is the first plant to full implement it.
11 First, just an overview, some general
12 information. As the OPPD already mentioned, the
13 application was submitted really by letters dated
14 January 9 and April 5. The reason for the second
15 submittal was because some of the information which
16 they submitted in accordance with some of the lessons
17 learned from the demonstration when some of the staff
18 reviewers looked at the format of that, they had some
19 real problems.
20 Initially there was a complete disconnect
21 between the plant- specific structures and components
22 identified in Section 2 and the generic GALL
23 information in Section 3. When some of the reviewers
24 took a look at that who actually had to do that work,
25 they said "It's going to be really difficult for me to

1 meet the requirements of the rule" which says that
2 they need to demonstrate that plant- specific
3 structures and components are going to be adequately
4 managed. If we are going to be crediting GALL
5 programs to do that, we need to see the nexus between
6 the two. As a result, we asked them to go back and
7 provide some linkage between the two. That's what the
8 April 5 submittal.
9 Again as you've already mentioned, it's a
10 one-unit pressurizer water reactor. It has a megawatt
11 thermal stop 1500, megawatts electric about 475
12 located in Nebraska about 19 miles north of Omaha.
13 They are requesting a 20 year extension of the license
14 which will put them to 2033.
15 Again, it's the first plant to fully
16 utilize GALL. I wanted to identify some of the key
17 correspondence that we had. We issued 214 RAIs.
18 Unless I'm mistaken, this is the smallest number of
19 RAIs that we have issued for any of the applications
20 so far which we think is somewhat of an indicator of
21 some of the efficiencies that were gained.
22 MR. LEITCH: It's not as much smaller as
23 I thought it might though. Could you comment on that?
24 MR. BURTON: Sure.
25 MR. LEITCH: The other numbers I thought

1 were only incrementally higher than the 214 there.

2 MR. BURTON: I actually can explain that.

3 Because it is the first GALL plant, even with the

4 advanced work we've done and the demonstration

5 project, not all of the reviewers had been part of the

6 development process. So when they go the application,

7 there was still a number of reviewers who were still

8 not quite understanding what it was about and what

9 they were supposed to do and whether they even had

10 full confidence in the process.

11 MR. LEITCH: These RAIs were issued after

12 the April application.

13 MR. BURTON: Yes.

14 MR. LEITCH: We didn't react to the

15 January other than to say that you need to resubmit

16 for April.

17 MR. BURTON: That's correct.

18 MR. LEITCH: So the RAIs were after the

19 April application.

20 MR. BURTON: That's correct. The staff

21 needs to be confident in the process also. So what we

22 did was we gave them a little bit of leniency to say

23 if you really want to try and test this new process

24 and you want to ask some sample questions just to

25 confirm that it's doing what it says it's doing, we'll

1 allow that. So we did a few RAIs that did that. We
2 don't expect that to continue. We expect that as the
3 staff gains confidence with GALL and the process and
4 what they're supposed to do, we're going to see some
5 further reductions in those RAIs. But it being the
6 first one, we tried to give them some slack with some
7 of that.
8 DR. LEE: This is Sam Lee. Mr. Leitch,
9 you made the correct observation. For this, presently
10 we are seeing between 200 and 300 RAIs. It's pretty
11 typical. What we are looking at is we are asking
12 ourselves the same questions. Why is this still
13 happening? So Dr. Kuo just talked about, we are going
14 to develop a new process which is more efficient using
15 all this and more effectively use GALL. So we are
16 going to work on that.
17 MR. BURTON: And later on, I'm going to be
18 talking about some of the lessons learned which will
19 touch on some of the things Sam said. So we issued
20 214 RAIs in mid October. OPPD responded to those RAIs
21 in three different submittals in November and two in
22 December.
23 In addition to those RAIs, we had another
24 step in the process. Again because this was the first
25 GALL plant, we wanted to exercise a little bit of

1 flexibility from what we normally do. We do not
2 normally issue what I'm calling potential open items
3 (POIs). I think we may have done that with one other
4 plant. Actually I think it was Hatch which was the
5 first BWR that went through license renewal. But we
6 did issue another set of what we called potential open
7 items in February. Those were responded to by letter
8 dated March 14. Then finally our SER with open items
9 was issued on April 21.
10 Now what you see here is in the SER there
11 were 10 open items and four confirmatory items. This
12 is the first that you all have heard of this.
13 However, after the SER was issued, another open item
14 was created. It has to do with that pressurizer
15 nozzle J-groove weld that Bernie Van Sant talked
16 about. So in your SER when you do your count, you'll
17 see 10 open items and four confirmatory. There is one
18 additional one. A good part of our discussion in
19 Section 3 is to brief you on what that new open item
20 is and how it came about, how we're addressing it and
21 the current status.
22 We're going to talk about the inspections
23 and audits in more detail a little bit later.
24 However, just in general, as we normally do with the
25 applications, we had a scoping and screening

1 methodology audit in July whose purpose was really
2 just to look at the scoping and screening methodology.
3 If we don't have confidence in the methodology, the
4 results don't mean a whole lot. So one of the first
5 things that we try to do as early in the review as
6 possible is to get our arms around the methodology and
7 how they did what they did. We did that in July.
8 We had the scoping and screening
9 inspection in November. Out of that inspection, we
10 identified four inspection open items, all of which
11 right now are resolved. We did identify them there
12 and we'll talk about that a little bit more when we
13 talk about the scoping and the AMR inspection.
14 The AMR inspection and audit, we did for
15 two weeks in January. During that, we actually looked
16 at how they addressed the four inspection open items
17 that were identified in the scoping inspection as well
18 as the normal stuff that we do during the AMR
19 inspection. We'll talk more about that later on.
20 MR. LEITCH: There's an optional third
21 inspection that is sometimes done. Did you decide not
22 to do that at Fort Calhoun?
23 MR. BURTON: I think Wayne can talk about
24 that. I don't want to put words in his mouth but we
25 don't see any telltale things hanging out there that

1 we feel we need to go back and look at. So right now,
2 it doesn't look like we're going to have the option of
3 the third inspection.
4 Going into the SER now starting in Section
5 2.1, Scoping and Screening Methodology, this actually
6 describes the methodology that's used how they go
7 about identifying structure, systems and components
8 that are within the scope of the rule and subject to
9 an AMR. I already mentioned we did the methodology
10 audit in July.
11 The purpose of the audit was to make sure
12 that they are doing things in accordance with the Rule
13 and their own application. How they describe their
14 methodology is what they actually do onsite. As a
15 result of that, the audit team found that the
16 applicant's implementation was satisfactory. They
17 were doing it the way they described in the
18 application and in accordance with the Rule.
19 CHAIRMAN BONACA: Did you address however
20 all those exceptions that you have listed in the SER?
21 MR. BURTON: Yes. What I'm going to do is
22 when I get into Section 2.3 because a lot of your
23 questions like that I'm going to ask one of the
24 scoping reviewers, Steve Jones, who actually handled
25 a number of those RAIs that you looked at to come up.

1 Steve generated a lot of those. I'm going to ask him
2 to come up and actually walk you through exactly what
3 he looked at, how he came up with the questions and
4 how they were ultimately resolved. I'm going to do
5 that actually when I get to Section 2.3.
6 CHAIRMAN BONACA: I realize that more than
7 what was resolved is why there is nothing else to be
8 resolved.
9 MR. BURTON: Yes. What I'm going to do is
10 I'm going to talk about that in general and then I'm
11 going to have Steve talk about it because he actually
12 implemented the process that I'm going to describe to
13 you.
14 One of the issues that came up was the
15 issue of functional realignment which we've talked a
16 little bit about. When we did the methodology review
17 and audit, we found that the methodology used to
18 identify how they functionally realign components
19 wasn't very well documented. So during the scoping
20 and screening inspection, we actually sat down with
21 them and had us walk through the methodology because
22 it wasn't really clearly described in the application.
23 Subsequently, in response to an RAI, they
24 gave us a full description of how they exactly did the
25 functional realignment which Bernie shared with you

1 during the earlier discussion. We have all that
2 documented now so it's clear. Once we understood it,
3 we were okay with it.
4 These three items underneath that are
5 basically the three items Bernie talked about. Their
6 methodology functionally realigned components based on
7 similar intended functions which you are all already
8 familiar, containment isolation valves that are spread
9 out across systems. They all have the same intended
10 function so many applicants have actually created
11 their own separate system for containment isolation.
12 Some of the components were commoditized.
13 I give an example of bus bars and cables for
14 electrical systems. They cut across a number of the
15 electrical systems but they all have the function and
16 do the same kinds of things. They commoditize them
17 and group them together.
18 Some components were realigned based on
19 similar materials or environment. Again Bernie spoke
20 to this a little bit. A lot of this was generated as
21 a result of GALL. Once they started doing their
22 scoping and screening, they found that if they are
23 going to follow GALL for certain components it's
24 easier because they have similar materials and
25 environments. Even though they are in a different

1 system, usually these are heat exchanger interfaces,
2 things like that. It's easier to look at that
3 component with the other interfacing system because
4 it's going to share certain materials and
5 environments. Those are some of the issues that were
6 considered when they functionally realigned
7 components.
8 I mentioned before that during the scoping
9 inspection we identified four inspection open items.
10 This was one of them. We actually have this as a
11 confirmatory item. During the scoping inspection once
12 we identified it, we kicked it back to the reviewers
13 in headquarters to say "Look, this needs to be
14 evaluated". This is something we brought up. So we
15 generated a confirmatory item for the safety injection
16 tank level and pressure indicators.
17 Initially they were not identified as
18 being scope but they are needed to ensure a minimum
19 level in the safety injection tank and pressure. So
20 the indicators that they rely on to ensure that, we
21 felt needed to be in scope. In fact, they did bring
22 those indicators in scope. So the status of that
23 confirmatory item is closed. We found when all was
24 said and done the review and the methodology audit
25 found that the applicant's scoping and screening

1 methodology satisfied the Rule.

2 MR. LEITCH: Like the battery example we

3 were talking about before.

4 MR. BURTON: Yes.

5 MR. LEITCH: Those level and pressure

6 indicators although in scope would likely have

7 screened out as being active.

8 MR. BURTON: Absolutely right. Indicators

9 by the Rule are considered active components. So they

10 would be in scope but they would screen out and not

11 being required for an aging management review.

12 MR. VAN SANT: Butch, can I clarify one

13 thing on that? These are not the safety injection

14 tank level indicators that are credited for tech spec.

15 These essentially are used as backup for our tech spec

16 credited safety injection tank level indicators.

17 However the staff reviewers felt, and I think rightly

18 so, our current tech specs don't have any LCO criteria

19 if you go to operate on these backups. Therefore they

20 got pulled in scope because essentially they could be

21 relied on in lieu of the tech spec level indicators.

22 I just wanted to clarify that.

23 MR. BURTON: Thanks, Bernie. So that was

24 it for Section 2.1 on methodology. Going to Section

25 2.2 Plant Level Scoping Results, if you go to the

1 application the main thing in this section is a big
2 table, Table 2.2-1 that basically lists all of the
3 systems and structures and identifies whether they are
4 in fact in scope or not. So one of the things we do
5 is we go through that list of systems and structures
6 and again our focus is not to dwell on things that the
7 applicant has already identified as being in scope.
8 What we're looking at are the things that they didn't
9 identify as being in scope to see if any of them
10 should be. So we're looking for omissions primarily.
11 In this section, I want to talk a little
12 bit about the 54.4(a)(2) scoping criteria. As you all
13 know, this really came up as an issue back with the
14 hatch review when we started talking about seismic 2/1
15 and things like that.
16 Since that time, we actually issued two
17 separate interim staff guidance documents, one in
18 December that spoke specifically to how to identify
19 and treatment seismic 2/1 SSCs and then a second one
20 in March 2002 which dealt with the broader A2 issue.
21 That instrumentation and control systems ("I&C") still
22 has not issued formally. But we've had interactions
23 with the industry and we're doing the final markups to
24 get that issued. In the meantime, there is still an
25 A2 scoping criterion that needs to be looked.

1 Now when we started the review and the
2 scoping inspection, the applicant had not finished all
3 of its evaluation of A2. They had not finished all of
4 their identification. They did subsequently though
5 finish it and put it in one of their what they call
6 engineering analysis. It's a binder that actually
7 gives all of the evaluation results. They have an
8 engineering analysis ("EA") for this particular
9 criterion. As result of that, these additional
10 systems were brought into scope based on this scoping
11 criterion.
12 When a system restructure or component is
13 brought into scope, that's not the end of it. Along
14 with that, they have to bring all of the aging
15 management information for those things that are
16 brought into scope. They did do that. They
17 identified these as being in scope and brought the
18 aging management information. Staff reviewed that
19 aging management information and found it acceptable
20 and as of now the open item that was initially
21 generated with regard to A2 criterion is now resolved.
22 We feel comfortable that all of the systems that meet
23 the A2 criterion have been identified. Staff has
24 looked at the associated aging management information
25 and has found it acceptable.

1 Now when I give the status of opening and
2 confirmatory items, I need to make this clear. There
3 are actually three levels of status. There's open and
4 open technically means that the staff and the
5 applicant still have not reached resolution of the
6 issue. Resolved means that we have reached resolution
7 but that resolution has not yet formally been
8 submitted to the staff but informally through meeting
9 and telecons and stuff like that, we've agreed to
10 answer.
11 When we get that official submittal in
12 documenting that, then it goes closed. Right now,
13 this is resolved when they submit their final open
14 item submittal with the agreed-upon resolution. Then
15 this will go closed.
16 MR. LEITCH: Out of things we are
17 interested in is the efficiency of the process. I got
18 the impression from reading some of the open items it
19 appeared as though these items were brought in to
20 scope at one point in time but later there needed to
21 be another request to provide additional that is the
22 aging management information associated with these
23 items that were just brought into scope. Is that
24 correct? Was there a two step process there?
25 MR. BURTON: I don't remember the details

1 specifically of this but that is certainly possible.
2 I do know that there were instances where something
3 was brought into scope and not necessarily all of the
4 aging management information came with it. Therefore
5 we had to make another request.
6 A similar situation is when there were
7 perhaps changes made to aging management programs but
8 the FSAR supplement, the general description of the
9 program, wasn't submitted with those changes.
10 Sometimes we would have to go back and ask for the
11 actual summary description of the program. In both
12 this area as well as the aging management programs, we
13 did have a few instances of that kind of thing where
14 we had to do a couple of rounds of discussion.
15 MR. LEITCH: And that accounts in the 214
16 RAIs? In other words, that would be an RAI.
17 MR. BURTON: Actually with that kind of
18 situation, we would usually ask the RAI -- For
19 instance, if it was true in this case, we may have
20 asked the RAI having to do with A2 and they have
21 submitted this information.
22 Then I mentioned before about the
23 potential open items. A lot of those were follow-ons
24 from an RAI response. So we may have had a potential
25 open item that said "Okay, you gave us this but now

1 give us the associated aging management information."
2 Do you see what I'm saying? There were several
3 instances where you had two cycles of that kind of
4 thing.
5 MR. ROSEN: There's a system on that list,
6 Butch, that's a bit of a surprise to me. That's the
7 potable water system. What is it about the potable
8 water system that could fail a safety related system
9 if it's failed? Is it a flooding concern?
10 MR. BURTON: Actually I need to turn it
11 over to them. I don't know all the details.
12 MR. ROSEN: All right.
13 MR. VAN SANT: The way we approach the 2/1
14 was more or less as a spaces approach where we looked
15 at areas where we had safety related equipment and we
16 went in and identified all piping systems carrying
17 water and included them in scope. We didn't go
18 through and identify what portions or what systems
19 actually had the potential for it. We simply captured
20 them in scope and addressed them with an aging
21 management program.
22 MR. ROSEN: Anything that had a pipe.
23 There's no unique big tank or anything like that in
24 the plant.
25 MR. VAN SANT: There's a large tank in our

1 steam penetration room but that doesn't set over or
2 near any safety related equipment that it could
3 affect, no.
4 MR. ROSEN: In your process at any time
5 when there's fluid filled piping, is that going to be
6 in the program?
7 MR. VAN SANT: Yes.
8 CHAIRMAN BONACA: Was that the driving
9 force behind seismic 2/1 for inclusion on the most of
10 the systems here?
11 MR. VAN SANT: Yes, on a spaces approach.
12 MR. BURTON: Yes, like I said, seismic 2/1
13 started this whole thing and then we had a separate
14 draft ISG for the broader A2 question. In that and
15 what you'll see in the final ISG is that we do
16 differentiate between non-safety related systems that
17 are physically connected to safety related systems and
18 how to treat that and then we also have a separate
19 discussion on non-safety related systems that aren't
20 physically connected but there's a spacial
21 relationship and some guidance on how to identify and
22 treat those.
23 CHAIRMAN BONACA: Just on a separate note
24 which is just be aware at some point the near future
25 we want to take a break. So you choose the right

1 time.

2 MR. BURTON: You're going to make me

3 choose.

4 CHAIRMAN BONACA: Yes.

5 MR. BURTON: Oh, man. Okay. You know me.

6 I'll keep going. I'll tell you what. I'll do one

7 more slide and then we'll take a break. That will be

8 good.

9 CHAIRMAN BONACA: That's the second part

10 of the scoping. Good. Before we do mechanical, we'll

11 take a break.

12 MR. BURTON: All right. Fair enough.

13 This was not an issue but I thought you all may have

14 run across this and may have noticed this. Maybe not

15 but some of the reviewers did. It had to do with the

16 blowpipe system. What we found was there seemed to

17 discrepancy between what we were seeing the

18 description of this and in Section 3. In fact, what

19 we found was we didn't see it in Section 3 but we did

20 see it referenced as being in scope in Section 2. We

21 identified an open item to resolve this discrepancy.

22 First of all, the purpose of the blowpipe

23 system is it provides compressed air into the

24 containment during integrated leak rate tests other

25 than when they are doing that test. It's just a

1 section of penetration pipe. Other than that, it's
2 just blanked off on both ends normally.
3 In Section 2, it was identified as being
4 in scope and all that. But when you went to Section
5 3, you saw nothing about it. So we found this
6 discrepancy. We identified that as an open item. As
7 you can see, the open item is currently closed. Why?
8 Because they came back and clarified for us that the
9 components in the blowpipe are actually identified in
10 Table 2.3.2.2-1 which is the table for the containment
11 penetration and system interface system. Those
12 components are actually part of that system. They are
13 identified under bolting and primary containment
14 penetrations. But there was nothing that said "These
15 together make up the blowpipe." So we had that
16 question and they resolved it.
17 MR. LEITCH: So the blowpipe system, when
18 I first read that, I actually thought it was a typo
19 because I never heard of a blowpipe system.
20 MR. BURTON: Yes.
21 MR. LEITCH: I thought it meant blowdown
22 or something. But really it's just a blank spool
23 piece in the containment which they can hook a
24 compressor up to to pressurize a containment.
25 MR. BURTON: That's basically what it is.

1 What you said is exactly right. We had the same
2 confusion about blowpipe versus blowdown because we
3 had some other issues with the blowdown system which
4 I'll talk about after the break. There was a little
5 bit of confusion there which we had to try and sort
6 that out.
7 CHAIRMAN BONACA: Let's take a break and
8 let resume the meeting at 10:35 a.m. Off the record.
9 (Whereupon, the foregoing matter went off
10 the record at 10:18 a.m. and went back on the record
11 at 10:37 a.m.)
12 CHAIRMAN BONACA: On the record. You can
13 proceed.
14 MR. BURTON: Okay. Thanks. Now we'll go
15 into Section 2.3 which contained the results of the
16 scoping and screening of mechanical systems. First of
17 all, we're talking about mechanical systems including
18 reactor systems. Reactor systems is a broad system
19 group that actually contains three separate reactor
20 systems that I'll talk about a little bit later.
21 There are two Engineered Safety Features
22 ("ESF") systems. There are 20 auxiliary systems and
23 four steam and power conversion systems. The reason
24 why I said four instead of three is because of the
25 next thing I'm going to talk about which is the steam

1 generator blowdown system. There is blowpipe and
2 there's steam generator blowdown which people are more
3 familiar with.
4 We found that when we looked at the
5 description of the system in Section 2 there was a
6 discrepancy between what we were seeing in Section 2
7 and Section 3. So we did ask an RAI requesting them
8 to clarify the discrepancy. In fact what they came
9 back with was "Yes, there is a blowdown system. Yes,
10 it is in scope" but the components that make up the
11 blowdown system are actually an assemblage of a
12 components from other systems.
13 That wasn't clearly described in Section
14 2 so in their response they actually gave us the
15 breakdown of the components that make up the blowdown
16 system and where you can find them. The blowdown
17 nozzles are actually in the RCS table in Section 2.
18 Containment isolation valves are in the containment
19 penetration and system interface system. The piping
20 and valves did serve a pressure boundary function.
21 This is actually one of the functional realignments.
22 Those are actually in the sampling system 2.3.3.19.
23 Other pipes and valves are identified in
24 the feedwater system. So in response to our RAI to
25 clarify that discrepancy, they clarified and gave us

1 a breakdown of what the components are and where you
2 can find them.
3 I mentioned that during the scoping
4 inspection we had identified four inspection open
5 items. This was one of them and we've talked about it
6 a little bit already. The circ water discharge tunnel
7 during our review and inspection we asked the question
8 that because the raw water system actually discharges
9 through that tunnel basically of a different system if
10 that tunnel failed, could that block discharge flow.
11 Obviously that would have an impact on the raw water
12 system.
13 Again we had some discussions about that.
14 They actually made an argument as to why flow would
15 not be blocked. But as with many of our questions and
16 open items, they made plausible arguments. However to
17 be conservative, they said "Okay, you know what? That
18 may be true but let's just bring it in scope and make
19 sure we have it covered."
20 So this was one of those examples.
21 Ultimately they brought it in scope. They actually
22 made the tunnel which is going to be identified with
23 the intake structure. So they brought the aging
24 management information as part of the intake
25 structure. Staff reviewed that information and found

1 it acceptable. Right now the status is that the open
2 item is resolved.
3 MR. SIEBER: Was the grouping of including
4 the discharge tunnel with the intake structure just a
5 matter of convenience?
6 MR. BURTON: Yes.
7 MR. SIEBER: Or was there some other
8 reason?
9 MR. BURTON: No, strictly a matter of
10 convenience. I'm sorry. While I'm here, this is
11 where I wanted to address your question about how the
12 staff had a number of RAIs when they were looking at
13 the drawing and questioning things that were initially
14 identified as being omitted and brought into scope.
15 I do want to say that the RAIs that were
16 generated that's actually a good thing because the
17 staff was looking at the drawing, looking at the
18 verbiage in the application, going through all the
19 drawings. Again the emphasis is not so much what has
20 already been identified as being in scope but looking
21 at things that are out of scope and seeing whether
22 that is justified. We did that with all of the
23 mechanical systems. We went through all the drawings
24 and we did identify instances of things that were
25 questioned.

1 Now in response in some cases the
2 applicant had an argument to say why they didn't have
3 it in scope but again they would do a cost benefit -
4 I don't know what you want to call it - but they said
5 "Let's be conservative." That is one thing that we
6 found which is when we raised these questions very
7 often they took the conservative approach and said
8 "Let's just bring it in scope and evaluate it as an
9 AMR." So a number of those things fell into that
10 category. I will say that the scoping and screening
11 reviewers for the water systems, the ventilation
12 systems, they all went through that process.
13 CHAIRMAN BONACA: In some cases, however,
14 it seems more that in the implementation, they missed
15 something and you guys had to find it and they agreed
16 that it should have been in and they missed it. That
17 was why I raised the question.
18 MR. BURTON: Right.
19 CHAIRMAN BONACA: I'm not worrying about
20 where you have discrepancies, disagreements. Both of
21 you understand the logic and did debate that. That's
22 a good process.
23 MR. BURTON: Yes.
24 CHAIRMAN BONACA: I was more questioning
25 whether or not you felt that while it is a good

1 methodology who had implementation problems. That was
2 my question.
3 MR. BURTON: Okay. I can talk about it in
4 general terms but what I wanted to do because a number
5 of the RAIs that you saw were covered by actually one
6 reviewer. We had several but one of our reviewers
7 generated a number of those and I wanted him to come
8 up and walk you through his process and what he looked
9 at and how he got to the conclusions that he did. I'm
10 going to ask Steve Jones to come up and speak to you.
11 MR. JONES: I'm Steve Jones, Senior
12 Reactor System Engineering, Plant Systems Branch. I
13 was the reviewer in the scoping and screening area for
14 raw water, component cooling water, circulating water
15 and spent fuel cooling at Fort Calhoun. I guess just
16 for a perspective, I can go through one of the systems
17 component.
18 CHAIRMAN BONACA: Spent fuel component.
19 MR. JONES: Okay.
20 CHAIRMAN BONACA: That was the first one
21 that triggered my interest.
22 MR. JONES: That was a little simpler than
23 some of the other systems in reviewing. I guess from
24 experience I'm looking to see certain things are
25 captured in scope as far as makeup water systems, the

1 integrity of the fuel pool and maintaining water
2 inventory. Depending on the licensing basis, there
3 may be additional systems brought in such as forced
4 cooling or additional makeup lines.
5 In this case, there were some drawing
6 discrepancies tracing back particularly with regard to
7 the makeup system that related to the refueling water
8 storage tank and embedded pipe that connected to the
9 waste system because there's a strong interface there
10 with refueling water and purification in addition to
11 spent fuel for makeup.
12 With those drawing discrepancies, it was
13 a matter of looking at for Fort Calhoun multiple
14 versions of the same piping instrumentation drawing,
15 one for the waste disposal system, one for the safety
16 injection system and one for the spent fuel for
17 cooling system for example. In ensuring that the
18 drawings adequately encompassed pressure boundaries
19 necessary to provide that spent fuel for makeup
20 function, it involved making sure that those drawings
21 were consistent between one another. I think that's
22 pretty much the extent of the spent fuel for cooling.
23 CHAIRMAN BONACA: But you found that some
24 components or some portions were not included.
25 MR. JONES: They were not identified on

1 the drawing or at least they were inconsistently
2 identified between drawings. One drawing would
3 indicate in scope and one would be out of scope.
4 Systems where portions were out of scope included CCW
5 and raw water.
6 CHAIRMAN BONACA: That's right.
7 MR. JONES: That was a more detailed
8 evaluation because those systems go through the plant.
9 CHAIRMAN BONACA: So you concluded for
10 yourself that the methodology had been properly
11 implemented.
12 MR. JONES: Right, all the reviewers have
13 some basic understanding of what to look for with each
14 system. Then the more discrepancies you come up with
15 the deeper you're looking especially with CCW that
16 interfaced with the chemistry and volume control
17 system, RHR, all these other systems. You take it to
18 following all the flow paths to those extreme systems
19 and then going a little bit over to verify that
20 interface captures all the functions that are at the
21 pressure boundaries that need to be maintained are
22 identified.
23 CHAIRMAN BONACA: You found that in
24 general this was thoroughly done and the component
25 were in scope. There were exceptions here but you

1 feel --

2 MR. JONES: There were some exceptions,

3 right but I believe we captured them between the

4 scoping and screening review and the inspection.

5 CHAIRMAN BONACA: So there is reasonable

6 assurance that the components have been captured.

7 MR. JONES: Definitely, yes.

8 CHAIRMAN BONACA: Thank you.

9 MR. ROSEN: But I think the meaty part of

10 your question, Mario, was given that this was found in

11 these cases, what was the extent of condition review.

12 How much more broadly was the question asked and are

13 we about to approve a recommended approval of an

14 application where there was some sort of systemic

15 inaccuracy in the database?

16 CHAIRMAN BONACA: I thought I had asked

17 that question and you are giving me the answer but you

18 may want to expand on that fact. You felt that at the

19 end of the process.

20 MR. JONES: Well certainly as one

21 discrepancy comes up, you look deeper for the second

22 discrepancy. It ended up being at Fort Calhoun a full

23 scope review tracing each and every flow path and

24 identifying what functions they perform and should

25 that be in scope or not with CCW in particular because

1 there's an inventory control issue with that system.
2 If you lose too much water, the system function would
3 fail. That extends that boundary out to essentially
4 all piping.
5 MR. ROSEN: So you're saying that given
6 that you found these discrepancies and resolved them
7 in a few systems you then felt that necessary and you
8 did expand that process to all the systems. Basically
9 what we're being told and what I'm understanding is it
10 was 100 percent de novo review of all of the P&I
11 drawings to identify those components that needed to
12 be in scope.
13 MR. JONES: I can speak for myself at
14 least. On CCW, I looked at the CCW license renewal
15 drawing. Then if there was an overlaying for
16 instances in chemistry and volume control system
17 drawing, there would be a parallel drawing for CCW.
18 I would get that drawing and evaluate the interface
19 with CCW there also.
20 MR. ROSEN: Well, that's a good answer but
21 just from this one reviewer. How do we get the
22 confidence that all the reviewers did the similar
23 robust processing?
24 MR. BURTON: Yes, I guess I have to speak
25 to that. I have two ways to do that. I could either

1 have each reviewer who would basically say the same
2 thing that Steve did or I can say that as a matter of
3 process, this is nothing that is unique to Fort
4 Calhoun in the scoping and screening area. It's
5 pretty much the way it has always been done. The GALL
6 stuff is really more the aging management portion of
7 the review that is new.
8 But Steve described to you in terms of his
9 approach to the review, that is typically what we do
10 for scoping and screening. I could get another
11 reviewer who did the ventilation systems and he could
12 come but he would describe to you the same thing. In
13 this particular case, there were multiple drawings
14 that had some overlap between the systems.
15 One of the things that came up over and
16 over again is that when you saw portions of a system
17 marked in red on one drawing and then you went to
18 another drawing and saw the same system but it was not
19 in red, it was actually more problematic if you didn't
20 see it in red the first time. You know that it's a
21 system that's in scope and it should be in red and
22 it's not, then come back and say "Why is this not in
23 scope?" Usually the response was "Okay, well you're
24 looking at the wrong drawing. If you go to this
25 drawing, this is the one that is really addressing the

1 intention functions for that system." It's shown on
2 a different drawing but it's highlighted in red on the
3 drawing where the intended function is being
4 addressed. That's what came up a lot during the
5 staff's review.
6 To really get everything captured, you had
7 to look at multiple drawings all of which may have the
8 same system on it, always marked in red on every
9 drawing only on the drawing where the intended
10 function of the system was.
11 CHAIRMAN BONACA: But when you find
12 however a natural discrepancy, you are telling me that
13 the process is such that it should request of your
14 inspector to expand the review to assure in fact that
15 components are attached the way we heard from this
16 gentleman here.
17 MR. BURTON: Yes, absolutely. Does that
18 answer your question?
19 CHAIRMAN BONACA: Yes.
20 MR. BURTON: Okay so for this particular
21 item about the discharge tunnel was resolved. That's
22 all I had for the mechanical systems for scoping and
23 screening. There were no other issues or open items
24 or interesting issues to be raised that I had
25 identified to share with you.

1 The next one was structures and structural
2 components. This is a list of the structures and
3 structural components in Section 2.4. I think most of
4 these are fairly self explanatory. Building piles are
5 driven into the bedrock and the structure is on top of
6 them. It included heavy loads here and component
7 supports. Duct banks are the below ground vaults that
8 are at the junctures carrying conduits and cables and
9 stuff like that.
10 We didn't have any outstanding issues with
11 structures other than to note that as I said before
12 with bringing that circ water discharge tunnel into
13 scope. It was brought in as part of the intake
14 structure so I just made that note again there. But
15 other than that, there were really no outstanding
16 issues for structures.
17 Then we move on to electrical and I&C.
18 There were actually 20 systems and commodity groups
19 that were in scope. But because the vast majority of
20 the components were active, they all screened out. So
21 ultimately what was subject to AMR were only three
22 commodity groups in electrical: cables and connectors,
23 electrical penetration and bus bars. So out of the
24 20, that's really what came through as being subject
25 to an AMR.

1 Then we come to the issue of station
2 blackout ("SBO"). We've dealt with that ever since
3 Turkey Point and so it came up again for us. In
4 particular it came up about whether components are
5 included in scope that are needed by the Station
6 Blackout Rule to ensure a recovery path after
7 following station blackout. In fact initially, those
8 components were not in scope and we had some
9 discussion.
10 MR. ROSEN: Which components? The
11 recovery path components or all of them?
12 MR. BURTON: Yes. Components needed to
13 ensure a recovery path following station blackout.
14 I'm going to give you a before and after. This is not
15 in your packet. This is a backup slide.
16 In black is what was initially in scope.
17 As a result of our RAI to bring in additional
18 components for station blackout, that's what you see
19 in red. Basically it's the 161, 345 backfeeding
20 through -- There's a disconnect here that's now shown
21 on this one. You disconnect that and then you can
22 backfeed through these transformers from 345 and then
23 from the 161 through these two to step down to the
24 4160. So that's the additional scope of --
25 MR. ROSEN: When you say "relay housing in

1 the switchhouse" do you mean the structure of the
2 relay house or the components in the relay house or
3 what is that?
4 MR. BURTON: Go ahead. I don't think it's
5 the structure but go ahead.
6 MR. DiBENEDETTO: Phil DiBenedetto with
7 Omaha Public Power. What we indicated for this
8 drawing's purposes the relay house, we're talking
9 about your DC control power for breakers. It's the
10 components and the cabling to go with it that were now
11 included in the scope of license renewal.
12 MR. ROSEN: Is there more detail in the
13 application about the switchyard relay house
14 components?
15 MR. DiBENEDETTO: Yes. We identified
16 those as part of our cabling and connector program as
17 well as our breaker program. Breakers as you know are
18 active components which screen out. All our cable is
19 in our cable and connector program. We've identified
20 those as the DC control power as part of the SBO
21 recovery.
22 MR. ROSEN: All the way out into the
23 switchyard relay.
24 MR. DiBENEDETTO: Yes.
25 MR. BURTON: Let me again show you a

1 backup slide. This isn't in your package. I have a
2 little more detail about the exact components that
3 were brought in as part of the recovery path, some
4 cables, substation, some of the towers associated with
5 the 161, 345. Those are some of the components. That
6 stuff in red is this stuff.
7 DR. SHACK: Now SBO has been one where you
8 see that in almost all of the license renewals.
9 There's always a discussion.
10 MR. BURTON: Right.
11 DR. SHACK: Did they have the Interim
12 Staff Guidance? Would that have solved the problem?
13 MR. BURTON: Yes. This is true with any
14 interim staff guidance. When it's issued, there are
15 always those applications that are in the queue that
16 didn't have the chance to fully address it. This was
17 one of those. As we get further along, you'll see
18 these already addressed in the application but that's
19 a problem with all the ISGs when they are issued. All
20 right.
21 What I'm going to do now is that's it in
22 terms of the headquarters staff's review of Section 2,
23 Scoping and Screening stuff. The next thing is now to
24 follow on confirmatory Scoping and Screening
25 Inspection. I'm going to have Wayne Walker who was

1 our lead inspector to discuss the Scoping Inspection.
2 He's going to talk to you about scoping and screening
3 and also AMR.
4 MR. WALKER: Good morning. My name is
5 Wayne Walker. I was the team leader for the Scoping
6 and Screening Inspection. Our purpose for this
7 inspection, we conducted it as you've heard earlier on
8 November 4th through the 8th. It was a one week
9 inspection. We examined the applicant's activities
10 that supported the license renewal application. We
11 were there to determine whether the scoping and
12 screening process was successful in identifying those
13 SSCs required to be considered for aging management.
14 On my team, we had a large team. I know
15 you're familiar with the teams in the past which have
16 been approximately five people. One of the reasons we
17 had a larger team was because of this being the first
18 plant to go through the GALL. We just determined
19 early that we wanted some additional resources.
20 The unique part about this team was that
21 Butch Burton was on the team being the project manager
22 for NRR. Also we had the project manager for
23 licensing from NRR who was on this team. We just felt
24 like that was a good addition in view of the fact that
25 this is the first GALL plant.

1 Also we had a very experienced team as far
2 as knowing the Fort Calhoun Station plant. We had
3 three former resident inspectors, two of them being
4 seniors and also we had the current resident inspector
5 assist us.
6 We examined procedures and representative
7 records. We interviewed personnel regarding the
8 scoping and screening process. We sampled 22 of the
9 mechanical systems, 13 of the electrical systems and
10 nine structures including two that were not identified
11 as being within scope. I just would like to follow on
12 with what Steve talked about earlier. Anytime we ran
13 into some questions about the scoping or the
14 screening, then we would go back to NRR for additional
15 assistance in our review.
16 Much of our time which you would expect
17 being an onsite inspection was spent looking at the
18 boundary drawings, the piping and instrumentation
19 diagram ("P&IDs") and actually going out into the
20 plant and verifying those break points in the areas
21 that were included within the scope and how the
22 applicant screened those areas.
23 MR. LEITCH: Those two that were not in
24 scope, did you confirm that it was appropriate that
25 they not be in scope?

1 MR. WALKER: One of those was the switch
2 yard and they brought that back into scope.
3 MR. LEITCH: What was the other one?
4 MR. WALKER: The other one was the
5 condensate storage tank and we determined that it was
6 not in scope.
7 MR. ROSEN: As long as you raised my
8 favorite subject again, the switch yard, drawings in
9 the switch yard and particularly drawings like ones
10 that describe things in that switch yard house really
11 has been typically not done by station staff. They
12 are typically done by distribution or transmission
13 division. Those drawings are not done in accordance
14 with the provisions of Appendix B.
15 So I'm a little concerned. I'm not sure
16 I can exactly verbalize it. I'm a little concerned
17 that using them as part of this process doesn't have
18 the same robustness that using a safety related
19 drawing done under Appendix B might have. In fact, it
20 can have components that could be components out in
21 the relay house that are not shown on the drawing or
22 components that are in the relay house that are
23 showing or not connected just the way you think they
24 are. What can you say about that?
25 MR. WALKER: I probably have to let NRR

1 speak to that because the extent of our inspection in
2 the switch yard really went to the duct banks and how
3 those were being controlled and how they were being
4 drained. Other than that, we didn't do a lot actual
5 onsite inspection in the switch yards.
6 MR. BURTON: When we did the scoping
7 inspection, we were still in the process of all of
8 this SBO stuff. But one of the things that we did was
9 OPPD's representative, Phil DiBenedetto, who may want
10 to speak to some of this, did take a small number of
11 us out into the switch yard, showed us where they were
12 in the process of identifying those switch yard
13 components that were ultimately going to be coming
14 into scope and how they were considering it. I'm sure
15 he'll say "It wasn't just a paper review of these
16 non-Appendix B drawings." There was a lot of actual
17 go out and let's look. Let's look at records. I
18 think Phil can probably speak to that a little bit
19 more.
20 MR. DiBENEDETTO: Thanks, Butch. Let me
21 address that. Including the SBO in the scope of
22 review, the switch yard portion was a very extensive
23 process for us. It was a very extensive review. You
24 are absolutely right. A lot of the apparatus, the
25 materials, the components are controlled by the P&ID

1 people.

2 But Omaha Public Power District has a T&D

3 Engineering. They are still one company. They are

4 very cooperative. We spent three weeks with the T&D

5 people going through hundreds of drawings to ascertain

6 which ones applies to the recovery path here and which

7 equipment. Predominantly what we were looking for is

8 not so much the breakers and the switches and things

9 like that or the batteries, the active components

10 because we knew they were screening out.

11 But we were looking more in fact for the

12 cabling. We have a very extensive table database. We

13 were able to trace back and we have the documentation

14 contained in 47 three inch binders every purchase

15 audit, every piece of cable used at that plant, switch

16 yard in plant, out plant. It was all brought to the

17 same quality standards.

18 Regardless of whether they in the switch

19 yard call it a QA Level 1 Safety System or not, we

20 have the pedigree of that cabling. That's what mostly

21 we were interesting in because that's where you get

22 into areas of aging management concerns. Does that

23 address your concerns?

24 MR. ROSEN: Yes, part of it. In terms of

25 the pedigree of the equipment but how can you validate

1 the configuration for those for us that it is as was
2 scoped and screened in the application in that the
3 components needed for the recovery path that need an
4 aging management program?
5 MR. DiBENEDETTO: We physically did
6 walkdowns of exactly what needed to be contained or
7 included in our SBO switch yard engineering
8 assessment. Originally when we had done our screening
9 and scoping on electrical systems, we cut on the
10 secondary side of the 161, 41.60. When the ISG in the
11 staff's position in RAI came out to us and said "We
12 have to go into recovery" and everything else, that's
13 where we brought in the towers, the bolting associated
14 with the towers, the concrete pallets and structural
15 supports as well as the high voltage conductors, the
16 isophase buses, the non- segregated buses, the bolting
17 apparatus to go with that. We've identified all of
18 those and put them into the appropriate commodity
19 groups for aging management.
20 MR. ROSEN: And you have confidence that
21 the drawings that you're working off in fact have
22 walked down and proven to be accurate.
23 MR. DiBENEDETTO: Yes, sir, I was agreeing
24 with him, Butch.
25 MR. GAMBHIR: Butch, if I could add to

1 that. Maybe this is something unique with us just
2 because we are a vertical integrated company on this
3 case. The switch yard at Fort Calhoun Station is
4 actually controlled by Fort Calhoun staff. To get
5 into that, you need access and not everybody can get
6 in there.
7 MR. ROSEN: Well, the control is one
8 thing. I think that's fairly difficult.
9 MR. GAMBHIR: Right.
10 MR. DiBENEDETTO: But actually design
11 control.
12 MR. GAMBHIR: I'm going to get to that.
13 We have a system that's assigned to that. We recently
14 went through some upgrades and spent over $50 million
15 upgrading the transmission system. We had two people
16 assigned there because when we're doing the work when
17 the plant was still online, we need to make sure that
18 the drawings that we're using were accurate. They
19 will go in there and all of the testing that was to be
20 done was done by our own people.
21 We had two guys that worked in there full
22 time, working with the switch yard people. The
23 bottomline is I think there's real high degree of
24 confidence that the drawings we have for our station
25 are pretty accurate because we had people involved.

1 We learned out lessons in the past because
2 people can come in there and do things and then the
3 plant will have the consequences. I think Wayne is
4 aware of the fact that we did have an event back in
5 1993/1994 timeframe.
6 MR. WALKER: I'm not going to spend much
7 time on these. Butch has already discussed the open
8 items. These were the four open items we identified
9 from the inspection. The component cooling water,
10 components used to cool the safety injection and
11 leakage coolers. This was brought into scope by the
12 applicant. The safety injection tank level, pressure
13 indicators should have been within scope and they were
14 brought within scope.
15 The discrepancy in the license renewal
16 regarding the function of realignment, Butch talked a
17 lot of that with blowdown system and how that was
18 clarified. Then the warm water recirc path was
19 another item that we identified and was brought within
20 scope. All the inspections items are closed. We
21 concluded that the scoping and screening was conducted
22 as described in the license renewal application. The
23 documents were auditable and retrievable as required
24 by the Rule. That's all I had on scoping and
25 screening.

1 CHAIRMAN BONACA: And there was no
2 disagreement with the licensee on these issues. It
3 was more simply just finding some discrepancies and
4 correct it.
5 MR. WALKER: The one item that we had a
6 lot of discussion about was the warm water recirc. It
7 actually was discussed in their USARs. Anyway there
8 was some disagreement on whether it was needed for
9 preventing phrasolyse (PH) formation. We came on that
10 issue as per what's been done in the past in license
11 renewal, we threw into Part 50 space and the resident
12 inspectors were following up on that.
13 The applicant or licensee has now taken
14 some compensatory measures in regard to that. They
15 also have several consultants who looked at this and
16 they are in the process of making a decision on
17 whether they need to do some additional things. That
18 will be factored into the license renewal process when
19 that determination is made.
20 CHAIRMAN BONACA: Should there be a
21 guidance developed for something of this nature? It
22 seems to me that wherever we have discrepancies that
23 are occurring and they are resolved within the
24 process, then there isn't any concern. Where you do
25 have disagreements, often times it is a

1 misunderstanding or disagreements or philosophy behind
2 the scoping. So you feel that you need to develop
3 guidance for future applicants.
4 MR. BURTON: Let me speak to that in
5 general first of all and then some particulars. The
6 answer is yes and for any review not just for Calhoun,
7 when we come up with issues that are generic in nature
8 in terms of whatever the technical issue, we do work
9 to develop the interim staff guidance and put those
10 out. When we get to a technical issue and both sides
11 just disagree, we have our appeals process.
12 As you recall, we have actually used that
13 with Hatch. I don't think we've had to use that since
14 then. That is still a vehicle to try in an orderly
15 public way try to resolve some of those technical
16 issues. So I'll say we do have the processes in place
17 if we need to use them.
18 With regard to the warm water recirc,
19 again this is not the first time where staff has
20 raised issues and after discussion with the applicant,
21 we said "This really has not been resolved in Part 50
22 space yet." It needs to be resolved there first.
23 Once that resolution is in place, then they can bring
24 it in scope if it is appropriate to do so if it
25 involves an intended function that meets our scoping

1 criteria and so on.

2 That is our approach and warm water recirc

3 is just that. In fact, we just got the latest status

4 on this from the OPPD folks and I'm told that the

5 license renewal folks are going to be getting together

6 with the licensing people this week and discuss it.

7 If it turns out that there are portions of this warm

8 water recirculation path that need to be brought into

9 scope, they're going to go on and follow that up and

10 ultimately bring it in.

11 MR. KUO: Butch, if I can add to that. As

12 a general matter, whenever we have a lesson learned,

13 we will consider whether we should issue an ISG or not

14 but the staff has to determine that this issue is of

15 generic nature, not plant-specific. We don't want to

16 issue and ISG for very plant-specific nature issues.

17 If this is of a generic concern, yes, we will consider

18 issuing an ISG.

19 CHAIRMAN BONACA: All right. Thank you.

20 MR. WALKER: The second region based

21 inspections formed at the site had to do with the

22 aging management review inspection and audit.

23 MR. BURTON: I'm sorry. Wayne has skipped

24 ahead a number of slides so if you go to slide 41.

25 MR. WALKER: I just thought I'd combine

1 both of ours at once. This inspection required two
2 weeks. We went in the week of January 6th and also
3 the week of January 20th. We looked at the aging
4 effects that were identified and we were there to
5 verify that appropriate measures were taken to manage
6 those aging effects. I think that was an earlier
7 question.
8 We spent our time really focusing our time
9 on the aging management programs for the inspection.
10 The inspection team consisted of the same inspectors
11 except we had one additional nuclear reactor interim
12 and also one of the individuals was not able to come
13 back. He was on an EDO rotation so we brought in
14 another ex-senior resident for that position.
15 Again we looked at procedures and records
16 and we interviewed many of the engineers at the site
17 to discuss their aging management programs to get a
18 feel for just their knowledge and their understanding
19 of the program and what was going on. We also
20 reviewed components in mechanical and electric systems
21 and structures and fire protection.
22 Our conclusion was that the existing aging
23 management activities are being conducted as described
24 in the license renewal application. Plans for new
25 aging management activities appear acceptable to

1 manage plant aging. Obviously I know you're aware
2 from past briefing, there are programs that they have
3 not developed yet.
4 I think that gets to Dr. Rosen's earlier
5 question to maybe just talk about resources a little
6 bit. That's an outstanding idea that we need to look
7 at that resource question early on before we get to a
8 point where many of the applicants are going to come
9 in with these programs potentially all at once and the
10 regions are going to be asked to do the review on
11 those. That's going to need a huge resource to do
12 that.
13 The other point just to give you a little
14 insight into is we've had one plant previous to Fort
15 Calhoun which was ANO and then we expect ANO II to
16 come in probably in September 2004 when the actual
17 regional inspection time will be done. Unlike Region
18 2, it's been more difficult in Region 4 because of a
19 bigger training curve to do the license renewal
20 inspections. You have to bring the group up to speed
21 and with the distance between inspections, there is
22 some difficulty in maintaining a group that are
23 familiar with the license renewal process.
24 I was able to get one inspector who had
25 done the ANO inspection from Region 4 but it's also

1 difficult to share resources across regions because
2 Caudel is so busy in Region 2 with reviewing plants.
3 Now it looks like Region 3 is going to become quite
4 busy too. Maybe you already knew that but this is to
5 give you some insight into as we try and staff these
6 teams not that we don't have experienced inspectors
7 but there is somewhat of a learning curve to get up to
8 speed for the license renewal. That concludes my
9 remarks.
10 CHAIRMAN BONACA: Thank you. Any
11 questions?
12 MR. BURTON: Thanks, Wayne. That pretty
13 much concludes Section 2. So just as a summary --
14 MR. LEITCH: I did have just one question
15 before we move on. Was a significant portion of your
16 activities at the site or was it largely a paper
17 review? In other words, did you get out in the plant?
18 MR. WALKER: We did get out in the plant.
19 In fact, the resident inspector I made a point of
20 having him go out during an outage in the spring and
21 had him go out and look at various systems because
22 that was the only opportunity we would have had to do
23 that. In addition, I would say my structural
24 inspector spent 90 percent of his time out in the
25 plant looking at the structures. I think we did a

1 good job in that respect. Obviously the prep time
2 helps because otherwise if we hadn't had the prep
3 time, you just get inundated with information while
4 you are there and that hampers you from getting out in
5 the plant. I think we did a good job.
6 MR. LEITCH: Can you give us any sense as
7 to the material condition of the plant?
8 MR. WALKER: I think Sudesh made a good
9 assessment. Fort Calhoun is in very good shape for a
10 plant that has been operating almost 30 years now.
11 When you go inside containment, you're not going to
12 see a lot of corrosion problems like that. They have
13 had some problems with CCW corrosion inside their
14 steam generator areas inside the bioshield but that's
15 something they are addressing. It's a program that
16 they have on-going. This is on small bore piping.
17 They have an active painting program
18 inside containment where they are refurbishing
19 structures and equipment. Their liner they continue
20 to take care of that.
21 MR. ROSEN: Is there a screen house at the
22 river intake structure?
23 MR. WALKER: Yes.
24 MR. ROSEN: Did you go in that for the
25 safety related portion of that?

1 MR. WALKER: Yes.

2 MR. ROSEN: What's the condition of that?

3 MR. WALKER: I'm sure you've seen screen
4 houses. It's not great where you are down low over
5 where the river is coming in through the grates but as
6 far as the raw water piping and the raw water systems,
7 I think it's in good condition.

8 MR. BURTON: All right. Thanks, Wayne.
9 Other than that, just to summarize Section 2, we found
10 the methodology was consistent with the Rule. We
11 found that the scoping and screening results that we
12 have reasonable assurance that all of the structures,
13 systems and components that should be within scope are
14 within scope and are subject to an AMR. In terms of
15 the onsite documentation, it meets the requirements of
16 54.37.

17 CHAIRMAN BONACA: In this particular case,
18 you had four weeks of inspections.

19 MR. BURTON: Yes, audits and inspections.

20 CHAIRMAN BONACA: By a team of
21 approximately eight to nine people. This seems to be
22 pretty much the amount of inspection you provide for
23 each plant it seems to me.

24 MR. BURTON: Well, we did more again
25 because this was the first GALL.

1 CHAIRMAN BONACA: I thought it was more
2 because you had more people.
3 MR. BURTON: We had more people but what
4 is also true is that in particular the AMR inspection
5 the scope of the inspection was greater than what had
6 been previously done. I'm actually going to talk
7 about that when we start into Section 3 and talk a
8 little bit about exactly what was done during the AMR
9 inspection that was different from previous
10 inspections. We needed more people because we did a
11 lot more than we normally do.
12 CHAIRMAN BONACA: Good.
13 MR. BURTON: I'm ready to go into Section
14 3. I don't know if you wanted to break.
15 CHAIRMAN BONACA: Well this was the break
16 but I think it's going to be early for lunch. So I
17 would prefer that we just go ahead for a few minutes.
18 MR. SIEBER: The cafeteria closes at 1:00
19 p.m. today for the awards ceremony.
20 CHAIRMAN BONACA: That's tomorrow.
21 MR. BURTON: But there's a Commission
22 all-hands meeting today.
23 CHAIRMAN BONACA: Why don't we just
24 proceed for about 10 minutes. Then we'll take a break
25 when we're scheduled at 11:30 a.m.

1 MR. BURTON: Okay. It's not my call.

2 MR. ROSEN: There are some things you

3 don't have to decide.

4 CHAIRMAN BONACA: You are the presenter.

5 Before and after anyway, so we're not interrupting the

6 flow.

7 MR. BURTON: That's true. Let me at least

8 get started on Section 3. Section 3 is really where

9 we start to see the impact of GALL on how we do

10 business. GALL divides what I call six broad system

11 or structural groups. These numbers in parentheses

12 are important because those identify when you get into

13 the Section 3 tables which systems group you're in.

14 So you have reactor systems group, ESF, Aux systems,

15 steam and power conversion, structures and structural

16 components and electrical.

17 I'll talk in general about our review

18 process and then we can probably break out after that.

19 That would be a good point. First of all, what I

20 tried to put in the SER was to actually give the

21 reader an overview of how we review the stuff in this

22 new GALL regime. That's actually in Section 3.0.2.

23 In general, the staff's review of Section

24 3 was in three phases. Phase 1 was a review of the

25 aging management programs. When you look at the aging

1 management programs, they fall into three types.
2 There are AMPs that the applicant claims to be
3 consistent with the AMPs in GALL. There are AMPs that
4 the applicant claims to be consistent with GALL but
5 they have made some deviations from GALL. Then on the
6 next slide, there are actually AMPs that were not
7 addressed in GALL.
8 How did the staff perform its review given
9 each one of these types of AMPs. For the AMPs where
10 they claim to be consistent with GALL, we confirmed
11 that consistency during the AMR inspection. When I
12 told you that the scope of the inspection was expanded
13 beyond what was done before, this is one of them.
14 Because we didn't have GALL before, the inspectors
15 didn't have to confirm any consistency with aging
16 management programs.
17 CHAIRMAN BONACA: But that was done on an
18 audit basis.
19 MR. BURTON: Yes, we did 19 out of 24
20 aging management programs.
21 CHAIRMAN BONACA: Okay, that's a
22 significant audit.
23 MR. BURTON: I'm not sure of those five
24 that we didn't do if any of them fell into this
25 category. I can't remember but we did the vast

1 majority of them. I can definitely tell you that.

2 CHAIRMAN BONACA: Okay.

3 MR. BURTON: So that's what the inspectors

4 did. Now back here in headquarters, the reviewers

5 were still looking at Fort Calhoun. They don't call

6 it a FSAR. They call it an USAR but there is still is

7 a USAR supplement, a summary description of the

8 program. So for the reviewers back here in

9 headquarters, they had to review that summary

10 description, the USAR supplement, and make sure that

11 it was an adequate description of the program. That's

12 what we did with this class of AMPs.

13 For this class of AMPs, the ones that are

14 consistent --

15 MR. LEITCH: It sounds like you are saying

16 that GALL may have actually increased your workload or

17 perhaps shifted it from headquarters to the site.

18 MR. BURTON: Yes, and actually that was

19 the -- I'm sorry. Did you want to speak to that?

20 MR. KUO: Yes, I heard Mr. Leitch. You

21 said that GALL actually increased the workload. In a

22 sense, I think the applicant will have to prepare

23 their format according to GALL and make it easier for

24 the inspectors to read. That's the additional

25 workload that the applicant will have to assume.

1 However from the staff point of view, if
2 their plant programs aren't consistent with GALL, then
3 all we have to do is to really verify that it is
4 indeed consistent with GALL. So there is not much
5 amount of review by the headquarter staff doing the
6 technical reviewing except verifying the boundary
7 conditions that are there, the components in GALL, the
8 involvement with the SER of systems with GALL. That's
9 it.
10 Therefore what's left is only the
11 verification part. That is what I said earlier this
12 morning that we are thinking about a new process so
13 that the headquarter staff would actually go to the
14 site and do all this and verify the program there.
15 That's what we are thinking of doing so that we can
16 increase the efficiency.
17 It's just like Sam said earlier we are
18 seeing the same thing. I'm a little hesitant to say
19 that we are going to do it right away because this is
20 evolving and we haven't informed our management yet.
21 So when the timing is right, we will come to the
22 Committee and give you a full review of the whole
23 process.
24 MR. SIEBER: It seems to me that by using
25 GALL, you're predeciding what is good enough to meet

1 the minimum requirement for an aging management
2 program. So all this checking that goes on is more
3 like a clerical function until you run into the
4 exceptions.
5 MR. KUO: That is correct.
6 MR. SIEBER: And I would think a reviewer
7 would have somewhat of a reduced workload because the
8 decision-making has been made in advance.
9 MR. KUO: Exactly.
10 MR. BURTON: You bring up a very good
11 point, Mr. Sieber. One of the lessons learned that we
12 had was and some of the feedback we got from the
13 reviewers is that when you take credit for GALL and
14 everything is in accordance with GALL, perhaps the SER
15 should not dwell so much on the stuff that we know is
16 consistent but to put more of the focus on the
17 exceptions and say here's where we deviate so the SER
18 would focus more on that.
19 CHAIRMAN BONACA: I think that's what you
20 did really also in this SER.
21 MR. BURTON: Yes. And there was probably
22 a little more verbiage in this one because it was the
23 first and because again like I told you before, some
24 of the reviewers were still probing the process to see
25 if it really works. So we had some questions and some

1 review that probably won't need to be done in the
2 future. As the staff gets even more comfortable with
3 this, you'll see some of those efficiencies. That's
4 how we dealt with this class of AMPs.
5 MR. SIEBER: I think the proof of the
6 pudding will come when you do the inspection and
7 determine if the aging management program details that
8 they've established actually satisfy what was intended
9 by GALL report. The way the GALL report is written is
10 sort of a summary description of what the program
11 should be and doesn't have all the elements that are
12 necessary to have an adequate program.
13 So there's going to have to be a lot of
14 work between now and the actual date that you go into
15 the 41st year. I think that's going to be a fairly
16 large workload which is what Mr. Rosen's concerns have
17 been for the last few days and actually for the last
18 few months. Because that workload is there, everybody
19 says they can do it and we'll do it when we get to it
20 but there's going to have to be a fair amount of
21 prethinking put into that.
22 MR. KUO: Well, we do a little more than
23 that right now. What we are doing here is that the
24 headquarter staff reviews the boundary conditions of
25 the plant system program versus the GALL program.

1 Then we are asking the applicants to maintain the
2 auditable documentation on how they judge why their
3 program is consistent with GALL. So these programs
4 are onsite.
5 What we have to do really is to basically
6 trust them and then verify. We go to the site and
7 look at their program documentation to say "Ah, okay,
8 this judgement is correct. We agree with their
9 judgement." So the program is consistent with GALL.
10 That way we save a lot of our review time in
11 headquarter and also this paper passing, come and go,
12 conference calls and all that. We save right there.
13 That efficiency is achieved by doing that.
14 MR. SIEBER: Well, that has the advantage
15 of providing an auditable basis document.
16 MR. KUO: Right.
17 MR. BURTON: And in fact, because I'm
18 saying we confirm consistency. Let me give you a
19 little bit more detail about how exactly we did that.
20 What they have at Fort Calhoun onsite is a series of
21 engineering analyses as they mentioned before. Those
22 are all documented in a series of binders. They have
23 one EA for each aging management program.
24 What we did during the AMR inspection is
25 we actually took those binders. In one of the

1 chapters where they are confirming consistency with
2 GALL, what they have is a table. On the left-hand
3 side, they've broken down the ten GALL attributes line
4 by line. In the right column where they say "Here's
5 the GALL item. Here is how we are meeting it." So
6 they will identify procedures, processes, whatever it
7 is to say "Here is what we have to meet that element."
8 What we did during the inspection is we
9 said "Okay, you've have walkdown procedure SO
10 whatever. Let's go look at that." So we would go and
11 look at that. What we expected to see was one of
12 several things. Either the procedure itself already
13 has the things that it needs to have to meet the
14 element.
15 If it doesn't, we expect to see a draft
16 revision of the procedure that's going to implement
17 redline, strikeout to have the issues in there. Or if
18 they haven't gotten that far, we go to their
19 commitment tracking system because we expect to see an
20 element in there that says "Go revise this procedure
21 and make sure it has these elements in it." As
22 inspectors, that's what we were going to look at to
23 confirm consistency with each one of the GALL
24 elements. We wanted to see it's already there, if
25 there's a draft that it's going to be there or there's

1 a commitment to make the revision to make sure it's
2 there. That's the kind of thing we were doing to
3 confirm consistency.
4 CHAIRMAN BONACA: That's what will have to
5 be done before going to license renewal. During those
6 inspections, they will have to verify that all of them
7 are in the first category which for each commitment
8 there is a process.
9 MR. BURTON: Exactly. Second group say
10 they're consistent but they made some deviations. At
11 Fort Calhoun, the deviations fell into three
12 categories: enhancements; clarifications; and
13 exceptions. Enhancements is they basically took the
14 scope of the thing but they may have included some
15 additional components.
16 Clarification is where if there was some
17 area in GALL that was maybe not as clear as it should
18 be, they said "Look here's what we're going to do to
19 satisfy that particular fuzzy element in GALL." Then
20 there were some exceptions where they just said "Look
21 GALL says you should do this. Well we're not going to
22 do that. Instead we're going to do something else."
23 So how did the staff handle that
24 situation? In that particular case what the staff did
25 was each of the deviations were reviewed with the

1 intent to determine whether that AMP given that
2 deviation is still adequate to manage the aging for
3 which it's being credited. Obviously if there's no
4 deviation from GALL, you can presume whatever the
5 aging effect is that the AMP is created with managing
6 in accordance with GALL, okay, it's going to be done.
7 But as soon as you start to deviate, you need some
8 proof that it's still going to be adequate. So that's
9 what we ultimately tried to do.
10 The portions that they say are consistent
11 we did confirm the consistency during the inspection
12 just like we did before. Again headquarter staff
13 looks at the summary description of the program to
14 make sure that it's adequate.
15 The three category are plant-specific AMPs
16 that were not addressed in GALL. For that population
17 of AMPs, we went back to the old way of doing things.
18 It's reviewed against the 10 program attributes as
19 we've always done with previous applications. Also we
20 reviewed the USAR supplement.
21 I don't know that it's worth to do this
22 but because I came and briefed you guys a couple of
23 months ago and I showed you examples of AMPs in each
24 of these categories. I don't know that I need to do
25 that again. Okay. So in general for each of those,

1 that is how the staff pursued its review.

2 MR. LEITCH: Particularly in Category 2,

3 where there are deviations related to enhancements,

4 clarifications and exceptions, might that indicate

5 that there is some generic issues there that should be

6 considered in future revisions to GALL? Are you

7 considering those types of things?

8 MR. BURTON: Yes, let me give you a good

9 example. There's a steam generator program, GALL AMP.

10 The steam generator program is really there to manage

11 aging of steam generators tubes. When you read the

12 GALL, that's what it's for. One of the things that

13 this applicant did was they credited that same program

14 with managing other steam generator components. In

15 fact, we had a lot of discussion back and forth about

16 that.

17 When you read the GALL AMP, it refers to

18 guidance in NEI 97-06 but it also says "The staff has

19 not approved that yet." So the question is what does

20 that mean. How much confidence can we have in

21 something that we haven't approved yet? There's a

22 certain assumption made of what guidance is in there.

23 But if it hasn't been approved yet, it could change.

24 We got into a lot of discussion about

25 that. One of the take- aways is when we go back and

1 we do an update of GALL we need to revisit that first
2 of all make sure we understand what is the status of
3 that NEI guidance. Have we approved it by the time we
4 do the update? If we haven't, maybe we need to better
5 characterize how this can or should be addressed by an
6 applicant if in fact we haven't approved it. Do you
7 know what I mean? Things like that. We can up with
8 a number of those and we have a laundry list of things
9 we have to revisit with GALL and the SRP but that was
10 just one example. Does that answer your question?
11 MR. LEITCH: Yes.
12 MR. BURTON: That's all I have on that
13 one. That was Phase 1. First Phase 1 was to look at
14 the aging management programs.
15 CHAIRMAN BONACA: Now we need to break.
16 MR. BURTON: I'm going to get through
17 Phase 2 and 3 real quick.
18 CHAIRMAN BONACA: Yes, and then we break.
19 MR. BURTON: All right. Phase 2 was to
20 review aging management review results. This is some
21 of the stuff in the table. Again it falls into three
22 categories. There are AMRs where the applicant claims
23 to be consistent with the GALL AMRs. Again if that's
24 true, the consistency is confirmed during the ARM
25 inspection, another thing that increased scope of what

1 the ARM inspectors were doing.

2 Applicants where they claim to be

3 consistent with GALL but there are some things where

4 GALL says "You need to do some further evaluation."

5 In that case, the part that's consistent we confirmed

6 during the inspection. Back here in headquarters,

7 those things that require further evaluation the staff

8 here does that. The guidance is in the SRP to do the

9 further review as to what exactly are we supposed to

10 do and to determine whether everything was adequate.

11 Finally there are some aging management

12 reviews that are - I shouldn't say - not consistent

13 with GALL but GALL did not address. It's something

14 completely new. I don't want you to mischaracterize

15 what that means. In that case, AMR is reviewed to

16 make sure it provides adequate aging.

17 CHAIRMAN BONACA: Let me just ask a

18 question. For Category 1 where there is consistency

19 with GALL, so you went in and you checked that there

20 was in fact a procedure somewhere already developed.

21 You looked in the procedure to see that it met the

22 requirements of GALL. So partly, it's already been

23 done. For those not developed yet, it will have to be

24 done.

25 MR. BURTON: Right. I understand exactly

1 what you are saying. I thought I had a slide. Let me
2 give you an example. This is another backup slide.
3 It's not in your package. I pulled this out of the
4 application. This is Table 3.2-1. 3.2 meaning that
5 these are components in EFS systems. 3.2 was
6 engineered safety feature systems. Dash one means
7 that we are looking at a table that reflects GALL.
8 When we talked about links before, this is
9 what links you from Section 2 to Section 3. This is
10 an example where this line item in GALL requires some
11 further evaluation. We would go into the SRP to see
12 exactly what that evaluation should entail as opposed
13 to here where you can be consistent with GALL and
14 there is no further evaluation required.
15 In each case, they are saying they're
16 consistent with GALL whether there's further
17 evaluation required or not. What the inspection team
18 did was they went through and as you can see here this
19 is the aging management program at their plant that
20 they are crediting for meeting all this stuff. So
21 again part of it is we go into those binders, those
22 engineering analyses, make sure that under the scope
23 of that program these components are included. Do you
24 see what I'm saying? Does that answer your question?
25 CHAIRMAN BONACA: Yes.

1 MR. BURTON: That's what we were doing
2 during the inspection. That's how we did Phase 2
3 looking at the ARM results. Finally Phase 3,
4 initially I don't think people really recognized that
5 we had to do this but some of the reviewers came to us
6 after we got started and said "You know just looking
7 at the aging management programs and the ARM results
8 all you're doing is just doing a programmatic
9 comparison but what the Rule requires is that the
10 applicant demonstrates that their components will be
11 adequately managed." It doesn't say that they have to
12 be consistent with GALL or any of that stuff. The
13 Rule says they have to demonstrate that they will be
14 adequately managed.
15 So we realized not right from the
16 beginning of the review that the review really
17 involves several -- We'd advance and then we'd say
18 "Oh, we really need to do this." So we would have to
19 back up, train up all the reviewers and then move on.
20 Then we would say "Oh, we missed that." We would have
21 to back up, train up the reviewers and move on. So in
22 the beginning in particular, there was a lot of stops
23 and starts. This was the first one where we said that
24 there's more to it than just doing a programmatic
25 review.

1 Once we are satisfied that everything is
2 consistent, we have to go back into those Section 2
3 tables that list the individual structures and
4 components and track that through the linkage into
5 Section 3 and make sure that this component is being
6 managed correctly. I always give an example.
7 If you have a structural component that's
8 made of concrete, when you look at the plant's aging
9 management programs compared to GALL for concrete,
10 everything looks great. But if you do this last step
11 and you're looking at a specific concrete component,
12 tracking it through a link into Section 3 and you find
13 that the aging management program that being credited
14 it something for carbon steel, something is wrong.
15 And just doing a programmatic comparison, you would
16 completely miss that. This is really what's needed to
17 actually meet the Rule. That was Phase 3 and really
18 the most important phase. It's the phase that
19 actually is required to meet the Rule.
20 One last slide and then I'll let you go.
21 In this new GALL regime with everybody new to it and
22 trying to get on board, we felt that it was important
23 that we train everybody in a systematic way. For the
24 Fort Calhoun reviewers for Section 3, we didn't start
25 off that way. It was like one of the reviewers would

1 come and say "All of really need to do this." I'd
2 send an e-mail out and I'd set up a meeting and say
3 "Okay, you guys, we have to do this." Then they would
4 go off and do it until the next one came up.
5 Obviously that was not going to work real
6 well for us and it was not going to work real well for
7 all of the reviewers who were going to be doing
8 Robinson and Ginna and Summer. So we decided that we
9 needed to have both informal and formal training
10 sessions. We had several, not only for the reviewers
11 but for the contractors because a lot of the work is
12 now being done by contractors, for the inspectors and
13 even for you all.
14 Back in September, we had a half day
15 training session for the headquarters, reviewers and
16 contractors. We actually videotaped that training so
17 anybody who comes in later can look at it. That was
18 real good. In October we actually went out to Region
19 4 before the inspections and had a training session
20 for the inspectors.
21 We had Caudle Julian come from Region 2.
22 We also had Marty Farber from Region 3. We didn't
23 have Region 1. One of the things that you were
24 mentioning before in the first session about your
25 discussion with Region 1 and they seemed to have a

1 misunderstanding of some things. That may be part of
2 it. I don't know. Certainly Regions 2, 3 and 4 were
3 all involved in this training session. In fact, the
4 Region 3 inspectors who are going to be doing Drisden
5 Quad Cities, they are setting up a separate training
6 session for their inspection team early July.
7 CHAIRMAN BONACA: July 1st and 2nd.
8 MR. ROSEN: Since this is transcribed,
9 let's get it right. What our concern in Region 1 was
10 that Region 1 didn't have a view as to the steepness
11 and extent of the inspection requirements that would
12 fall to them when the licensees in their regions who
13 had renewal approved began implementing the
14 commitments.
15 MR. BURTON: Oh, further down the road.
16 I'm sorry. My apologies to Region 1.
17 CHAIRMAN BONACA: One more question I have
18 is for any of the license renewal we already had in
19 Region 1, were Region 1 inspectors used or only from
20 headquarters.
21 MR. BURTON: For Region 1 inspection?
22 CHAIRMAN BONACA: Yes.
23 MR. BURTON: I'm not sure.
24 CHAIRMAN BONACA: For Region 1 inspection.
25 MR. KUO: For Calvert Cliffs actually,

1 Region 1 inspectors went there to do the inspection.
2 CHAIRMAN BONACA: So they already had some
3 people assigned to it.
4 DR. LEE: They did Calvert Cliff and Peach
5 Bottom.
6 MR. BURTON: They have not gotten their
7 first GALL plant yet but when the time comes, we'll
8 set up training sessions for them to make sure they're
9 okay.
10 CHAIRMAN BONACA: Okay. Great.
11 MR. BURTON: Of course as you all know, I
12 had a briefing of the full Committee back in March to
13 try and get you all familiar with it.
14 CHAIRMAN BONACA: That was very helpful in
15 fact.
16 MR. BURTON: Good, I'm glad to hear that.
17 It's nice when something works. This is probably a
18 good point to stop.
19 CHAIRMAN BONACA: To take a break. So we
20 will reconvene at --
21 MR. KUO: Dr. Bonaca, before you break,
22 can I just say one thing? Early on, you asked a
23 question about spray head and we said we are going to
24 have a staff reviewer to answer that question. I have
25 the staff reviewer here. If you could give him a few

1 minutes, he probably can answer that question.

2 MR. RAZZAQUE: This is Muhammad Razzaque,

3 Reactor Systems Branch. Basically the fire event

4 requires 72 hours to get to cold shutdown condition.

5 They indicated that they have three mains to get to

6 there. One of course is the pressurizer itself,

7 injecting water to the pressurizer and relying on the

8 spray function. Another is the PORV and finally they

9 always have the charging system, charging water and

10 using steam generator rejecting heat by units of Ox

11 feed water they get to the cold shutdown in 72 hours.

12 The passive and long lived components, those systems

13 are in scope.

14 CHAIRMAN BONACA: I understand that. I

15 was asking about not all systems to get somewhere are

16 created equal. Some of them are more relied on. I

17 think actually during the previous break, one of the

18 applicant's engineers here told me that they also

19 demonstrated that in case the spray head is not

20 functioning the efficiency of the spraying is reduced

21 but it's still sufficient to come to a cooldown. Even

22 without reliance of the systems, the approach of using

23 the pressurized spray is adequate. To me that's more

24 convincing.

25 MR. RAZZAQUE: Okay. That's not going to

1 add --

2 CHAIRMAN BONACA: Because I remember

3 that's the way that we accepted it for the previous

4 application when things were discussed.

5 MR. RAZZAQUE: Right. I was going to

6 mention that because one of the previous applicants -

7 I recall it was St. Lucie - we asked them to show that

8 and they did some calculations and showed that it is

9 possible. They lose efficiency but still the 72 hours

10 is long enough time to get to full shutdown.

11 CHAIRMAN BONACA: The issue remains of a

12 generic basis however. In other cases for example,

13 with a reduce of efficiency which the spray head is

14 gone and just injecting there from the top of the

15 pressurizer, if you could not demonstrate that you can

16 bring to cold shutdown in 72 hours, the question

17 remains. Why is any other backup approach adequate?

18 Particularly I have to understand that it

19 is generalized that is in fact as deemed as the most

20 effective. These are additional demonstration points

21 that need to be made. Again it does not apply now to

22 pressurizer head spray because I remember now that

23 that demonstration was made. If you are demonstrating

24 for example, do you go back and check to see that in

25 case you used the PORV or simply charging and

1 relieving on the second side that approach would be
2 adequate?
3 MR. RAZZAQUE: Usually with those, we say
4 that the pressurizer still can be used to get to cold
5 shutdown.
6 CHAIRMAN BONACA: As I'm saying in this
7 particular case, the backup were not used. We just
8 used them it to the spray. We demonstrated that the
9 spray head is not needed. The efficiency will be
10 reduced but still you would be able to bring to cold
11 shutdown in less than 72 hours. If that demonstration
12 could not be supported, would you rely on these backup
13 systems as being as good as the primary system? When
14 would you require them to have the spray head in
15 scope? I don't know.
16 MR. RAZZAQUE: We required one applicant
17 to show some calculations and they did. I don't know
18 whether we can use that as a generic or require every
19 applicant to show that. Basically I used my previous
20 experience to assume that this requirement would be
21 applicable in this case too.
22 CHAIRMAN BONACA: Well SER speaks of the
23 backup and the other ways of cooling and says you
24 cannot do it with the pressurizer spray. Therefore
25 you can do with simply charging it or leaving it on

1 the secondary side. That doesn't seem to me a very
2 orthodox way of the pressurizing and cooling.
3 MR. RAZZAQUE: In the FSAR, there is a
4 procedure laid out how step by step they can do it if
5 they have to.
6 MR. BURTON: Let me try to --
7 CHAIRMAN BONACA: It would seem to me like
8 a way to just get out of making a commitment about a
9 component that is important. I think you have to
10 reflect on what's acceptable.
11 MR. BURTON: Let me just in general
12 because I'm not as familiar as Muhammad with this
13 particular situation. The current licensing basis has
14 to be maintained. Whether it's getting a cold
15 shutdown in 72 hours or whatever it is, whatever is in
16 the current licensing basis as being credited with
17 making sure that it happens, that is an intended
18 function. I assume this is a 50.48(a)(3) criterion
19 kind of thing.
20 If that is what is credited and it's
21 needed to meet in this case 50.48 or whatever, the
22 license renewal or the Rule says "Those things should
23 be in scope." It really is a function of what it is
24 they are crediting in their current licensing basis.
25 I've said this before with Hatch.

1 When you try to get your arms around the
2 licensing basis related to fire, it varies from plant
3 to plant. It's just very complex. So in that respect
4 specifically for fire, it's a little more difficult to
5 try and say that something is generic. It's very
6 plant-specific when you look at licensing basis.
7 That's one of the reasons why we have the
8 ISG on the scoping of fire protection which I think
9 you all are familiar with. I think you've been
10 briefed on that. We're developing that but part of
11 the ISG is not so much to say what should be in scope
12 related to fire but here is the process that the staff
13 uses and the documentation we look at to get our arms
14 around a plant-specific licensing basis. Rani
15 Francovich has been the person who has done that. But
16 I know in the case --
17 MR. ROSEN: Wait a minute. I think we're
18 making this way too hard. It's simpler than you're
19 making it. If the plant doesn't want a pressurizer
20 spray head in this program, fine. All they have to do
21 is show they can maintain licensing basis without it.
22 But if you do that on Fort Calhoun, it's not adequate
23 for the next plant.
24 MR. BURTON: That's true.
25 MR. ROSEN: Because it's the circumstances

1 and the thermohydraulics could be different.

2 DR. LEE: Let me just add to what Mr.

3 Rosen and Dr. Bonaca said. Rani Francovich just

4 reminded us when we were reviewing Catawba- McGuire we

5 asked the same question about a pressurizer spray

6 head. In that case, they could not show us an

7 analysis that said they don't need the spray head. In

8 that case, the spray head was in scope and they didn't

9 manage it.

10 CHAIRMAN BONACA: I was talking about

11 primary and secondary way or a backup way because the

12 SER does not talk about the efficiency of the spray

13 head. It talks about there are other ways of

14 pressurizing and I wasn't sure that they were

15 particularly charging and living on the secondary side

16 was a very orthodox way of doing it that way. Is that

17 really where you want to get? I'm not sure you want

18 to get to that point.

19 DR. LEE: We need to go look at the SC

20 again and see if we can prove that.

21 CHAIRMAN BONACA: That's the point I'm

22 making. Now you are telling me that it's in the

23 licensing basis of the plant as one way of the

24 pressurizer. Well they can have maybe included bleed

25 and feed. Do you really want to depend on bleed and

1 feed? Would you accept that as a means of cooling and
2 the pressurizing? I'm not sure you would do that.
3 You would say "Wait a minute now. Spray head is
4 important." That was the point I was making was that
5 the SER wasn't talking about induced efficiency and
6 yet adequacy. It is talking about other ways of doing
7 it and one of them didn't seem to be very orthodox to
8 me.
9 DR. LEE: Emphasize that point.
10 MR. KUO: We will take a look at the SER
11 and come back to you.
12 CHAIRMAN BONACA: With that, let's take a
13 recess until 1:00 p.m. Off the record.
14 (Whereupon, at 11:58 a.m., the
15 above-entitled matter recessed to reconvene at 1:01
16 p.m. the same day.)
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1 A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

2 1:01 p.m.

3 CHAIRMAN BONACA: Okay. The meeting is

4 called to order. You can continue with Section 3.

5 MR. BURTON: Okay. Everybody can hear me

6 okay. All right, just before the break, I started to

7 get into Section 3 and just talk a little bit in

8 general terms about how the staff went about its

9 review and some of the training that we did of the

10 staff and some other folks as we went through the

11 process.

12 Now we're going to start to get into some

13 of the details of the SER. I'm going to start Section

14 3.0. There are four subsections here. 3.0.1

15 describes the new GALL format that aid the reader.

16 3.0.2 as I mentioned before describes the staff's

17 review process which I've gone through. 3.0.3

18 evaluates the common aging management programs. I'll

19 explain common versus unique.

20 You know there are ten program attributes.

21 Three of the program attributes are related to quality

22 assurance ("QA"): corrective actions, confirmation and

23 administrative controls. Those cut across all of the

24 aging management programs. So rather than evaluating

25 those three for each program, the evaluation involves

1 the same thing each time. We evaluate those
2 separately. We did that in Section 3.0.4.
3 In general with regard to these things,
4 we're looking for 10 CFR Appendix B QA program that
5 addresses the three attributes. We're looking for
6 that Appendix B pedigree to apply to both safety and
7 nonsafety-related SSCs. That's traditionally what's
8 been going on with some of the applicants so that's
9 what we looked for. All of that is laid out in
10 Section 3.0.4.
11 Now it is in this section of the SER, we
12 have an open item and this is the only open item that
13 technically is still open. I mentioned to you before
14 that we had sent out several what we call "potential
15 open items". They responded to those potential open
16 items in a submittal dated March 14th.
17 In addition to addressing those potential
18 open items, they also provided to us a number of
19 revisions that they made to the Section 2 and Section
20 3 tables. There were a fair number. Because it was
21 submitted in mid-March, the staff did not have time to
22 evaluate all of those revisions. So we had an open
23 item more as a placeholder until we could finish
24 reviewing the information that they provided. In
25 OPPD's slide, you remember they said that there were

1 a couple of open items that were in our court. This
2 was one of them.
3 Now we had a two day meeting a couple of
4 weeks ago to go over all of those revisions. The
5 revisions were made for three reasons. Some of the
6 revisions were made in response to some of the RAIs
7 that we asked. Some of the revisions were made in
8 response to the potential open items that we issued.
9 Then there were a number of revisions that they made
10 on their own.
11 The staff had to go through and make sure
12 that all of those revisions that they made were
13 actually okay. We've gone through probably 95 percent
14 of them and found them acceptable but there's still a
15 few that we've actually discussed and they've made
16 revisions based on our discussions. However the staff
17 has been so busy, they haven't had a chance to go back
18 and follow up on that.
19 Technically it's still open but as a
20 practical matter if these last revisions are
21 consistent with the discussions that we've had, we
22 expect that once the staff can get away from the other
23 license renewal reviews that they are doing and can
24 take a look at this, this will go to resolved. We
25 expect to have that done in the next couple of weeks.

1 Technically it's open but as a practical matter, we
2 really think it's resolved.
3 Next we're going to go into the aging
4 management programs. There are 14 what I call common
5 aging management programs. Now what do I mean by
6 common? These are they. Common aging management
7 programs are programs that are credited with managing
8 aging and components across system groups.
9 Chemistry. Chemistry is credited with
10 managing aging and components in reactor systems, in
11 EFS systems, in auxiliary systems. It cuts across
12 system groups. All of these do that so that's why we
13 call them common aging management programs.
14 There are other programs which I'll talk
15 about in a minute that are unique to just one system
16 group like reactor vessel internals inspection. That
17 only is addressed for components in the reactor
18 systems groups.
19 So these are the 14 common aging
20 management programs. Five of them they claim to be
21 consistent with GALL. Seven of them are consistent
22 with GALL with some deviation. Two of them are
23 non-GALL AMPs. We documented the review of all of
24 these in Section 3.0.3 as I mentioned before.
25 I did want to discuss a couple of them

1 because I think they had some interesting things to
2 share. One is the general corrosion of external
3 surfaces program. We had a confirmatory item come out
4 of this. During the AMR inspection, we found that the
5 heat exchanges in the spent fuel pool cooling systems
6 which are made of carbon steel and so the management
7 of the external surfaces was really going to be done
8 by this program.
9 But when you looked at the scope
10 associated with this particular program, spent fuel
11 pool cooling wasn't in there. We discussed it with
12 them and they agreed that it should be. We had a
13 confirmatory item until they actually revised the
14 scope of the program to include this system. They did
15 that and it's resolved.
16 One-time inspection, we talked about that
17 a fair amount this morning. As you mentioned before,
18 when you do use a one-time inspection. It used to
19 confirm that aging effects either aren't present or
20 they are progressing so slowly as to not be an issue.
21 At Fort Calhoun, this program has not yet
22 been developed. From a review and inspection point of
23 view, what we were looking for was to identify where
24 this program was going to be credited and to make sure
25 that we had commitments to make sure that when they do

1 create this program, all those areas are covered. If
2 you go to Appendix A, the commitment table, you'll
3 find the ones that involve the one- time inspection.
4 There is a fairly long list of items that they've
5 committed to cover in this program.
6 CHAIRMAN BONACA: Why would you have a
7 one-time inspection program? In previous
8 applications, there wasn't a program that says
9 one-time inspection program. Simply, there were
10 commitment to one-time inspections which varied
11 depending on the type of system or component you are
12 going to look at.
13 MR. BURTON: That's true.
14 CHAIRMAN BONACA: The fact that each one
15 of them could convert itself into a program should in
16 fact the one-time inspection show that you do have an
17 aging mechanism.
18 MR. BURTON: Actually Ken wanted to
19 address that.
20 MR. HENRY: Ken Henry. We identified it
21 as a program because it's identified in GALL as a
22 program. It gives us the place as a program document
23 to collect all the data so all the evaluations will be
24 collected there. It'll be a place where all the
25 records will be kept and you'll be able in the future

1 to see it as one thing. But it is credited as a
2 program in GALL.
3 MR. BURTON: So from our point of view
4 during the AMR inspection, again as I told you before
5 first of all we're looking to see if the program
6 exists and covers what it needs to cover. In this
7 case, it didn't. Second thing were looking for is to
8 see if there was a program that had some mark-ups or
9 something like that. Again, not there because it
10 hasn't been developed.
11 So we had to go to their commitment
12 tracking system. Each of the issues that are going to
13 be covered in the one-time inspection they have what
14 they call action requests. In their commitment
15 tracking system, what you see is a whole list of
16 action requests ("ARs") that cover each issue that
17 ultimately is going to be covered in the one-time
18 inspection. So during the inspection, we actually
19 went and saw that they do have the things in place to
20 do that. Then in course on our end, we have it all
21 covered in Appendix A.
22 CHAIRMAN BONACA: For example, you could
23 have a one-time inspection on void swelling.
24 MR. BURTON: For instances, I don't know
25 if that is the case but yes for instances that's true.

1 CHAIRMAN BONACA: I'm just making an
2 example. Now you go in and you find that you have a
3 void swelling that's beyond what you expected and
4 therefore you have to inspect again. Would you keep
5 it as a one-time inspection or would you just move it
6 to reactor vessel internal?
7 MR. HENRY: And that's identified as part
8 of the GALL program. If you find something unexpected
9 even such as corrosion in another system, then you
10 have to address it. It would somehow get incorporated
11 into some other program.
12 MR. BURTON: Right. I think this is true
13 not just for Fort Calhoun but in general. If
14 something is not what you assumed in the one-time
15 inspection, it gets kicked into their corrective
16 action program, goes through all of that, and
17 ultimately if it is something that's beyond a
18 one-time, it will get incorporated into a already
19 existing program. Or if they have to develop a new
20 program they would do that. That's how that works.
21 I just talked about the common aging
22 management programs. Now I'm going to give a quick
23 talk about the ones which I call unique. They are
24 associated with a specific system or structural group.
25 In the reactor systems group, there are five aging

1 management programs: vessel integrity, internals
2 inspections, steam generator, Alloy 600 and thermal
3 embrittlement of cast. All of those are credited for
4 the managing components in the reactor systems group
5 and no other group.
6 What you see in parenthesis is these are
7 the sections in the SER where you can find the staff's
8 evaluation. The common aging management programs were
9 all evaluated in Section 3.0.3 of the SER. For the
10 system specific AMPs, they are evaluated within the
11 system group in the SER where it's discussed.
12 For auxiliary system, we have three of
13 them: fuel monitoring and storage, load handling and
14 buried surfaces and then under structures, we had
15 containment leak rate. Actually I think there is one
16 more. Yes, in electrical, we have the non-EQ cable
17 aging management.
18 A little bit of statistics. Out of that
19 group of system-specific AMPs, four of them were
20 consistent and six were consistent with GALL with some
21 type of deviation. There were no non-GALL AMPs. That
22 should say non-GALL as opposed to not consistent with
23 GALL. As I said, the staff's evaluation for each of
24 those is in the specific SER section for the system or
25 structural group.

1 MR. LEITCH: There's a comment. I think
2 it's in the SER. I didn't write down the reference.
3 There's a comment that non-EQ cable aging management
4 program was not adequately described.
5 MR. BURTON: Right.
6 MR. LEITCH: Now has that been resolved?
7 MR. BURTON: Yes, and in fact the answer
8 is yes. It's been resolved. I was going to talk
9 about that when we got to the electrical portion.
10 MR. LEITCH: Okay.
11 MR. BURTON: But just to say briefly, the
12 initial aging management program that was submitted in
13 the application was not a GALL program. Since then
14 though, we do have a non-EQ cable AMP in GALL, E1, E2
15 and E3. There's actually three of them. They have
16 since gone back and now have submitted an aging
17 management program that is consistent with those three
18 GALL programs but I was going to talk about that a
19 little bit later on.
20 MR. LEITCH: Okay.
21 MR. BURTON: So that issue has been
22 resolved. What I call Fort Calhoun Station AMP
23 statistics. Total number of AMPs is 24. Total number
24 of non-GALL AMPs initially it was three including that
25 non- EQ AMP that I just mentioned. Now that it has

1 now been redone to be consistent with GALL, now we
2 only have two non-GALL AMPs. Number of AMPS that are
3 consistent with GALL was 21. Now with that revised
4 non-EQ AMP, it's 22.
5 Number of AMPs that have some sort of
6 deviation from the GALL AMPs is 13. Of those 13,
7 remember I told you there were three types of
8 deviations. Four of these 13 have clarifications.
9 Six have some sort of exception and ten have
10 enhancements. Of course, some of them have more than
11 one of these types of deviations.
12 What this is I looked at the AMPs and are
13 crediting a GALL AMP claiming to be consistent with a
14 GALL AMP and wrote down all those GALL AMPs. There
15 were 30 of them initially. Now there are 33. Does
16 everybody understand what I'm saying there?
17 MR. LEITCH: No, you missed me on that.
18 MR. BURTON: Okay, I'm not sure I said it
19 clearly. The difference between these two is E1, E2
20 and E3. Those are three additional GALL AMPs. There
21 are 33 GALL AMPs that Fort Calhoun is claiming
22 consistency with. Does that make sense?
23 MR. LEITCH: Yes.
24 DR. RANSOM: Why is the total number still
25 24?

1 MR. BURTON: Because in some of the Fort
2 Calhoun AMPs, one AMP may say "We're consistent with
3 GALL AMP X and GALL AMP Y." Do you know what I'm
4 saying? So Fort Calhoun AMP can be consistent with
5 more than one GALL AMP.
6 Getting into the system groups, the first
7 one is SER Section 3.1, Reactor Systems. This system
8 group consists of three systems: reactor vessel
9 internals, the reactor coolant system ("RCS") and the
10 reactor vessel. Now remember what I said before.
11 What the staff is trying to do, our bottomline, is we
12 want to make sure that the AMRs that they claim to be
13 consistent with GALL are in fact consistent; that the
14 issues where GALL required further evaluation that
15 we've done that evaluation and found it acceptable;
16 and ultimately when we do that we can say that we find
17 that the components are or will be adequately managed
18 for the extended period. The bottomline for Section
19 3.1 for reactor systems is we reach those three
20 conclusions.
21 But I do have some issues that I wanted to
22 bring up. The first was the Alloy 600 program. We
23 talked a little bit about that this morning. As you
24 know, this whole thing with Summer and Davis- Bessie
25 and the cracking and the hole and all that is still in

1 flux and we're still trying to reach resolutions on
2 that. We issued bulletins and orders. So it was
3 difficult for the staff. The staff could say "Let's
4 evaluate them at this snapshot in time with where we
5 are with regard to the development and resolutions of
6 these things or let's just get a commitment from them"
7 to say "Look when all this is said and done and we've
8 reached our final resolutions, let's get a commitment
9 from them that they'll implement whatever comes out
10 when all is said and done." That's what we got from
11 them. That's how we handled all that stuff with the
12 cracking and the wastage and all that.
13 This next one I already talked about
14 orders and generic communications. Anything that
15 comes up, the staff will address them for the current
16 operating term and then carry it into the renewal
17 term.
18 MR. LEITCH: I'm a little confused though.
19 Phil, didn't you say earlier that Fort Calhoun had
20 some Alloy 600 in non-typical locations?
21 DR. SHACK: Right.
22 MR. LEITCH: That is locations that may
23 not be described by the bulletins and orders. So I'm
24 thinking back now to how was that question answered.
25 In other words, what are they doing with inspecting

1 the Alloy 600 in other locations?

2 MR. BURTON: Did you want me to speak to

3 that? I can speak to it in general.

4 DR. SHACK: They told us what they were

5 going to do. Do you want to hear from the staff if

6 they found that acceptable and why?

7 MR. BURTON: Okay. Let me back up because

8 from our point of view because everything is in flux

9 --

10 DR. SHACK: No, the particular one was the

11 Alloy 600 that was susceptible to the IASCC and the

12 void swelling. It was the Alloy 600 in the internals.

13 The V.C. Summer and the head problems, there addressed

14 by what you've done. The pressurizer. Almost all the

15 Alloy 600 is taken care except for this flow skirt

16 which I don't even know what it is.

17 MR. BURTON: Okay.

18 DR. SHACK: But it's there. It's a

19 irradiated apparently. They say it's going to have

20 void swelling. Their proposal was to do a fracture

21 mechanics analysis or a loose parts detection.

22 MR. GAMBHIR: You're talking about --

23 DR. SHACK: No, out of the flow skirt.

24 MR. BURTON: Flow skirt was fracturing Ls.

25 MR. KUO: Mr. Barry address that.

1 MR. ELLIOTT: I think SER says you can do
2 a one-time inspection of those.
3 DR. GASPER: Yes.
4 MR. ELLIOTT: That's how we resolved this
5 issue that they would look at the critical location in
6 this component and do a one-time inspection. That's
7 what I think RCR says. That's what we agreed to.
8 DR. GASPER: Yes, and I believe the
9 analysis was to look at the fluence to these various
10 Alloy 600.
11 MR. ELLIOTT: Yes, fluence and stresses
12 and pick the critical location.
13 DR. GASPER: Right.
14 MR. ELLIOTT: Then do a one-time
15 inspection of that location.
16 DR. GASPER: That is correct.
17 DR. SHACK: The license renewal program
18 says "The fluence and stress analysis will be
19 performed to identify criteria location. A fracture
20 mechanics analysis for critical location will be
21 determined with full acceptance criteria and
22 resolution required to detect flaws. Appropriate
23 inspection techniques will be implemented based on
24 analyses." Even if you don't know what the critical
25 fluence is if you're looking at the worse location and

1 you monitor that, then you've bounded all of the rest
2 of this stuff.
3 MR. ELLIOTT: Right and that's what we've
4 planned to do with the one-time inspection.
5 DR. GASPER: That's what you've found
6 acceptable and that's reasonable enough.
7 MR. BURTON: Thank you, Barry. The next
8 interesting area under reactor systems, I actually
9 have spoken to this a little bit before. The steam
10 generator program is a GALL program but the GALL
11 program manages aging in the steam generator tubes.
12 What Fort Calhoun did was they credited this program
13 for managing aging in other steam generator
14 components. These are some of them here.
15 From our point of view, we had to really
16 understand how exactly are you going to do that. We
17 had a whole series of discussions, RAIs and potential
18 open items to really understand how they are going to
19 do this. Ultimately we got some satisfactory answers.
20 There's a lot more guidance on managing the tubes as
21 opposed to some of these other things.
22 On the secondary side of the steam
23 generator, the robustness of the management, the
24 inspections stuff, is of somewhat less. There was
25 some issue as to what's the appropriate level of

1 inspections and things like that and what should be
2 the qualification of the inspector. Do they need to
3 be VT-3 qualified or VT-1 qualified? I can't remember
4 which one it is. Was that necessary when inspecting
5 these components? We went through a lot of that and
6 ultimately we reached an agreement on what was the
7 appropriate level. Bottomline when all that was done,
8 we feel that the way they're going to implement this
9 aging management program is going to be appropriate
10 for these components.
11 DR. RANSOM: Just as an example, could you
12 give me a few examples of what they would actually
13 inspect and how often would they do that in an aging
14 management program say for a component like this?
15 MR. BURTON: Okay. What I'm going to do
16 is turn it over to the reviewer Cheryl Kahn who can
17 answer those questions.
18 MS. KAHN: They broke the different
19 components depending on where they were and what the
20 material was. They broke them down into a couple
21 different categories. I can give you just one of the
22 examples. They included secondary shell, the
23 handholds, the head, the manway, the transitional cone
24 all into one grouping. They said that basically there
25 were some more materials, similar environments.

1 They visually inspect at least one of
2 those components every outage when they open up the
3 steam generators. Frequently it tends to be the
4 handholds because they have easiest access to it.
5 They believe that's representative of the rest of the
6 components. However they also do crawl-throughs of
7 the steam generator secondary side during the outage
8 and they're just visually inspecting as they go
9 various different components.
10 DR. RANSOM: What do they look for?
11 MS. KAHN: They are looking for rust,
12 corrosion. In this particular case, it is a loss of
13 material or corrosion that they are looking for. In
14 that case, they're just looking for anything that's
15 out of the norm from what they typically expect to
16 see.
17 DR. RANSOM: Does they take measurements?
18 MS. KAHN: For that particular one, give
19 me one moment.
20 DR. RANSOM: I guess we heard they're
21 replacing the steam generators.
22 MS. KAHN: Right.
23 DR. RANSOM: Is that a part of the aging
24 management program?
25 MS. KAHN: No, that's not part of the

1 aging management program. I have to look but I know
2 that for a number of these inspections what they
3 referenced were site cleanliness standards in terms of
4 what their acceptance criteria was and that was in
5 sizes. It's like a square inch area of corrosion or
6 rust or degradation that was acceptable. If it was
7 anything beyond that, then they had to flag it.
8 What a lot of the discussions that we had
9 indicated was that the folks that performed those
10 inspections they tend to be vendors or contractors.
11 They are going from plant to plant to plant. They
12 know what they're typically seeing at all these
13 plants. If they see something beyond those site
14 cleanliness standards or if they see something that's
15 out of the ordinary, they would flag that, issue a
16 corrective action document and then they get into
17 further evaluation from there depending on what was
18 found.
19 DR. RANSOM: Thank you.
20 MS. KAHN: You're welcome.
21 MR. BURTON: I think that's all I wanted
22 to say on that one. Going into Section 3.2,
23 Engineered Safety Feature systems, there are basically
24 two ESF systems in this system group. Safety
25 injection and containment spray, that's one system but

1 they grouped everything for license renewal. That
2 consists of high-pressure safety injection ("HPSI"),
3 low-pressure safety injection ("LPSI") as well as
4 containment spray.
5 Then the second system is containment
6 penetration and system interface components for
7 non-CQE systems. That's the name of the system. That
8 is the one that catches the containment isolation
9 valves, again similar intended function including the
10 piping between the penetration and the isolation
11 valves.
12 Demineralized water heat exchangers, those
13 are needed to maintain the pressure boundary for the
14 component cooling water. That's actually captured in
15 here as a component in one system but they're
16 crediting in another system because it's needed to
17 maintain the pressure boundary. Then the mechanical
18 portions of the electrical penetrations. Those are
19 the kind of components that are within this system.
20 Basically those are the two engineered safety feature
21 systems.
22 We didn't find any outstanding issues
23 here. So again the three things that we were looking
24 for during our review where they claimed consistency
25 with GALL, we found that to be okay. For the issues

1 that required further evaluation from GALL, we
2 evaluated those and found those to be acceptable. As
3 a result, we found the components in the ESF systems
4 are or will be adequately managed.
5 Going into Section 3.3, Auxiliary Systems.
6 There are 20 auxiliary systems and you know they range
7 from wall water, component cooling water, ventilation,
8 diesel generator support systems. It's a catch-all,
9 a lot of systems in there of very different kinds.
10 Again bottomline is we found that where they said they
11 were consistent with GALL was okay. Issues that
12 required further evaluation, we looked at those and
13 found them acceptable.
14 There was an issue that came up as an open
15 item and it had to do with the tubes in the
16 regenerative heat exchanger. Those heat exchanger
17 tubes are not going to be subject to aging management.
18 So the issue came up with the staff that "Okay, we
19 need to understand the licensing basis for the
20 chemical and volume control system ("CVCS") and where
21 and if it's credited in terms of accidents and things
22 like that."
23 So we went through that as a scoping issue
24 and then said "What are the consequences if you had a
25 letdown line break or charging line break? What

1 normally happens and then what is the impact if you do
2 not have the tubes to maintain the boundary between
3 the letdown and the charging?"
4 What they clarified for us is that
5 basically if you get a break like that, the letdown
6 line gets isolated and bottled up. You just have dead
7 head there. In terms of if you need any charging
8 inventory into the RCS because the letdown line is
9 dead headed, you're not doing any inventory bypass so
10 it will all get in there.
11 MR. LEITCH: Butch, so I just that I
12 understand this, in other words, they had reviewed
13 this from a pressure retaining standpoint in the shell
14 but what they had not done was the consideration of
15 tube side to shell side leakage. So they didn't have
16 an aging management program for the tubing.
17 MR. BURTON: Right.
18 MR. LEITCH: And you concluded that one
19 was not needed.
20 MR. BURTON: Right because the
21 consequences to the tubes and losing that barrier
22 between the letdown and the charging like during an
23 accident, it didn't adversely impact on the ability to
24 charge and maintain RCS inventory.
25 MR. LEITCH: Is an accident the only

1 situation that we need to consider? Wouldn't that
2 play some significant role in normal operations?
3 MR. BURTON: I'm going to swing this over
4 to the reviewer because they did get into all that
5 both normal and accident situations. I'm going to let
6 Stu Bailey address that one specifically.
7 MR. BAILEY: Hi, this is Stu Bailey. For
8 clarification, this really did become a scoping issue.
9 I'm actually the system engineer who took a look at
10 this. The background on this is initially the LRA led
11 us to believe that the tubes were going to be managed.
12 It was actually identified during the AMR inspection
13 that no, they don't actually manage the tubes at this
14 heat exchanger because it's all-welded stainless steel
15 construction. They can't really do any inspection on
16 them.
17 So they came back with the argument that
18 we really don't need these. They do not have a
19 license renewal intended function. Then it became
20 more of a scoping issue. We pursued it from the
21 scoping perspective. It was a potential open item and
22 the written up as an open item in the SER. Since
23 then, I believe we've come to resolution.
24 There was a lot of discussion about the
25 use of the CVCS both during their Chapter 14 analysis

1 and during the regulated events. Also the potential
2 for this to be a design feature to isolate breaks and
3 the CVCS itself and through walking through the
4 operation of the isolation valves that are built into
5 this system and the redundancy that they have there,
6 the staff has come to the conclusion that the pressure
7 boundary is not needed for a license renewal intended
8 function.
9 In terms of an operational issue, they do
10 have a discussion of that. I don't think that is
11 reflected in the SER. They have considered that. It
12 could potentially be an operational issue if you had
13 significant degradation.
14 I think the pressure difference across the
15 tubes is normally very small in normal operation. You
16 would probably need some degree of degradation to
17 notice a significant leakage there. But they would
18 start to have trouble maintaining temperature
19 differences and possibly RCS chemistry. In looking at
20 that operational issue, it would probably drive them
21 to identify that they were having some degradation in
22 these tubes.
23 MR. LEITCH: It sounds a little like
24 because we can't do -- In other words, we don't know
25 how to inspect these tubes, therefore they're screened

1 out.

2 MR. BAILEY: I think they are arguing that

3 it didn't go in that direction. From our perspective,

4 the GALL has a few errors in this area that we have

5 corrective actions to fix. So the GALL and the SRP

6 have some inconsistencies. I think that they have

7 some over- reliance on these tubes. From looking at

8 the paper trail, it looked to us as though they were

9 going to do inspection of this tube and when

10 questioned, they decided no. I believe they are

11 saying otherwise. So there might have been some

12 inconsistency in the LRA or the LRA might not have --

13 MR. VAN SANT: This is Bernie Van Sant.

14 No, we had never credited any type of an inspection

15 for these tubes. It was identified when we performed

16 our engineering analysis that went into the

17 application that we would not be doing an inspection

18 of these tubes and had the justification defined then

19 that it was as Stu has said that these don't perform

20 an intended function. As far as operationally, we

21 would have to come down to fix this if we had a leak

22 that would impact our ability to maintain chemistry or

23 impact temperature on our letdown side.

24 MR. BAILEY: Okay, that's possible. The

25 one link in GALL covers region heat exchanger and

1 letdown heat exchanger. In going to this GALL format,
2 there is occasionally some ambiguity in the AMR.
3 MR. LEITCH: Okay. Thank you.
4 MR. SIEBER: If you have a tube leak in
5 these heat exchangers though, you are bypassing some
6 injection flow, are you not?
7 MR. BAILEY: Not following an event
8 because the letdown phase and therefore it's going
9 against dead head. You could be bypassing some of
10 your system function during normal operation.
11 MR. SIEBER: On the other hand, if you had
12 the leak in the letdown system, an intersystem leak or
13 something like that, you'd be impacted there if that's
14 analyzed and bounded, right?
15 MR. BAILEY: There are enough isolation
16 valves that the normal operation of this system would
17 isolate that.
18 MR. SIEBER: Okay.
19 MR. BURTON: Thanks, Stu.
20 MR. SIEBER: I guess you have an automatic
21 isolation on high temperature in letdown so you don't
22 melt the resin.
23 MR. BAILEY: Yes. That would be after the
24 letdown heat exchanger. I think we were focused
25 mostly on upstream of the letdown.

1 MR. SIEBER: Okay.

2 MR. BURTON: I think that's all I wanted
3 to say on that. That was an interesting issue. We
4 had developed an open item. At this point, we have
5 that issue as resolved.

6 Next was Section 3.4, Steam and Power
7 Conversion Systems. No open items or unusual things
8 in this system other than I mentioned to you before
9 about the issue with the blowdown and the
10 discrepancies. We worked that all out. Once we
11 understood that, instead of three, there are actually
12 four systems included in here including the blowdown.
13 If you recall what I said before, the blowdown system
14 is a system and it is in scope but its components are
15 actually an assemblage of components from other
16 systems. However it is a system with an intended
17 function all its own.

18 Again the three main things we are looking
19 at, they're all there. AMR is consistent with GALL.
20 Issues were GALL recommended further evaluation. We
21 looked at those evaluations, found them acceptable and
22 again from that found that the components for steam
23 and power conversion systems are or will be adequately
24 managed.

25 MR. SIEBER: Blowdown is not safety

1 related though, right?

2 MR. BURTON: No, I don't believe so.

3 MR. SIEBER: You don't need it for

4 anything other than maintaining chemistry on the

5 secondary side.

6 MR. BURTON: Correct.

7 MR. SIEBER: So why would it be in scope?

8 Is it 2 over 1 deal or something like that?

9 MR. BURTON: I don't know.

10 MR. VAN SANT: This is Bernie Van Sant.

11 The portions for blowdown that are in scope are the

12 containment isolation portion. The portion between

13 containment isolation and the generators is a Class 2

14 safety related.

15 MR. SIEBER: Thank you.

16 DR. SHACK: Just to go back to heat

17 exchanger, is that something that's going to be

18 plant-specific as to whether it can be isolated or

19 will that system disappear from GALL now or it's a

20 plant by plant thing so you leave it there and they

21 have defend leaving it out?

22 MR. BAILEY: Well, the intention is to

23 correct GALL. That's the action that we have taken.

24 I'm pretty confident that will all the CE designs

25 there is sufficient isolation. I have not looked

1 enough at the Westinghouse designs to know whether you
2 can just carte blanche write this off. That will be
3 part of our GALL revision to look into that.
4 MR. SIEBER: But the failure history of
5 those is virtually no failure, right? I can't recall
6 of anybody that had a failure like that.
7 MR. BAILEY: I think that's true. I don't
8 think they normally see the accident conditions and
9 they are not frequently inspected.
10 MR. SIEBER: The services are not hard.
11 MR. BURTON: The next one I wanted to go
12 to was Structures, Section 3.5. I already gave you a
13 list in Section 2 of the actual structures and
14 structural components. No major issues came up with
15 the review of the aging management review stuff so
16 again we found that they are consistent with the
17 guidance in GALL. Where GALL recommended further
18 evaluation, we looked at that and found it to be
19 acceptable. Again based on that, we found that the
20 structures and structural components are or will be
21 adequately managed.
22 MR. LEITCH: Did you agree with Fort
23 Calhoun's position that there was nothing unusual
24 other than GALL as necessary because of the buckling
25 that they had experienced in the containment liner?

1 MR. BURTON: Actually the buckling issue
2 is part of Section 4, TLAA.
3 MR. LEITCH: Oh, it's a TLAA.
4 MR. BURTON: I'm actually going to talk
5 about that a little bit later.
6 MR. LEITCH: Good.
7 DR. RANSOM: I'm curious on this. What
8 would an aging management program for building piles
9 consist of?
10 MR. BURTON: Did you want to speak to
11 that? I don't know how you wanted to do this.
12 MR. VAN SANT: There is no aging
13 management program for the building piles.
14 MR. JENG: I'm David Jeng. There's no
15 requirement of aging management program on piles but
16 there's management aging about how the pile behaved
17 when they are staying down there in the virgin soil
18 for many years. If the pile is driven to an
19 undisturbed virgin soil, the knowledge tells us that
20 there's no appreciable degradation corrosion or
21 erosion over the material.
22 However if the pile is driven into a
23 partially disturbed foundation, there could be minor
24 or localized degradation happening in part of the
25 piles. But our main basis is over the couple hundred

1 years we have been building piles in the high-risk
2 buildings in various areas so they are functioning
3 over some years. So the consensus is there are no
4 effective aging of the pilings based on our past
5 experience.
6 DR. RANSOM: So there isn't an aging
7 program. It's just that you have accepted that the
8 pilings are good for 200 hundred years.
9 MR. JENG: Yes, based on our experience
10 and the technology of the construction industry.
11 DR. RANSOM: Unless of course it becomes
12 like the Leaning Tower of Pisa or something.
13 MR. ROSEN: What were the piles in the
14 Leaning Tower of Pisa?
15 MR. BURTON: Not good.
16 MR. LEITCH: That's why it's leaning.
17 MR. BURTON: Thanks, Dave. I appreciate
18 that. Moving into Electrical, Section 3.6. As I had
19 mentioned before, there were actually 20 electrical
20 systems that were in scope but the components
21 associated with all but three of them were screened
22 out as active. These were the only commodities that
23 were subject to an AMR. I mentioned all that before.
24 There are three GALL AMPs that address
25 cables and connections. I've summarized. The third

1 one is on the other slide. There are non-EQ cables.
2 The XI.E1, this is where cables are exposed to adverse
3 environments caused by heat, radiation or moisture.
4 Again non-EQ cables used in instrumentation circuits.
5 The issue is reduction and isolation resistance upon
6 exposure to heat, radiation or moisture.
7 MR. SIEBER: For the EQ cables, you're
8 relying on qualified life.
9 MR. BURTON: Yes, for the EQ cables,
10 that's a TLAA. So we have the EQ program and they are
11 going to continue to maintain that in the extended
12 term. That's all we really were concerned about with
13 the non-EQ. On the next slide, continuing on, E3 had
14 to do with inaccessible medium voltage non-EQ cables
15 exposed to local adverse environment caused by
16 moisture and voltage exposure. Those are the three
17 GALL AMPs.
18 As I said before, initially the non-EQ
19 cable AMP that OPPD submitted was not consistent with
20 these three. I think part of it was when they were
21 developing their applications this still hadn't been
22 fully developed. That was part of the issue. So once
23 all this was done, we came back and said "Okay, we
24 have a GALL AMP and you should probably go on and make
25 your non-EQ AMP consistent with the GALL" which is

1 what they did.

2 So they develop a new AMP that is

3 consistent with GALL AMPs but in our review we

4 identified four open items. The first one which was

5 a fallout from this is that the USAR Supplement that

6 was originally submitted was a description of the

7 non-GALL program. So we had an open item to say you

8 need to go back and redo the USAR Supplement to

9 describe the new AMP that's consistent with GALL.

10 They went back and did that. That's resolved.

11 The second one, we brought up the issue of

12 aging in bus bars. Initially we said that you need to

13 develop a program to manage aging in the bus bars. We

14 have some generic communications and some operating

15 experience that describes aging degradation. They

16 came back and said "We don't need a new program. We

17 can actually perform the management of those bus bars

18 as part of one of our current programs" which is the

19 periodic surveillance and preventive maintenance

20 program. That particular program is a non-GALL AMP.

21 So they went back and did a revision to make sure that

22 these bus bars are within the scope of this AMP and

23 they can do all the management they need to do. That

24 is resolved.

25 MR. LEITCH: Wasn't bus ducts also a part

1 of that issue? Was it just bus bars? I thought bus
2 ducts were also a part of that issue.
3 MR. SIEBER: I think I read that too.
4 MR. BURTON: Yes, I think that's right but
5 let me just have Paul Gill speak to that.
6 MR. GILL: I'm Paul Gill from Electric
7 Engineering. Bus bar in the license application was
8 used more generically but they do mean bus ducts,
9 non-segregated and isophase bus as well. So the bus
10 bar they originally had in scope were the switchgear
11 buses which is not required by the Rule because they
12 are active components. We sorted that out and
13 basically focused on the bus ducts and bus bars that
14 are found in nonsegregated phase bus or isophase bus
15 or even segregated phase bus. But they don't seem to
16 have segregated phase bus.
17 MR. LEITCH: So where you're saying bus
18 bars, it also included bus ducts.
19 MR. GILL: That's right. They still carry
20 the generic term but if you look at our SER, we
21 specifically talk about nonsegregated phase bus and
22 isophase bus which are the two in scope essentially in
23 the SBO recovery path.
24 MR. LEITCH: Okay, thank you.
25 MR. BURTON: Thanks, Paul. So that was

1 the second open item electrical open item and that's
2 resolved. The third open item was asked to provide an
3 AMP to manage aging in the high-voltage conductors or
4 they have an option if they can justify why one is not
5 needed. It turns out that they provided an adequate
6 justification why they didn't need to do that. So we
7 were able to close that one out.
8 MR. LEITCH: I was confused why that
9 issue. It seemed to me that what we're talking about
10 here is aerial conductors where there is aluminum with
11 a steel shank running through them. Was that the
12 issue? I really didn't understand what we were
13 talking about.
14 MR. BURTON: Paul's coming back.
15 MR. GILL: Again I'm Paul Gill. I
16 shouldn't have left. I think what we are talking
17 about here is essentially what you just described.
18 These are the conductors that come from the switchyard
19 to the primary site off the auxiliary transformers.
20 They are basically overhead and they are aluminum core
21 steel reinforced conductors. There are no aging
22 effects on that.
23 MR. LEITCH: Now we had agreed that there
24 was no aging effects on the aluminum conductors. But
25 I thought we had a question about whether there was

1 aging effect on the steel. What I'm saying, Paul, is
2 you were satisfied that was no aging management
3 required in that area also?
4 MR. GILL: That's correct.
5 MR. BURTON: Okay?
6 MR. SIEBER: It seems to me it was my
7 experience that those things are bolted together and
8 there are clamps on them and the clamps would come
9 loose.
10 MR. GILL: We didn't get into that detail.
11 Maybe the license --
12 MR. SIEBER: Especially with the aluminum
13 and copper, it didn't do it but the aluminum ones did.
14 MR. DiBENEDETTO: Phil DiBenedetto.
15 MR. LEITCH: Especially with these clamps
16 on the round solid aluminum bus stop. I don't
17 remember it on the stranded. I guess you're talking
18 about stranded.
19 MR. SIEBER: Yes.
20 MR. SIEBER: Yes.
21 MR. GILL: Again they are from switch yard
22 to the primary site of the auxiliary transformers so
23 there's as long of runs. It depends how far the
24 switch yards are.
25 MR. SIEBER: It's the bottom of the

1 insulators and so forth which is basically a support.
2 It's not a conductor.
3 MR. GILL: Right.
4 MR. SIEBER: So you don't need to worry
5 about the resistance there.
6 MR. LEITCH: Most places have a thermal
7 imaging that looks for high resistence connections.
8 MR. SIEBER: Yes, but it's a support.
9 It's not a electrical conductor.
10 MR. LEITCH: It's not a conductor. I see
11 what you mean.
12 MR. SIEBER: The only place where that
13 would show up is at the pothead where it goes into the
14 wiring of the transformer itself.
15 MR. LEITCH: Thank you.
16 MR. BURTON: Good. Thanks, Paul. Don't.
17 Just hand on there.
18 MR. SIEBER: Are transformers active or
19 passive?
20 MR. GILL: Yes, the transformers are
21 active. So are the circuit breakers and all the
22 relays. I heard earlier this morning there was a
23 question about the relay house. The passive
24 components through the relay house are essentially the
25 control cables that are associated with the relays.

1 MR. SIEBER: And the connectors.

2 MR. GILL: And the breaker control

3 schemes. They were already in the scope and they have

4 an AMP for that.

5 MR. ROSEN: So all the rest of the stuff

6 in the relay house is active.

7 MR. GILL: Active components and they

8 basically are in scope but screened out.

9 MR. ROSEN: Yes, things like that are

10 easy.

11 MR. SIEBER: That's active. See a

12 transformers doesn't change state if I look at the

13 real definition.

14 MR. GILL: But it's an energy

15 transformation device so if there is any degradation

16 it will manifest itself readily. Whatever maintenance

17 programs they have in place for the normal electrical

18 equipment it will be captured in there.

19 MR. SIEBER: Right.

20 MR. GILL: So under GALL, these devices

21 are considered active and therefore do not require an

22 AMP.

23 MR. ROSEN: What about fuses themselves?

24 MR. GILL: A fuse by itself is active.

25 However the holders are passive devices and they are

1 already captured and we have an ISG on that.

2 MR. BURTON: Which is what I have up here

3 right now.

4 MR. SIEBER: Yes, it depends on where it

5 is. If it's part of a piece of switch gear or in an

6 enclosure, then it's active. If it's not and it's a

7 standalone, then it's passive.

8 MR. GILL: You're right. Exactly that's

9 how the Rule defines it. Any fuses that are put in

10 the switchgear assemblies are active components.

11 Fuses that are standalone fuses in fuseholders are --

12 The holder is passive. The fuses are active but they

13 are in scope and therefore need an AMP for that.

14 MR. SIEBER: Right.

15 MR. BURTON: Good and for anybody who may

16 not be aware, this last discussion is exactly what was

17 in our RSG 5. It lays out everything that was just

18 discussed here. Basically with regard to the

19 fuseholders, they have committed to managing them in

20 accordance with that ISG. So that issue is resolved.

21 Okay. I think it's okay now.

22 MR. SIEBER: I'll wait until he sits down

23 before I ask my question.

24 MR. BURTON: You're a hard man. The next

25 couple of slides were the ARM inspection but Wayne

1 already went through that. So that was it for Section
2 3. I'll go into Section 4, the Time Limited Aging.
3 CHAIRMAN BONACA: Why don't we take a
4 break now? We'll take a break until 2:10 p.m. Off
5 the record.
6 (Whereupon, the foregoing matter went off
7 the record at 1:54 p.m. and went back on the record at
8 2:10 p.m.)
9 CHAIRMAN BONACA: On the record. Let's
10 resume the meeting. We're anxious to hear about the
11 TLAAs.
12 MR. LEITCH: Just before we get into
13 TLAAs, I just had a couple of other questions
14 regarding aging management activities. I guess I'm
15 looking at page B-37 of the license renewal
16 application. It's speaking about the PWSCC failure at
17 V.C. Summer and also the pressurized instrument nozzle
18 leak at Fort Calhoun. It indicates that fabrication
19 issues or fabrication rework was a problem in both of
20 these situations. I'm wondering. Have you reviewed
21 other situations at Fort Calhoun is see whether there
22 were other fabrication problems other than this one
23 particular failure that occurred?
24 MR. VAN SANT: This is Bernie Van Sant.
25 Yes, we've gone ahead and looked at the other Alloy

1 600 nozzles that we have on both the reactor vessel
2 head and in the pressurizer to identify if there is
3 any other fabrication issues and have not identified
4 any that would lead to this type of crack.
5 MR. LEITCH: Okay. The other question I
6 had related to page B-39 where we're talking about the
7 buried surfaces external corrosion program. It talks
8 about an opportunistic visual inspection of buried
9 components. It's not clear to me. If an opportunity
10 does not present itself, will certain inspections be
11 done prior to entering the period of extended
12 operation? Obviously you have to dig up something and
13 look at it before 40 years. That's fine. But the
14 question is suppose that opportunity does not present
15 itself.
16 MR. VAN SANT: This is Bernie Van Sant.
17 Just to respond to your question directly, no, the
18 GALL doesn't require that but Ken can give you some
19 information on what the frequency is that we dig it up
20 for routine maintenance activities.
21 MR. HENRY: We do have two components
22 actually. Our diesel fuel tanks are buried and
23 they're on a set frequency. There's a PM task. So
24 they would be dug up on a set frequency. The other
25 components we looked into is we've been digging some

1 type of buried components up about once every two to
2 three years. That's been our history over the last
3 several years. That gave us some confidence that
4 there would be opportunities to continue to inspect
5 buried components.
6 MR. LEITCH: Does that include fire lines?
7 MR. HENRY: Yes, that does. Particularly
8 it seemed that it's usually more some problem with the
9 valve either hand linkage or valve leakage. That
10 seems typically the reason we're digging something up.
11 MR. LEITCH: And you're a long way from an
12 ocean so I assume groundwater is not very --
13 MR. HENRY: Not caustic, yes.
14 MR. BURTON: Let me just say to follow
15 along with that. Our reviewer from that isn't here.
16 She's feeling a little under the weather. But during
17 the staff's review, we did get into that question and
18 we had an RAI where we asked them "What is some of
19 your operating history in terms of when you have dug
20 those things up?"
21 The intention was to try and get a sense
22 if they were not going to be doing on a regular basis,
23 what's been the history in terms of the frequency that
24 they've actually dug things up to try to get a sense
25 of how often that might happen. Of course like Ken

1 said, he's given you some periodicity to looking at
2 that stuff but the staff was aware of that and did try
3 to understand a little bit better how that might go in
4 terms of digging stuff up.
5 MR. LEITCH: This is the last question.
6 Then on page B-40, General Corrosion of External
7 Surfaces, you credit visual observation for detecting
8 fluid leakage. Has the staff accepted that position
9 that it's an acceptable way to go? When you see it
10 leaking, then you know you have a problem.
11 MR. BURTON: Yes. Again I'm going to say
12 yes but the reviewer is not here and I don't want to
13 say too much.
14 MR. HENRY: I can address some of that,
15 Butch. I think this caused some confusion because we
16 have RAIs on this. The intention of this wording was
17 that leakage would be a precursor if they saw leakage.
18 But our inspections are for corrosion. That's what we
19 were really trying to address that "Yeah, it wasn't
20 the intention that if it got to leakage then we would
21 do something about it" because typically the leakage
22 would be from packing or something like that. That
23 would just be an indicator.
24 If you let that continue then you would
25 probably be seeing corrosion on other surfaces. That

1 was more just to address those precursors. The actual
2 inspections are looking for corrosion and actual
3 degradation. That did cause some confusion that the
4 intent isn't to let it corrode to the point where the
5 piping itself is actually leaking.
6 MR. BURTON: Thanks, Ken. I forgot about
7 that. You're absolutely right. Good. Moving into
8 Section 4, Time-Limited Aging Analysis, these are the
9 TLAAs that we looked at for Fort Calhoun. I'll go
10 through all of them but I do want to spend time on
11 this one. This was this new open item that came up
12 after the SER was issued. This is really your first
13 opportunity to learn about this. So I want to spend
14 some time discussing that.
15 Actually that's going to be the first
16 thing coming up. We have Barry Elliot here the
17 reviewer who actually dealt with this. All this slide
18 does is gives you a little bit of history of how we
19 got to the technical issue. They did a weld repair on
20 the pressurizer liquid space temperature element.
21 During a hydrostatic test, they found there was some
22 leakage from the annulus between the sleeve and shell.
23 They shut down and repaired it. They made the repair
24 but they left the flaw in.
25 They did some evaluation in accordance

1 with some of the guidance that you see here. Now
2 recently in April 2002, they found that the flaw
3 remaining in service wasn't evaluated in accordance
4 with some other guidance that gives you guidance on
5 what to do if you leave the flaw in which is what some
6 of these are. They had already identified that and so
7 we had to open up a new open item. Currently it is
8 resolved and Barry will go through where we are with
9 that.
10 DR. FORD: Is this the same as a similar
11 question that came up in St. Lucie?
12 MR. BURTON: Yes, very similar.
13 MR. ELLIOTT: What this is about is the
14 licensee has made a half- nozzle repair. I don't know
15 if you are familiar with that. That's where they take
16 out a piece of the nozzle for the Alloy 600 problem.
17 They had a leaking Alloy 600 nozzle in the pressurizer
18 and they made the half-nozzle repair where they pull
19 out half the nozzle. They changed the pressure
20 boundary from the inside to the outside surface.
21 The half of the nozzle they leave in is
22 the half that is cracked. So the question is how do
23 you know the crack is okay for 40 years or how do you
24 know for 60 years. That's what this issue is. The
25 actual half-nozzle repair is being reviewed on a case

1 by case basis. But the actual flaw evaluation for the
2 flaw that they leave in service is done in accordance
3 with the ASME code.
4 That's where they are. They have to do
5 that evaluation for the first 40 years and then they
6 have to expand for the 60 years. That's why it's an
7 open issue. How we will resolve that since they
8 haven't done it yet for the first 40 years is we will
9 work with them to establish what they are going to do
10 for the evaluation and what the acceptance criteria
11 will be for both the corrosion part of the analysis
12 and for the fatigue part of the analysis.
13 In essence they've set up a procedure for
14 evaluating the flaw which follows the guidance in NEI
15 95-10 which we've accepted. That procedure is based
16 upon the license renewal rule where if you have a TLAA
17 there are three things you can do. You can do the
18 analysis. You can show that the previous analysis was
19 bounded. Or you can set up a management program.
20 That's what they are doing here. They are setting up
21 a management program which we've accepted through the
22 actual analysis.
23 DR. SHACK: Can you give me a picture of
24 what this through-wall crack in the bottom half of the
25 tube looks like?

1 MR. ELLIOTT: It's a J-weld. It's a
2 penetration. It's your typical Alloy 600 penetration
3 where you have a J-weld. And the crack either went
4 through the J-weld or it went through the tube. So
5 now the primary coolant leaked out in the space
6 between the penetration and the shell of the
7 pressurizer.
8 MR. SIEBER: And the pressurizer shell is
9 ferritic.
10 MR. ELLIOTT: Yes, it's carbon steel.
11 MR. SIEBER: Right, and so the boric acid
12 which you won't know the chemistry in the crack there.
13 MR. ELLIOTT: In this case, they put a
14 seal on the outside so the pressure boundary has
15 changed. So the boric solution that is in the annulus
16 region between the pressurizer shell and the stainless
17 steel penetration is going to be there because they
18 didn't seal up.
19 MR. SIEBER: That's right.
20 MR. ELLIOTT: That concentration isn't
21 going to be highly concentrated. It's just going to
22 be the concentration of the boric acid in the primary
23 coolant which is less than one percent when they start
24 operation and then slowly it reduced to zero percent.
25 That is not going to cause a significant amount of

1 corrosion in an annulus region. It only becomes a
2 problem if it escapes to the air and the air
3 evaporates the water and makes a highly concentrated
4 solution. That's when you get the Davis-Bessie
5 problem. This is a different concentration than that
6 so it won't be as significant a problem.
7 MR. ROSEN: And is this a horizontal
8 penetration or a vertical?
9 MR. ELLIOTT: I don't know its
10 orientation.
11 MR. VAN SANT: It's vertical.
12 MR. SIEBER: It's in the liquid phase so
13 it would be horizontal.
14 MR. ROSEN: Does that matter? All the
15 time we've talked about this kind of problem, we've
16 even gotten a very good description of it. Does it
17 matter what the orientation is?
18 MR. ELLIOTT: Because the boric solution
19 is only a very low concentration of boric acid.
20 MR. ROSEN: It could be in any
21 orientation.
22 MR. ELLIOTT: It doesn't matter the
23 orientation. It only becomes a significant problem
24 when you get high concentrations and if you have a
25 vertical penetration, it acts as a place where you can

1 keep evaporating the fluid and concentrate the amount
2 of boric acid and get a highly-concentrated solution
3 against the ferritic material.
4 DR. FORD: Barry, you undoubtedly heard
5 about all the questions we had about St. Lucie and the
6 repair that was done on the pressurizer there. Those
7 questions, the uncertainties and crack growth rates
8 and use of 690, etc., how much did those questions
9 bear on how you analyzed this particular problem in
10 terms of the uncertainties of the progression of
11 cracking?
12 MR. ELLIOTT: There are two issues here,
13 a fatigue issue and a corrosion issue.
14 DR. FORD: Right.
15 MR. ELLIOTT: Right now, we think we have
16 a pretty good handle on both of those. In fact,
17 fatigue we're just following the Code. For corrosion,
18 there is a research that has been done that shows how
19 much corrosion you get depending upon the amount of
20 oxygen and the amount of temperature. We have data
21 there.
22 But that is not a fully resolved issue
23 yet. I have to admit that. So that's why although
24 they are going to be doing the analysis, we've only
25 allowed plants to operate on a cycle by cycle as part

1 of Part 50. That's one of the issues that we need to
2 fully resolve before we resolve this issue entirely.
3 That's where we are. There is uncertainty on the
4 corrosion and we are still working on that.
5 MR. SIEBER: I don't want to get too far
6 afield but it seems to me the indication that South
7 Texas is amenable to is a repair like this.
8 MR. ELLIOTT: It is amenable. That's the
9 reason they are doing a half-nozzle repair.
10 MR. SIEBER: And it also seems to me that
11 my memory of the ASME code is probably not as sharp as
12 it should be that that's a code acceptable method of
13 repair as I understand it. But the real question is
14 space for the Agency to approve that kind of a repair.
15 MR. ELLIOTT: Let me explain to you. The
16 Code has changed over time. The latest versions of
17 the Code would be an acceptable code but a lot of
18 these plants aren't using that code. They are using
19 an older code so that those plants who are using the
20 older code would have to get a relief request.
21 MR. SIEBER: Okay.
22 MR. ELLIOTT: In the future when we
23 endorse those revisions, it won't need a relief
24 request.
25 MR. SIEBER: Would you typically for a RCS

1 pressure boundary repair like this require a periodic
2 augmented inspection?
3 MR. ELLIOTT: That's one of the issue that
4 we're discussing now. Right now, the only requirement
5 would be for the new pressure boundary is that you do
6 that ISI requirements for Section 11. And the
7 question is do we need more. That's one of the issues
8 that we're going through right now trying to decide.
9 MR. SIEBER: That would be an VT though,
10 right?
11 MR. ELLIOTT: Yes, but the problem is that
12 if you have corrosion on that annulus region, you're
13 going to have to do something else. You're not going
14 to see that by visual.
15 MR. SIEBER: I'm not sure for example in
16 a heavy section of steel with a small nozzle how you
17 would do volumetric of the indication because you
18 wouldn't be able to shoot all the way through.
19 MR. ELLIOTT: For the indication that were
20 remained in the vessel, we require them to do a
21 bounding analysis if we assume that the crack will go
22 right through the entire size of the Inconel 600 weld.
23 And then it hits the carbon steel. The carbon steel
24 is not receptable to primary water stress corrosion
25 cracking.

1 MR. SIEBER: That's right.

2 MR. ELLIOTT: So the only mechanism there
3 which would be the driving force for the crack would
4 be fatigue. So they have to show that for the
5 remaining life of the flem (PH) that the fatigue crack
6 would not hurt the integrity of the shell. That
7 should be easy to show.

8 MR. SIEBER: Yes, that's a pretty
9 reasonable calculation to make.

10 MR. ELLIOTT: Right.

11 MR. SIEBER: Okay, that answers the
12 question.

13 MR. ELLIOTT: And that's why I don't think
14 we need an inspection of that because I think there's
15 going to be plenty of margin there.

16 MR. SIEBER: Okay.

17 MR. ROSEN: When the half-nozzle is
18 repaired, you move the new weld and the pressurize
19 retaining weld is now on the outward side rather than
20 on the inward side.

21 MR. ELLIOTT: Yes.

22 MR. ROSEN: Exposing the ferritic material
23 of the shell, the pressurizer in this case, but
24 there's no concentration of the liquid in the annulus.

25 MR. SIEBER: There's no reason to believe

1 that the concentration would be much different than
2 the bulk fluid.
3 MR. ELLIOTT: Right, exactly. That's what
4 we think so far.
5 MR. SIEBER: There are places where
6 cladding is missing on various vessels. It's exposed
7 and it's approved.
8 MR. ELLIOTT: This is a present day issue
9 that we're still looking at.
10 MR. SIEBER: Okay. Thank you very much.
11 MR. ROSEN: It comes up on this
12 application is what we're talking about.
13 MR. ELLIOTT: This is a new issue that
14 came up in this application.
15 MR. ROSEN: Yes.
16 MR. SIEBER: But it's common.
17 MR. ELLIOTT: It was not in the
18 application. When we discussed what kind of Alloy 600
19 repairs they had made in the past, this issue came up.
20 MR. ROSEN: Well, I'm referring to this
21 application. If there's a half-nozzle repair and a
22 horizontal orientation where the boric acid in the
23 primary system will be able to make contact with the
24 ferritic material or the pressurizer. But because
25 there is no mechanism to concentrate it, the amount of

1 corrosion on the ferritic material is expected to be
2 very low.
3 MR. ELLIOTT: That's clearly our position,
4 yes.
5 MR. SIEBER: And I think there's a fair
6 amount of experience that bears that out.
7 MR. ELLIOTT: That's true. First, we've
8 been making these repairs since the early 1990's here.
9 This is not a new type of repair.
10 DR. SHACK: But new sensitivity.
11 MR. ELLIOTT: Right.
12 MR. SIEBER: Something to talk about.
13 Thank you.
14 MR. BURTON: Thanks, Barry. The last
15 thing I will say about that. This is a new issue. It
16 wasn't in the SER. We're going to have a new SER
17 section for 4.7.4 that will document all of the issue
18 and the staff's resolution of it and everything.
19 Section 4.2, Reactor Vessel Neutron
20 Embrittlement, anything out of the ordinary that we
21 needed to bring up but I didn't want to just be silent
22 on this. So basically the embrittlement issues fell
23 into four general categories. Two of them were plant
24 heatup/cooldown curves and LTOP PORV setpoints. It
25 extended beyond the current term but not until the of

1 the extended operating period. The LTOP limits are
2 considered in part of the pressure/temperature curves.
3 Applicant uses staff-approved methodology to project
4 the P/T and LTOP limits to the end of the operating
5 period and determined that the vessel is okay. Tech
6 specs will continue to be updated as required by
7 Appendix G or H to ensure that the operational limits
8 remain valid and projected fluence levels. This is
9 all Barry's stuff. So basically we went through all
10 that and found everything was going to be okay.
11 That's two of the four issues associated with neutron
12 embrittlement.
13 The other two are pressurized thermal
14 shock and upper shelf energy. Beltline base metal
15 materials will be adequate as long as the PTS
16 reference temperature is less than 270. For beltline
17 circumferential weld materials, they will be adequate
18 as long as that reference temperature stays below 300.
19 They projected all this out to the end of the current
20 term, found that everything meets the PTS screening
21 material and everything looked okay.
22 For upper shelf energy, we used our Reg
23 Guide 1.99 Rev 2 and found that the beltline materials
24 projected to have an upper shelf energy above the
25 minimum 50 foot-pounds at the end of the extended

1 operating period. It meets the screening criteria and
2 everything is okay.
3 MR. SIEBER: What is your reference
4 temperature now?
5 MR. BURTON: What is it now?
6 MR. ELLIOTT: Excuse me. What's the
7 question?
8 MR. SIEBER: What's the reference
9 temperature now?
10 MR. BURTON: We say "As long as it's below
11 the ..."
12 MR. ELLIOTT: I don't know what it is now.
13 All we do is project. We use the neutron --
14 MR. SIEBER: You don't calculate now what
15 it is now. You just approve the projection.
16 MR. ELLIOTT: No, I don't calculate. I
17 just project for what it is at the end of the license
18 and then calculate that value.
19 MR. LEITCH: On the upper shelf energy,
20 there seems to be quite a bit of discussion about what
21 position I guess was the term that was used. There
22 was a 2.2 versus a 1.2. A lot of confusion in the
23 discussion about the fact that Fort Calhoun had
24 apparently used an incorrect approach initially. Then
25 they changed. I guess I had the impression that when

1 they changed to the correct approach they found an
2 even more conservative number like up around 56 foot-
3 pounds or something like that. Is that correct or can
4 somebody explain it to me? What was the confusion
5 there and what was the difference between the two
6 positions?
7 MR. BURTON: I remember that.
8 MR. ELLIOTT: They took the position so
9 they can answer it but I can explain. In the Reg
10 Guide there are two ways to calculate the drop in
11 upper shelf energy. You can either do it based upon
12 the chemistry and fluence of the material or you can
13 do it based upon surveillance data. That's the second
14 alternative.
15 When they originally put in the
16 application, they made some adjustments based upon the
17 surveillance data. When we talked to them about it,
18 they thought they were doing it to the Reg Guide and
19 they really weren't. They were doing something else.
20 So they had to go back and do it to using what the
21 chemistry was. That's why they had to go back to use
22 a different position in the guide which is to use
23 based upon the chemistry.
24 But we also asked them. It's okay to do
25 it with the chemistry but you also have to look at

1 this actual surveillance to see if it's predicting
2 what the guidance is in the Guide. That's one of the
3 other things that we asked them to do. So they
4 changed the methodology and then we asked them to
5 confirm that the surveillance data that they were
6 using would satisfy the guidance in the Guide.
7 MR. LEITCH: There's a whole lot of other
8 plants listed there that evidently they would base it
9 on. In other words, they don't have direct
10 surveillance data -
11 MR. ELLIOTT: That have six different weld
12 materials in their beltline. Unfortunately their
13 surveillance weld material has nothing to do with any
14 of those six welds. But there are other plants that
15 have surveillance material that are equivalent to
16 theirs. I thought this was the most important issue
17 in this whole area not only because I did it. But
18 because it was an important issue in the license
19 renewal.
20 In fact, I think they thought it was the
21 most important issue too because before they even put
22 in this application, they came to us two or three
23 years before this to discuss this issue of how they
24 should do the evaluation for PTS and what surveillance
25 material should be used to evaluate it.

1 We spent over a year or maybe two years
2 discussing this with them where we worked out two
3 things. We worked out a methodology for evaluating
4 surveillance material and also a methodology for
5 evaluating neutron fluence. They actually did this
6 before they put their application in because they
7 figured that this was going to be problem.
8 So we got all the methodology straightened
9 out before they ever put an application in. When it
10 came time for the application, they instituted the
11 methodologies and all they had to do was arithmetic
12 for the PTS Rule.
13 Now for the upper shelf energy, they
14 didn't do the same thing. They waited until they
15 actually put in the application before they did the
16 evaluation of the upper shelf energy. That's why they
17 started going back and forth. They could answer what
18 they did.
19 MR. LEITCH: I guess I had the impression
20 that Fort Calhoun was going to be very close to the 50
21 foot-pounds.
22 MR. ELLIOTT: They are pretty close.
23 Fifty-four foot-pounds is pretty close. It could be
24 51 also but it's 54.
25 MR. ROSEN: We've had this discussion

1 before. That's a screening number, right?

2 MR. ELLIOTT: Right, that's just a

3 screening number.

4 MR. ROSEN: That's just a number at which

5 you begin to ask questions if you are on the right

6 side of that number, there are no questions.

7 MR. ELLIOTT: I would just like to point

8 out that there's a difference between this screening

9 criteria for the upper shelf energy and for the PTS.

10 The upper shelf energy, we have a lot of plants that

11 are below the screening criteria for the upper shelf

12 energy. There are a lot of plants who have done

13 analysis and shows you can go down to 40 or 35

14 foot-pounds and still meet acceptable criteria.

15 We've never had a plant that went above

16 the screening criteria for the PTS Rule and showed

17 that they were acceptable. For the PTS Rule if you're

18 getting close to that limit, the only thing you can

19 really do is start cutting down the neutron fluence

20 and that's what plants do. They start putting in all

21 kinds of fluence reducer, methodologies so that they

22 can stay below that. That's an entirely different

23 screening criteria than the upper shelf screening

24 criteria.

25 MR. ROSEN: That's not exactly consistent

1 with what we've heard. I'm not saying what you're
2 saying is wrong but I think what we heard before and
3 I'm willing to stand corrected if I am wrong is that
4 the 270 degrees was a screening criteria.
5 MR. SIEBER: It is.
6 MR. ROSEN: If you were at 269.9, don't
7 worry about it.
8 MR. ELLIOTT: It is. That's true.
9 DR. SHACK: If you're at 271, you have a
10 problem, right?
11 MR. SIEBER: There's margin but the rule
12 says 270.
13 DR. SHACK: -- include analyses.
14 MR. ELLIOTT: The screening criteria has
15 margin in it. If you're 271, you probably could do
16 things to be okay but nobody's ever done it. What
17 people do is they do things to the core so that they
18 can reduce the neutron fluence that is hitting the
19 beltline. While in the case of upper shelf energy, a
20 lot of people have done the evaluations below the 50
21 foot-pound and shows that there is plenty of margin.
22 MR. SIEBER: Nobody's had to reevaluate
23 for the PTS.
24 MR. ROSEN: And you see what happened
25 there.

1 MR. ELLIOTT: There was one client that
2 tried.
3 MR. SIEBER: Okay.
4 MR. LEITCH: So I guess just to cut
5 through it though, the two positions and all that,
6 you're satisfied with what they used.
7 MR. ELLIOTT: Right. We even looked at it
8 our own way if you read the SER and we came up with
9 that it was okay. We did our own evaluation,
10 different than theirs for the surveillance material
11 and we came out okay.
12 MR. LEITCH: Okay. Thanks, Barry.
13 MR. BURTON: Thanks, Barry. Going into
14 Section 4.3, Metal Fatigue, you know with this one
15 there's a big on-going issue which is environmentally
16 assisted fatigue ("EAF"). We had a confirmatory item
17 that came out of this. I think we actually talked
18 about this this morning, about the surge line welds.
19 The inspection results, they'll determine exactly how
20 to proceed depending on what happens with the
21 inspection.
22 They're going to use on or more of these
23 four options which is all fine, normal kind of stuff.
24 If they use option four and that's part of the
25 confirmatory item, they'll submit an aging management

1 program to give us the details of exactly how they're
2 going to manage these aging effects. We had a
3 confirmatory item. To submit in the license
4 amendment, they said "Yeah, that's fine." So this
5 issue is resolved.
6 MR. ROSEN: And what we heard this morning
7 just to make sure I'm on the right page here is that
8 they are going to replace it.
9 MR. BURTON: Oh.
10 MR. ROSEN: Right?
11 MR. VAN SANT: We did not commit to that.
12 MR. BURTON: I didn't remember that.
13 DR. SHACK: It's the pressurizer maybe.
14 MR. ROSEN: But not the surge line?
15 MR. BURTON: It's a possibility.
16 MR. VAN SANT: There's on-going
17 evaluation. The commitment we made is to the program
18 but there are on-going evaluations. Our decisions
19 have not been made on that.
20 MR. ROSEN: But one possible maybe I heard
21 is that you are going to replace the reactor vessel
22 heads, steam generators, pressurizer and surge lines.
23 MR. VAN SANT: That is a possibility.
24 MR. ROSEN: All right. I wasn't hearing
25 wrong.

1 MR. BURTON: Replace, repair, sharpen the
2 pencil, manage. All those things are possible and
3 they'll evaluate it once they do those inspections but
4 basically that was their commitment. We found that
5 satisfactory so that issue is closed.
6 The other issue that came up here had to
7 do with the sampling system. We had a confirmatory
8 item from there too.
9 DR. SHACK: While we're on that issue, do
10 we have interim staff guidance yet on what is an
11 acceptable fatigue program?
12 MR. KUO: That is being worked on right
13 now.
14 DR. SHACK: I know you had some
15 suggestions.
16 MR. KUO: Well, the NEI made another
17 submittal to the staff. The staff is reviewing that
18 and we have committed to reassure NEI in July.
19 However we now just had a conversation with NEI that
20 we are trying to arrange a meeting with them and with
21 all our experts together and trying to make sure that
22 the data that everybody uses are the same, consistent
23 and the way we're using data are the same and
24 consistent. So we are waiting to have this meeting to
25 happen. Hopefully we can still meet our commitment in

1 July to issue the RAI.

2 MR. FAIR: This is John Fair. I think if

3 I understood correctly Dr. Shack's questioning

4 involved the option four what was an acceptable

5 inspection program. The reason that it is not

6 resolved is that the Section 11 has a non-mandatory

7 appendix which addresses this issue. We have some

8 technical concerns with that non- mandatory appendix.

9 Currently they are reviewing whether they

10 should make some changes to that appendix which we may

11 find acceptable. If we do get an acceptable Appendix

12 L, that will resolve that number four option. But

13 until that time on each license renewal review, we're

14 asking applicants to make the same four commitments

15 on the ones that they can show are good for 60 years

16 with the environmental fatigue evaluation.

17 DR. SHACK: If you don't like the ASME

18 Appendix L, you could write your own.

19 MR. FAIR: I could, yes. But I haven't

20 chosen to do that.

21 MR. KUO: But the bottomline is that we

22 are working on that issue.

23 MR. ROSEN: I'd be careful about writing

24 your own appendix.

25 MR. BURTON: That was one issue that came

1 up in Section 4.3. The other one had to do with the
2 sampling system. There is some guidance. USAS B31.1
3 has a limit of 7000 equivalent full-range thermal
4 cycles and if it's exceeded during the extended
5 period, the cycles for the affected portions are going
6 to tracked in the fatigue monitoring program ("FMP").
7 As part of that, sampling piping is going
8 to be analyzed and the stress calculation done to
9 determine the thermal stress range. We developed a
10 confirmatory item to make sure that all these analysis
11 results are going to meet the guidance in the B31.1.
12 MR. SIEBER: That's the code of record for
13 that point.
14 MR. BURTON: Yes. And they said "Yes,
15 fine, no problem" so we have that confirmatory items
16 resolved.
17 DR. SHACK: John, roughly what fraction of
18 the plants is B31.1 on and the other ASME groups.
19 MR. FAIR: I think it's somewhere closer
20 about half and half. I don't recall it off the top of
21 my head. There was a second paper that was issued a
22 few years back that discussed codes and standards for
23 the different paths and they do have a listing of
24 which plants were which code.
25 MR. BURTON: All right. That was all we

1 had for metal fatigue. Going to Environmental
2 Qualification, that is a TLAA. Applicant has an
3 equipment environmental qualification ("EEQ") program
4 that's consistent with our GALL EQ program. We found
5 everything to be okay there.
6 GSI-168, what I have just found out is
7 that I'm behind the curve here. I thought that
8 GSI-168 was still an open generic issue. I have found
9 out that in fact we have resolved this and RIS has
10 been issued as of May 2nd. So actually if you like,
11 I have Paul Shemanski here who can give you a brief
12 summary of what's in that risk and where we stand with
13 that. Did you want to do that, Paul?
14 MR. SHEMANSKI: If they want me to.
15 MR. BURTON: Do you all want to get a
16 brief summary of that?
17 MR. SIEBER: We already heard this.
18 MR. BURTON: You did. Okay, so you don't.
19 MR. SHEMANSKI: Well, actually. Paul
20 Shemanski. Prior to issuing the RIS, it was sent to
21 the Committee for review.
22 MR. BURTON: Okay.
23 MR. SHEMANSKI: No comments were received
24 and the RIS was issued on May 2nd so the issue is now
25 complete. The technical assessment is complete and

1 the issue is considered to be resolved.

2 MR. SIEBER: Right.

3 MR. BURTON: Why am I always the last to

4 know?

5 MR. SIEBER: Come visit us. We're just

6 like John Paul Jones. "I've not yet begun to fight."

7 MR. BURTON: So now we're all up to speed

8 on that. Next was Section 4.5, Concrete Containment

9 Prestress, this is going to managed by the containment

10 in-service inspection program. Surveillance is

11 performed in accordance with Subsection IWL. The

12 tendon inspections are one, three and five years and

13 then every five years after the initial

14 pre-tensioning. This is their regulation that

15 requires trend lines. The staff actually looked at

16 the recent trend lines for the tendons and found the

17 applicant to approach to managing the tendons

18 acceptable. No particular issues came up out of that.

19 MR. SIEBER: Maybe I could ask how many

20 tendons are out of service? Do you have any out of

21 service?

22 DR. GASPER: No.

23 MR. SIEBER: Usually, there's margin. You

24 have more tendons than you need.

25 DR. GASPER: Are these all available for

1 setting your pre-steps?

2 MR. SIEBER: Well to test them I think you

3 have to take one out of service.

4 MR. VAN SANT: Yes, you have to remove the

5 strand periodically but you put it back into service.

6 MR. BURTON: All right. Here we go.

7 Containment liner plate and penetration sleeve

8 fatigue, liner and penetration sleeves designed in

9 accordance with ASME. Fatigue loadings assumed in the

10 design. Cycling from these factors assume a one time

11 loss of coolant accident, 40 cycles from variation and

12 outdoor temperatures, 500 cycles of internal

13 temperature between shutdown and operating condition.

14 Liner experienced some buckling. The effect on the

15 liner fatigue was evaluated and found acceptable for

16 the extended period so we did look at that and found

17 that what they did was okay. There weren't going to

18 be any long term adverse impacts from that.

19 MR. ROSEN: Can you characterize this

20 buckling for me and what it looked like, where it was

21 observed and the extent of it somehow?

22 DR. FORD: And why did it buckle?

23 MR. BURTON: Why did it buckle? Do you

24 want to get the story first and then all reaction to

25 it?

1 MR. ROSEN: I'd like to know what it was.
2 Start with that.
3 MR. BURTON: Okay. Anybody? Your side.
4 MR. VAN SANT: Bernie Van Sant. This
5 buckling was part of the original fabrication of the
6 concrete containment. It was identified as part of an
7 inspection process. What exactly caused it -
8 MR. ROSEN: You still haven't
9 characterized it. How much is it? Where was it? The
10 extent? The circumferential extent? Was it vertical?
11 Horizontal? Give me the details.
12 MR. VAN SANT: It was basically a bulge in
13 the liner plate but my recollection is it was
14 approximately six inches to 12 inches in diameter. It
15 fell outside the half inch tolerance for containment.
16 MR. ROSEN: A bulge inward the liner
17 plate.
18 MR. VAN SANT: Yes.
19 MR. ROSEN: From inside --
20 MR. VAN SANT: My guess is that you had it
21 occur during the pour for containment that pulled that
22 piece of the liner out slightly. John, I don't know
23 if you remember how much. It wasn't a lot. We're
24 talking a matter of inches.
25 MR. LEITCH: I read someplace in the

1 application it read as much as three-quarters of an
2 inch. About an eighth of an inch had been predicted
3 but in this area it was three-quarters of an inch, I
4 believe.
5 MR. SIEBER: And that's been profiled so
6 you can do the stress calculation?
7 MR. VAN SANT: The stress calculations
8 were done for it. Basically this issue had to be
9 addressed as part of current license basis.
10 MR. SIEBER: Usually you profile it so you
11 can get the curvature. That's typical for that.
12 MR. FAIR: This is John Fair. I was
13 reviewer on this and what they did was they redid the
14 original evaluation of it with a buckle that was
15 assumed a little bit greater than what they actually
16 measured and did a fatigue evaluation and did
17 determine whether that had any adverse fatigue effects
18 on the liner plate and determined that they were well
19 below the fatigue usage factor limit.
20 MR. BURTON: Section 4.7, these are the
21 TLAAs. The SRP talks specifically about the ones that
22 we've done up until now. Then in SRP that we take
23 into account for other plant-specific TLAAs, this is
24 what came up for Fort Calhoun: the reactor coolant
25 pump flywheel fatigue; leak before break; high energy

1 line break and then this is the new pressurizer
2 J-groove weld repair that we talked about before. In
3 the final SER, we want to create a new section 4.7.4
4 to discuss that. That's all there is there.
5 MR. LEITCH: I had a question about leak
6 before break. On page 4-30 of the SER, it says that
7 "The applicant committed to perform a plant-specific
8 leak before break analysis prior to entering the
9 period of extended operation." Then later on it says
10 "The applicant commitment does not appear to meet 10
11 CFR 54.21(C)(1) which requires that..."
12 Then it lists three things but the second
13 one is that "The analysis has been projected to the
14 end of the period of extended operation." It sounds
15 like that's exactly what they committed to do. I
16 don't understand what the problem was with it. I
17 guess the problem has since been resolved but I just
18 don't understand. It sounds like they committed to do
19 option 2.
20 MR. BURTON: You are absolutely right. We
21 can give you a little bit of background with that.
22 Did you want to speak? As we were putting this
23 together, the question came up "How are we going to
24 issue a renewed license if they haven't given us the
25 analysis that the Rule requires them to give us?"

1 Just promising to give it to us didn't seem to be
2 appropriate.
3 What we did was we went back and looked
4 through our guidance documents and I have a backup
5 slide here. It's not in your package. What we found
6 is staff has approved industry document NEI 95-10.
7 There is a section in NEI 95-10, Section
8 5.1.4 that gives guidance that allows for a deferral
9 of the submittal of an analysis. It can be deferred
10 but it gives guidance and says if the submittal is now
11 going to be deferred, there is some information that
12 are going to have to provide and it's these four
13 things. In this case for the leak before break
14 evaluation --
15 Wait a minute. I have the wrong slide up
16 there. Hold on a second. I apologize. This is the
17 one specifically for leak before break but I think I
18 had more generic.
19 CHAIRMAN BONACA: You do. I believe it's
20 two slides after -- In your normal package, you have
21 it.
22 MR. BURTON: Is it?
23 CHAIRMAN BONACA: On page 57.
24 MR. BURTON: Fifty-seven. I have my
25 slides all screwed up now. I've been flying through

1 here. I can't find exactly what it is.

2 MR. LEITCH: Yes, it's fifty-seven.

3 MR. BURTON: Actually this is it. I'm

4 trying to think more generically. What it requires is

5 that:

6 1) They explain the methodology that

7 they're going to use for the analysis;

8 2) They have to provide what is going to

9 be the acceptance criteria to decide whether or not

10 the analysis is adequate;

11 3) They are going to have to identify what

12 the corrective actions they are going to be prepared

13 to take if the analysis does not show what they expect

14 it to show; and

15 4) Finally, they have to tell us when

16 they're actually going to submit the analysis. In

17 general terms, that's what that NEI 95-10 guidance

18 says.

19 What I have here is their answer to those

20 four things. In terms of methodology, leak before

21 break evaluation will whatever the latest criteria,

22 incorporate effects from all this stuff. So in terms

23 of methodology, this is how their analysis when they

24 submit it is going to be done.

25 The acceptance criteria that they're going

1 to use is going to be consistent with the leak before
2 break evaluation procedures in the SRP. Corrective
3 actions will include Tech Spec 2.1.4 which is RCS Leak
4 Rate Program. Finally when are they actually going to
5 submit the analysis? They are saying no later than
6 December 2006.
7 These answers satisfy the four criteria
8 that are in NEI 95-10 if you defer the submittal of an
9 analysis. I had another slide that talked about that
10 in general. That's what it is. So based on that
11 guidance, they provided the information that we were
12 looking for and we found that acceptable.
13 MR. LEITCH: Okay. I understand. Thank
14 you.
15 CHAIRMAN BONACA: And then it will have to
16 be reviewed and approved by the staff.
17 MR. BURTON: Yes.
18 CHAIRMAN BONACA: At some point in the
19 future.
20 MR. BURTON: That's right. When we get
21 this analysis, we're still going to have to go through
22 and do what we'd like to do now but we'll have to do
23 it then.
24 CHAIRMAN BONACA: One of the many things
25 that like you said will come later.

1 MR. ROSEN: This one involves NRR though
2 and not the regions but there's enough work for
3 everybody.
4 MR. BURTON: I actually skipped ahead a
5 little bit. I don't know how that happened. Oh, no,
6 because we had a question about leak before break.
7 MR. ROSEN: Got you off your game plan.
8 MR. BURTON: That's all right. Let me
9 back up a little bit to 4.7.1, Reactor Coolant Pump
10 Flywheel Fatigue. Again no issues came up with this.
11 They have two types of reactor coolant pumps. They
12 have GE as well as ABB. So they gave us the
13 information on the fatigue flywheel for both pumps.
14 The reviewer who is not here today did do confirmatory
15 evaluation of the fatigue and found it to be
16 acceptable. In accordance with Option 1 for TLAAs,
17 the current analysis is good for the entire 60 years.
18 That was one.
19 The next one was the leak before break
20 which we already talked about. The next one was high
21 energy line break. No issues of consequence came up
22 here. It was performed in accordance for the B31.11
23 Class I portions of main steam and feed outside
24 containment. The 0.1 CUF criterion for the postulated
25 pipe breaks. Existing pipe breaks are bound to Class

1 I sections for everything except the main steam
2 connections to the isolation valves. For those, the
3 CUFs at those locations they demonstrated will not
4 exceed 0.1 during the period of extended operation.
5 So basically there were no issues that came up here.
6 All right. That's pretty much it in terms
7 of the staff's review. The next thing I want to talk
8 about since this was the first GALL plant we went
9 through a lot of this stuff. I wanted to talk a
10 little bit about some of the Lessons Learned.
11 New LRA format reflects the new GALL
12 process but we found pretty much from the very
13 beginning that the format could use some improvement.
14 I mentioned to you before that when the application
15 was submitted in January and we gave it to the
16 reviewers, they said "No, we have some problems here."
17 It necessitated them to go back and make some
18 revisions. They provided that in April.
19 Concurrent with that, we went back to the
20 industry and we had some meetings with the industry to
21 look ways to improve the format. As you know, Bill
22 Watson is going to be talking about some of those
23 format changes as soon as I'm done. So we saw that
24 there were areas of improvements.
25 Most of these lessons learned, you are

1 going to really see them starting with the class of
2 2003, starting with Farley which is going to be
3 submitted in September. But some of this stuff again
4 because Robinson, Ginna, Summer, Dresden, Quad Cities
5 were right in behind Fort Calhoun, you may not see all
6 of this reflected in their applications because they
7 were caught in the backdraft there. But we recognize
8 that there were areas of improvements which we'll
9 share with you.
10 This was not an issue for Fort Calhoun I
11 should say but one of the issues we found was there
12 didn't seem to be a common understanding of what is
13 meant by "consistent with GALL". In fact when I was
14 here and briefed the full Committee, I gave you the
15 example that some applicants actually felt that it was
16 appropriate to use engineering judgement when saying
17 whether something was consistent with GALL.
18 Our understanding is if you have a
19 component that was evaluated in GALL that has the same
20 material, same environment, same plausible aging
21 effects and managed the same way, that's consistent.
22 What we found and a lot of times we found this one
23 when some of the applicants came in to give the staff
24 an initial overview of their application. We would
25 ask "What do you mean by consistent?"

1 I think the worse case is we had one
2 applicant that actually said "Consistent means we have
3 the same component." That's it. It may have a
4 different material. It may be exposed to a different
5 environment. It may have completely different aging
6 effects. But yet in their engineering judgement,
7 they're consistent. We recognized right away we had
8 a problem here.
9 Again we had some discussions with the
10 industry. I think we're all now on the same page.
11 You will definitely see that starting with Farley in
12 2003 that this issue has been resolved. But you may
13 see with some of the applicants after Fort Calhoun
14 some RAIs and stuff trying to better understand what
15 consistent with GALL means.
16 One of the things that we tried to do was
17 to more consistently document the staff's review. So
18 one of the things that we did was we developed an SER
19 template. As the reviewers started working with that,
20 in general they found it helpful but again there were
21 a lot of areas where they found that it could be
22 improved. As part of our update, you're going to see
23 changes to the template.
24 Basically what the template is is we tried
25 to standardized some of the introductory language and

1 some of the concluding language because it's pretty
2 much standard in terms of what our bottomline findings
3 ought to be. So there is no need to reinvent the
4 wheel.
5 Throughout this presentation we mentioned
6 that we found areas where the GALL report and the SRP
7 could be improved. We've identified that. The
8 bottomline found that using the GALL format has
9 results in some efficiencies in terms of the review.
10 We've been able to accomplish that while still
11 maintaining our safety focus. As I mentioned before,
12 you're going to see most of these lessons and most of
13 these improvement reflected in the Class of 2003
14 applications.
15 Also to mention, we had a workshop with
16 the industry and part of that workshop we talked about
17 some of the lessons learned that we had learned to
18 date. Since then we've had some more but the ideas
19 that we are a constantly improving organization and
20 you'll see that in the coming months.
21 DR. POWERS: You want to say "a learning"
22 organization. That's the appropriate buzzword in this
23 group.
24 MR. BURTON: Okay, "learning."
25 DR. FORD: Butch, we've asked this

1 question before but I forgot the answer. Can you give
2 us some idea when the revision of GALL is going to
3 come out?
4 MR. BURTON: I will turn to P.T. for that.
5 MR. KUO: We plan to have a revision of
6 these guidance documents including SRP, reg guide and
7 GALL in September 2004.
8 DR. FORD: FY 2004.
9 MR. BURTON: Okay. Just as a summary.
10 I'm sorry. Go ahead.
11 CHAIRMAN BONACA: Complete your
12 presentation.
13 MR. BURTON: In summary, we've identified
14 11 open items, 10 which were identified in the SER,
15 the one additional one with the pressurizer weld and
16 four confirmatory items. Right now, all the open
17 items are resolved with the exception of the big table
18 revisions. We still have a few things that the
19 reviewers just have to find the time to review.
20 CHAIRMAN BONACA: That's your review.
21 There is no disagreement.
22 MR. BURTON: Exactly. We have reached
23 agreement. We just need to make sure that they've
24 actually implemented that. So basically everything
25 except that one is resolved for the open items. For

1 the confirmatory items, all of them have been
2 resolved. The bottomline is with our experience with
3 the Fort Calhoun review we found that the use of GALL
4 has made the task review more effective and efficient
5 although there are areas where we can improve. We've
6 identified those areas, factored them into a schedule
7 for improvement of the guidance documents and I think
8 you'll see things get even better in the future.
9 CHAIRMAN BONACA: A little more than a
10 year ago, we used to have applications where we still
11 had for example large numbers of appeals for changes.
12 Now on this application, this is the first one with
13 GALL and I found that there were no contentious
14 issues. They were pretty much more a question of
15 communications than anything else had to be resolved.
16 Change is good I would say.
17 MR. BURTON: I would agree with that. I
18 think where license renewal has advanced to the point
19 where most of the issues have been identified now but
20 more things can happen. In some cases, there was some
21 contentiousness where we had to go to appeal.
22 However, what we've done through the ISG process and
23 well as more informal processes is that we have
24 reached resolution industry-wide to say "Here's how we
25 are going to deal with this situation" not only

1 technically but administratively too. We really are
2 starting to see some of the benefits to that now.
3 CHAIRMAN BONACA: So this gives you the
4 opportunity probably to do what Mr. Kuo was mentioning
5 before by looking at a different approach to make it
6 even more expeditious as far as the review which means
7 when there is agreement with GALL, a quick review up
8 front and focusing then the rest of the SER all those
9 issues which are different from GALL.
10 MR. BURTON: Exactly.
11 CHAIRMAN BONACA: And hopefully licensee
12 will tend to stay as far as they can with GALL because
13 that simplifies the application.
14 CHAIRMAN BONACA: Absolutely. That's
15 exactly what we're seeing and anticipating. Any other
16 questions? Okay. Thank you. I appreciate it.
17 CHAIRMAN BONACA: I believe we have Mr.
18 Emerson from NEI.
19 MR. EMERSON: This is Fred Emerson. Bill
20 Watson from Dominion will be giving the presentation
21 on standard format for NEI.
22 MR. BURTON: Dr. Bonaca, I think we need
23 a couple of minutes. They're going to be doing a
24 PowerPoint. They need some time to set that up.
25 CHAIRMAN BONACA: All right. Why don't we

1 take a 10 minute break. Off the record.

2 (Whereupon, the foregoing matter went off

3 the record at 3:11 p.m. and went back on the record at

4 3:21 p.m.)

5 CHAIRMAN BONACA: Okay. Let's resume the

6 meeting now. We have a presentation from Mr. Watson

7 of Dominion regarding the Standard License Renewal

8 Application Format.

9 MR. WATSON: Good morning. As already

10 said, my name is Bill Watson. I'm from Dominion but

11 I'm here on behalf of the industry to make a

12 presentation to you on the Standard License Renewal

13 Application Format.

14 Just one point of clarification, you heard

15 today about the Omaha License Renewal Application

16 Format and we're talking about standardization there.

17 Largely the standardization focus was using the

18 standard guidance of GALL and the SRP. What you're

19 going to be getting a presentation on now is the

20 Standard License Renewal Application Format that the

21 Class of 2003 worked on. You will not have seen any

22 applications under this format until September of this

23 year when Farley submits.

24 CHAIRMAN BONACA: Do you mean that we have

25 to have another training now?

1 MR. ROSEN: And also the implication is
2 now we get one of these for each class. We get a new
3 format.
4 MR. WATSON: I hope that's not the
5 implication. What we'll see here -- Beyond
6 convergence, exactly. We want this and expect this to
7 be the last standard format to use. It does
8 incorporate a lot of the lessons learned along the
9 way. All of them that we could think of are
10 incorporated at this point in time.
11 Just a brief history slide to get us
12 talking about what got us here, the initial guidance
13 that we know was 95-10 and a draft of the standard
14 review plan for license renewal. That's what Calvert
15 Cliffs and Oconee submitted under. It was realized of
16 course that more improvements were needed in this area
17 for the reviewers to get the information that they
18 needed in order to made an accurate determination for
19 reasonable assurance.
20 I should say this as well. GALL was
21 issued and a standard review plan was issued. As
22 plants and applicants started to use the GALL and
23 started to use the standard review plan, it became
24 quickly apparent that we were going to have to do some
25 more work in trying to standardize how the information

1 was presented. Yes, we had standard documents to use
2 for guidance on what goes into the application but how
3 the application looked was really up to the applicant.
4 We were starting to get a lot of questions from
5 reviewers and so forth on how to interpret that data
6 and where to find that data.
7 So the Plant X and Y demonstrate project
8 was born in early 2001. Fort Calhoun was the Plant X
9 pilot plant and St. Lucie was the Plant Y pilot plant.
10 The NRC stated their preference to the industry that
11 plants use the Plant X approach. As Butch said on his
12 Lessons Learned slide and a couple of other times
13 throughout his presentation, we realized that more
14 improvements were yet needed because we were getting
15 there in this evolving process but we weren't quite
16 where we needed to be.
17 In July 2002, the Class of 2003, those
18 applicants that plan to submit their license renewal
19 applications in 2003 and early 2004, got together and
20 under the coordination of NEI worked with the NRC
21 staff and reviewers which we think was an important
22 point of the participation by the reviewers to develop
23 a standard license renewal application format for
24 future applicants to use. That would improve both the
25 format and content of the applications.

1 The Plant X and Y demonstration project
2 concentrated largely on the tables in Section 3 but
3 one of the lesson we learned was that's not enough.
4 You need to be able to get from Section 2 to Section
5 3, from Section 3 to Appendix B, back and forward in
6 a fairly smooth and innovative fashion. What we did
7 with the Standard License Renewal Application Format
8 project was we concentrated on Section 3 and
9 developing the tables to present the data the way the
10 reviewers needed to have that data presented. Then we
11 went on to supplement Section 2 and Appendix B so that
12 we would have that smooth transition.
13 Going forward from September of this year
14 on, the industry expects to use this license renewal
15 application format and urges the staff also to go with
16 this format and not make any special requests for
17 changes to that format. We would like to use this
18 format and see how it works and get down the line
19 before we start doing any kind of changes that are
20 necessary.
21 As I mentioned, we first looked on Section
22 3 on the tables and then worked on Section 2 and
23 supplemented as necessary to support Section 3 and
24 Appendix B. But since that's the first section of the
25 application you come to after Section 1, I'm going to

1 talk about that first.

2 Notice I titled this slide "Major Items".

3 This is not everything we did but these are the

4 biggest bang for the buck items. In the interest of

5 time, I'm just going to cover those items today.

6 First of all, we included an intended

7 functions, abbreviations and definitions table so that

8 when we used intended functions throughout the

9 application and we used their abbreviations in the

10 tables, it would be clear understanding on the part of

11 the reviewer what we meant by the original intended

12 functions. If you go to your next slide in your

13 package, you'll just a clip of one of the intended

14 functions tables.

15 I would like to stress that for all of the

16 examples for the Standard License Renewal Application

17 Format, the format is what we concentrated on. The

18 type of content we put in there so there's an

19 illustration of what goes into the tables and what

20 goes into the blanks within the application. The

21 actual technical content is not something we focused

22 on. So if you're looking through these tables and

23 examples and say "I have one question on this

24 particular technical issue", we didn't spend a lot of

25 time on that.

1 I would say that each plant will have this
2 table and it will be in the same section. So when you
3 go from application to application and move forward,
4 you will always find this table in the same spot. The
5 content of the table will be different depending on
6 the applicant's needs.
7 Going back to Slide 3, you'll see I
8 bounces around a little bit just for the interest of
9 saving paper again. The next item was a discussion of
10 the applicant's approach to the ISGs tight up front.
11 The reviewers told us that Ginna had done that and
12 they found that to be very beneficial.
13 So we incorporated that into the standard
14 license renewal application Format. You will see in
15 Section 2.1 a section discussing the applicant's
16 approach to ISG right up front. Then you'll see it
17 also individually talked about in the programs for the
18 scoping and screening where those ISGs have their
19 largest impact.
20 MR. LEITCH: As I understand it, ISGs are
21 going to go away. Is that right? A temporary thing.
22 MR. KUO: After we revise the GALL SRP
23 documents, the ISGs will be incorporated into those
24 documents.
25 MR. WATSON: Right. At that point in

1 time, this section will just be empty basically
2 because it's not needed. But for now it is needed and
3 we want to standardize where the reviewers find it.
4 What we think would be helpful is if the reviewer does
5 an application and then they go on another application
6 or even the project managers can help with this, they
7 will know where to look for things because each
8 application will have the same content in the same
9 location. That's what we're striving for.
10 The third major item for Section 2 is we
11 enhanced the system descriptions to identify which
12 specific criteria of the Rule required the system to
13 be in scope. That's 54.4(a)(1), (2) or (3). That
14 also included system evaluation boundary descriptions.
15 So you can look at the drawings but also it's clear in
16 terms in a verbal description where the boundaries of
17 this particular evaluation or AMR really are located.
18 Then we included a table. This is not
19 new. I put that in parentheses. Applicants in some
20 way, shape or form had a component subject to AMR
21 table but we put it in a very specific section,
22 Section 2. It lists the components that are subject
23 to AMR and their intended function. This is the key
24 to connecting Sections 2 to 3.
25 If you look on the next sheet on page 5 in

1 your handout, you'll see a clipping from one of those
2 tables. It's our example that we use because of the
3 data that we had readily available to us at that time
4 was actually an engineered safety feature system not
5 an RCS system. It was an engineered safety feature
6 system and we used containment spray for that. That's
7 what you'll see for data throughout the examples of
8 the standard unless it's a new application format.
9 Just to point out that, you can see on the
10 left column that you have component type and on the
11 right you have intended function. Heat exchangers,
12 piping, pipe casing. I'm pointing that out now
13 because when I get to Section 3 you'll see the tie
14 between Section 2 and Section 3 which is readily
15 available data.
16 To get back to Slide 6, we also included
17 a results table usage and description and reference to
18 those tables. I'm sorry. I jumped ahead of myself a
19 little bit there. So that was Section 2 and those are
20 the major items at week two of the Standard License
21 Renewal Application Format.
22 Then we went on to Section 3 and that's
23 what this slide number 6 addresses. The first thing
24 we did was we included an internal and external
25 environments table. We found out that there was

1 confusion sometimes external air or gas and what do
2 you mean by all of that. So we decided to include in
3 the application a definition of the internal
4 environments and the external environments. If you go
5 on to slide 7, you'll see an example of the internal
6 environments and what do we mean by internal air, gas,
7 lubricating oil, raw water, sea water. On the next
8 slide, you'll see an example of equipping from the
9 external environments table, borated water leakage,
10 soil, external air. That's all included.
11 Again you will not see identical
12 information in tables from application to application
13 but you will see in both of these tables in the
14 applications going forward for Standard License
15 Renewal Application. That clarifies what we're
16 talking about with the environments and helps
17 eliminate a number of the questions that we've been
18 getting on those.
19 Back to slide 6, the next piece we put in
20 was a results table usage description. What we ended
21 up with which you'll see at the bottom of the slide
22 two tables. I know Fort Calhoun talked about three
23 tables. In fact, it's interesting. When we were
24 developing the tables for the Standard License Renewal
25 Application Format, we agreed that table 1 which

1 looked like NUREG-1801, Volume 1 would be reasonable.
2 Then the staff members and the utility
3 folks went off and developed what they thought the
4 actual AMR results table should look like. Then we
5 came together. When we came together, the tables were
6 remarkably similar. So it was very easy to combine
7 those two into the final table that you see as table
8 2 in this section. What that tells me is that we were
9 both listening to each other pretty well about what
10 was really needed, what the reviewers needed and what
11 we needed to provide.
12 What was asked for by the staff was if we
13 could at least for the first few applications put in
14 a description of how these tables are to be used so we
15 put it in the Standard License Renewal Application
16 Format. Where does the data come from? How do the
17 tables work with each other? How do you cross
18 reference back to GALL? So we did. We put it
19 standard section. It takes up a few pages but they
20 thought that would be beneficial to future reviewers
21 and also beneficial to the public when they look at
22 our applications and they don't know how to interpret
23 these tables. Now there is a section in there in
24 pretty good detail on how you use these tables. What
25 do they mean? What does the data mean?

1 MR. ROSEN: You only need to write once
2 well.
3 MR. WATSON: Right.
4 MR. ROSEN: So that's it.
5 MR. WATSON: That's right. Then what you
6 find is the next major section in Section 3. It's AMR
7 results divided into the six SRP "Super Groups". When
8 I say "Super Groups" that means of course RCS, ESF,
9 auxiliary system, steam power, conversion, so on and
10 so forth.
11 So the AMR results are divided into six
12 Super Groups and then into their individual systems,
13 structure and commodity subgroupings. For the case of
14 the standard, we had EFS as our Super Group that we
15 used for the example. Containment spray system was
16 the individual subgroup that we used in our example.
17 For each subgroup, we were asked to do
18 this also by the staff and the reviewers to assist
19 them in getting a good characterization of the
20 individual subgroups and also in getting the
21 information that they need for the SER brought into
22 one location. So for each subgroup, you're going to
23 see as you see on the fourth bullet a roll-up section
24 of the materials, environments, aging effects
25 requiring management and aging management programs.

1 Notice I said programs are by name but they are also
2 hyperlinks. They can go right out to the program for
3 each one of these subgroups. Then that can be taken
4 and placed into the SER for use by the reviewer.
5 Then of course the real heart of Section
6 3, the aging management review results tables. There
7 are two tables. Table 1 is a NUREG- 1801, Volume 1
8 style table. Table 2 is a plant-specific AMR results.
9 I would like to go and talk about both in just a bit
10 more detail.
11 Table 1 is based on NUREG-1801 table. In
12 fact, it really is GALL Volume 1 table with just a
13 couple of modifications to it. You see down below
14 that there is an item number column which is an added
15 column. When you look at this table, it really is the
16 table right out of GALL. Components from Section 2
17 are rolled up using the same SLP table format to
18 provide a leakage to or exception to the SRP. So
19 wherever there's something in the GALL Volume 1 table
20 or the SRP table, you will see a match when there's
21 alignment of any sort in this table 1 of Section 3.
22 The item number column we added just to
23 facilitate cross- referencing between Chapter 3
24 tables. I'll make that more apparent what that really
25 means in another couple slides. Then we added a

1 discussion column for clarifications and explanations
2 regarding the alignment with GALL. So this is really
3 a summary table. It's not the individual results of
4 virtually everything but it's a summary table of how
5 we align with GALL in a sense.
6 If you will go on to slide 10, you'll see
7 a picture of that table. Item number is all the way
8 over to the left. That was just a tracking number
9 again. It allows reference from table 2 to table 1.
10 Obviously it has the table number 3.2.1 and then the
11 first item is .01. The second item's .02. The third
12 item's .03.
13 For the Standard License Renewal
14 Application Format project, we used PWR data. So when
15 there's BWR in order to keep alignment with the GALL
16 Volume 1 table, we would put BWR only when we had no
17 data for PWR. So that's why you see that in this
18 table. But really the reviewer could take the GALL
19 Volume 1 table, take our table 1 in Section 3 and just
20 go down line by line and make a comparison. They are
21 aligned that way.
22 Like I said, we have the component
23 listings, the aging effect/mechanism, aging management
24 programs, further evaluation required if there is
25 further evaluation required as is stated right in GALL

1 Volume 1 and then a discussion column. The discussion
2 column lists first of all further evaluation required
3 information. I'm going to talk a little bit more
4 about that later. In other words, how we addressed
5 the further evaluation required as was talked about
6 for Fort Calhoun? Then any other discussion about how
7 we align with GALL. That's a summary table.
8 Then we go on to Table 2 which is your
9 next slide where the actual plant-specific AMR results
10 are contained. This table 2 provides AMR results
11 divided into the six Super Groups as you expect and
12 then into the individual systems, structural or
13 commodity subgroups.
14 It contains nine columns so we went from
15 five or six columns up to nine but that should make
16 sense. Obviously if we were having problems with a
17 five or six column format tables getting all the data
18 that was needed, we were going to need something else.
19 That's how we ended up with nine columns.
20 It provides a means to cross-reference to
21 table 1 that you just saw of our application, to
22 cross-reference to GALL Volume 1 and Volume 2 tables
23 and also to LAR Section 2 and to Appendix B. So these
24 tables integrate basically all the data either by a
25 reference or with the data that's directly contained

1 within the table.

2 It also contains a "Notes" column for

3 referencing. There's not actually notes contained in

4 that column. That's why the wording is like this.

5 It's a letter or number designator. I'll talk about

6 that in a little bit because obviously a lot of

7 information could be contained in that column and

8 these tables could blow up pretty big. I'm going to

9 talk a little bit more about the Notes later. The

10 Notes explain how you align with GALL. You're either

11 completely consistent or you're have exceptions and

12 here are the exceptions.

13 If you go on to slide 12, you'll see the

14 table. I'm going to through the nine columns very

15 quickly here but the first one here being component

16 type, heat exchangers (shell). Remember I said "We

17 were linked to Section 2." This column links us to

18 Section 2. If you go back to slide 5, you see heat

19 exchangers (shell) is the component type. Then when

20 you look at this table here, you see that as the

21 actual component. So there's direct linkage between

22 Section 2 and Section 3 through this table.

23 Of course, the intended function even

24 listed on the last slide that I showed you is pressure

25 boundary. There's the abbreviation for it. Material

1 in this case for the example is carbon steel. You see
2 the environments are listed. Again effects requiring
3 management, aging management programs. In those aging
4 management programs, that magenta indicates a
5 hyperlink so with the reviewers doing the electronic
6 reviewing of the application they can go right to the
7 aging management programs. So any time you see
8 magenta, it indicates a hyperlink.
9 Then there's the NUREG-1801 Volume 2 item.
10 What this indicates in this very first row is we have
11 a correspondence between GALL and the data you see
12 from the plant-specific row here. Then Table 1 item
13 column and then a Notes column. The Total number item
14 column is how you reference back to table 1. If you
15 click on the 3.2.1- 10, that table item on that very
16 first item, it would bring you back to table 1. If
17 you are doing a manual version, you could just go look
18 that back up. But you see that in table 2, it's heat
19 exchangers in component, pressure boundary. The
20 material's carbon steel. The environment's air. The
21 aging effect requiring management is loss of material.
22 The aging management programs is system walkdown. If
23 I go back to table 1 using that item number reference,
24 you will see the 3.2.1-10 right there up at the top,
25 the very first row. It is external surface of carbon

1 steel components, loss of material due to general
2 corrosion. Loss of material is the Aging Effect. The
3 aging management program is plant-specific. Further
4 evaluation is required.
5 Notice in the discussion column it
6 identified what the plant- specific program was,
7 system walkdown, which also corresponds with table 2.
8 The further evaluation required section were
9 hyperlinked to as well to talk about how we address
10 that further information that might be needed by the
11 reviewer to do that further evaluation. You can see
12 the tables are fully integrated.
13 Then the Notes column, it just has letters
14 or numbers in it. The letters indicate industry
15 standard notes. The applicants are not required to
16 use industry standard notes but we recognized as we
17 were putting this together that obviously there would
18 be a number of repeats from applicant to applicant
19 when you start describing how consistent you are with
20 GALL.
21 If the aging effect, the environment, the
22 aging management program and material was all
23 consistent, then you'd obviously be consistent with
24 GALL. So every one is going to have a note like that.
25 You might be consistent with GALL on everything but

1 the aging management program might take an exception
2 to GALL so there would be a standard note there. If
3 you see letters in the Notes column, that indicates to
4 you that it's an industry standard note. If you see
5 numbers, that means that the plants themselves had to
6 come up with some additional clarification on how they
7 align with GALL.
8 The threshold holds very well on this
9 alignment with GALL when we talk about that. I know
10 it was talked about earlier today too. Even to the
11 point where if you do a different revision to a
12 document that was put in GALL if GALL evaluated that
13 document and that document was an earlier revision
14 when GALL evaluated it, we're not saying we're
15 consistent. We'll say that program is consistent with
16 exceptions. And we'll say we're using a later version
17 of that document.
18 We're not going to mislead any reviewers
19 at all. The threshold is low. If you are not just
20 like GALL, then you're not consistent. If you have
21 some kind of exception, you have to explain that.
22 That's what the staff told us they needed and that's
23 what we put in the standard.
24 If we move on to slide 14 continuing with
25 the rest of the major modifications we made to Section

1 3, there's a Further Evaluation Recommended section.
2 The GALL Volume 1 says "Further Evaluation
3 Recommended" and the SRP also has that same column
4 since those tables are nearly identical. We
5 understood that the reviewer would need to have some
6 information in order to do that further evaluation.
7 So what we did was anytime the GALL or SRP table said
8 "Further Evaluation Required" yes for a matching item,
9 we have this section back in Section 3 that talks
10 about that Further Evaluation item and identifies what
11 we feel is all the data that's necessary for that
12 reviewer to make their evaluation on that.
13 You will notice that there's a second
14 bullet. If it's a TLAA you get referenced out to
15 Section 4 of the application to look at that TLAA if
16 that's the only further evaluation that was required.
17 I would also mention just to make things
18 even easiest, we ended up using a numbering scheme in
19 the Standard License Renewal Application such that if
20 the reviewer had the SLP open and was going down the
21 SLP table and there was a further evaluation column
22 yes and it referred you to a section of the SLP, it's
23 a numbering scheme that's identical to the section of
24 the SLP. So you will find the same numbering scheme
25 and the reviewer knows they have direct match between

1 the SLP and our explanation for that further
2 evaluation required. That just makes it even easier
3 to see the correlation.
4 There's a time limited aging analysis
5 section.
6 DR. FORD: Could I ask a question before
7 you get away from the AMPs?
8 MR. WATSON: Sure.
9 DR. FORD: I take it the GALL is the
10 bible, is correct. Yet in recent license renewal
11 application, you had questions. For instance, David
12 brought a question of phosphate on concrete. I
13 brought up a question of validity of one-time
14 inspections for instances for corrosion. How
15 compliant is this approach looking forward to take
16 into account differences in opinion as to the validity
17 of how you're attacking what is in GALL?
18 MR. WATSON: I think the best way to
19 answer this and I'll call on my colleagues to help if
20 I don't answer it completely is that I think each
21 applicant looks at the issue in front of them and
22 describes what their approach is to that particular
23 issue. Then the reviewer or evaluator can make their
24 assessment as to whether that meets their requirements
25 in terms of what was intended by GALL or whatever the

1 case may be.

2 DR. FORD: But the licensee will not take

3 the initiative if you like in making sure that their

4 application is fully technically correct. You will

5 just take GALL as the lowest common denominator. Is

6 that correct?

7 MR. WATSON: Go ahead, John. I know you

8 want to say something.

9 DR. FORD: Do you understand what I'm

10 saying that this is an evolving issue?

11 MR. RYCYNA: I'm John Rycyna. Any

12 applicant preparing a license renewal application is

13 going to do an aging management review and come to

14 their conclusions regardless of what GALL says. If

15 you match GALL and you agree with the GALL

16 conclusions, then you're going to document it as Bill

17 described in table 1. If you disagree with GALL,

18 you're going to document those conclusions.

19 DR. FORD: But I have the impression you

20 may disagree with what - - you put in a

21 chrome-containing alloy steel. Therefore the fact

22 will go down across the corrosion. So you are getting

23 relief when you say you give them exemption when you

24 go down the way. Your examination should be more

25 rigid, more complete.

1 MR. RYCYNA: The applicant's engineers are
2 going to come to their conclusions. They are not
3 going to accept a conclusion as valid just because
4 it's in GALL.
5 MR. WATSON: Right, I think I heard you
6 say unless I misinterpret it that if GALL says
7 something more minimal than we think is even needed
8 and we feel you need something more, we would be
9 obligated to put that in as part of the program.
10 DR. FORD: Okay. So you would be
11 obligated to take the initiative.
12 MR. WATSON: If we thought we needed it
13 for aging management.
14 There's a time limit aging analysis
15 section which identifies the TLAAs associated with the
16 Super Group and then references you out to Section 4
17 for further information associated with that. Then
18 there's just a general conclusion section about the
19 ability of the programs to manage the effects of aging
20 for the period of extended operation. So that's
21 Section 3 and the major changes we made to Section 3.
22 Now I'd like to talk about Appendix B.
23 Appendix B is actually divided into four sections. I
24 didn't put that on this slide but you will see as we
25 go through that there's an introduction section, aging

1 management program section, TLAA aging management
2 program section also called data support and a
3 reference section.
4 The introduction section which is included
5 on this slide has an overview component which just
6 gives you kind of a road map for how you get through
7 Appendix B. There's a method of discussion
8 subsection. I will talk about that in more detail
9 because there's a point of clarification we need to
10 bring out. Butch alluded to it a little bit earlier
11 this morning and I'm going to expound on that in just
12 a bit. Notice that it's with reference to what we
13 mean by consistent with GALL, consistent with
14 exception or plant-specific. I'll talk about that in
15 just a few minutes.
16 Quality assurance program and
17 administrative controls description section. It was
18 mentioned earlier also by Butch that what Fort Calhoun
19 did was put up front a description of our quality
20 assurance approach to license renewal if I understood
21 this correctly. This is what the Standard License
22 Renewal Application does for sure.
23 Administrative control is an approach to
24 license renewal as in GALL. Within that under the
25 quality assurance are a corrective actions piece. So

1 that we don't have to repeat it in virtually every
2 program, the same thing over and over again if you
3 look at GALL, pretty much that's the way it goes.
4 Corrective actions is corrective actions in
5 administrative controls. We accepted that and put
6 that up front.
7 Then there's an operating experience
8 section. What we use this for is just to really focus
9 a little bit with the aging management review.
10 Extrapolating experience and plant-specific operating
11 experience was used to do the innovative plant
12 assessment.
13 Here we like to focus the operating
14 experience on the programs to show if the programs are
15 working. What enhancements are needed to the programs
16 based on operating experience? What you're going to
17 see is more of a program focus to this operating
18 experience. That's what we believe was intended by
19 GALL when we read the operating experience. We set
20 that up front.
21 Then there's the aging management programs
22 list. It identifies which programs are new for
23 license renewal and what one were already existing at
24 the plant. It's listed in the alphabetical order just
25 for the reviewer to reference more easily.

1 Continuing on to the next slide, there is
2 a TLAA management programs list that follows the
3 regular aging management programs. Then there's the
4 list of aging management programs correlated to GALL.
5 It's in the area of GALL so in the left-hand column it
6 lists the GALL programs in the order of GALL. In the
7 right-hand column, it lists the plant-specific
8 match-up so that helps the reviewer see if they are
9 reviewing programs how we aligned with GALL and what
10 programs satisfy which GALL programs. Then after that
11 you would see of course just the plant-specific where
12 there is no alignment to GALL so first is the
13 alignment and then the no alignment.
14 Then the aging management programs section
15 gives you your aging management programs descriptions
16 and includes the TLAA aging management programs with
17 the three that are hitting GALL basically under that.
18 I just want to spend another couple
19 minutes talking about this method of discussion
20 section. What the method of discussion section does
21 is it defines for the reviewer what they can expect to
22 see when they're reviewing the programs when they look
23 at the data that's in Appendix B of the application.
24 Remember there are three conditions we talked about:
25 that the aging management program is consistent with

1 GALL; that the aging management programs is consistent
2 with exception to GALL; or that the aging management
3 programs is just a plant-specific program.
4 If the engineering program is consistent
5 with GALL or even consistent with exception, it will
6 have the following subsections. There's a program
7 description which you'll see even in plant specific
8 programs. There's a NUREG-1801 consistency statement
9 which in the case of where it's consistent with GALL
10 it's just going to say it's consistent. We were
11 trying to standardize this outline format for Appendix
12 B. Exceptions to NUREG-1801 are defined. In the case
13 of being consistent with GALL, there would be none.
14 There is enhancements again, operating experience and
15 conclusion.
16 That's what you'd expect to see when the
17 aging management program is consistent with GALL.
18 There would not be element descriptions when a program
19 is consistent with GALL because all we'd be doing is
20 saying the same that GALL says wasting a lot of paper
21 and not benefitting anybody.
22 DR. SHACK: I wouldn't expect to see
23 exceptions to 1801.
24 MR. WATSON: Under this particular one, we
25 just wanted to standardize our approach whether we

1 took exception or not just so the sections are the
2 same so we wouldn't confuse the reviewers. You're
3 absolutely right. There would be no exceptions when
4 you're consistent with GALL. I understand that could
5 be confusing.
6 CHAIRMAN BONACA: Would you have
7 enhancements?
8 MR. WATSON: You could have enhancements.
9 MR. ROSEN: What does that mean like
10 better than GALL?
11 MR. WATSON: No, not necessarily. There
12 could be cases where you did something a little bit
13 different than GALL just to make it a little bit
14 better. But more often than not, you might say "In
15 order to be consistent with GALL, I'm going to need to
16 make these changes to my program and then I'd be
17 consistent with GALL." Those would go into your
18 commitments. That would be an enhancement to your
19 program.
20 If the aging management programs have some
21 exceptions that's described to the one that's
22 described in 1801, you're going to have the same
23 sections as above. But what's really important and I
24 think this is the real benefit of this change in
25 format is if you're not consistent you will stay where

1 you are not consistent exactly and then what
2 exceptions you're taking to GALL if you're taking any.
3 But that's not enough.
4 What we've done is we've actually stated
5 that in terms of the program elements affected. We
6 figured that when GALL was developed these ten
7 elements or attributes which ever document you're
8 referring to were used to evaluate the programs. We
9 are using those exact same elements to evaluate these
10 programs when we're not exactly consistent with GALL
11 so that the reviewer can say "Okay, there's a change
12 in the confirmation process. There's a change in the
13 detection of aging effects." So we describe what the
14 exception is and then we provide the element
15 descriptions so that the reviewer can make an
16 assessment of whether they feel this is adequate or
17 not.
18 It's the same with enhancements. We don't
19 just describe an enhancement. We describe an
20 enhancement in terms of the program elements that are
21 affected by these enhancements. Then there would be
22 the operating experience and conclusion sections.
23 We wanted to make sure that was clear
24 because that's going to look different than what
25 you've seen today. It's going to be more than some of

1 the applications that you've seen up to this point in
2 time but it will not be ten elements for every program
3 regardless of whether they are consistent or not
4 because that's just wasteful.
5 If the aging management program is
6 plant-specific on the other hand, then you will see
7 the program descriptions as I mentioned and all ten
8 program elements will be described. Any enhancements
9 that are even being made to the plant-specific program
10 in order to be adequate for the period of extended
11 operation will also be expressed in terms of program
12 elements affected. Notice there's not an operating
13 experience section here because that is one of the ten
14 elements that you find if you did the evaluation that
15 way.
16 Then there is a conclusion about the
17 ability of the program to manage the effects of aging
18 for the period of extended operation. We believe this
19 type of approach in Appendix will really help to take
20 maximum advantage of GALL and approve efficiency for
21 the reviewer and get them all of the information that
22 they need.
23 In summary, we believe that the proposed
24 standard format is intended to promote review
25 efficiency with a systematic integrated across

1 sections presentation of system, structure and
2 component aging management review data. In addition,
3 the information that can be directly used to develop
4 the SER is consolidated in specific locations within
5 the application just to make that easier for the
6 reviewer.
7 In short, we took all these lessons
8 learned that we heard from the reviewers and put them
9 into this standard application. We believe there's
10 going to be some real advantages to this. It's a real
11 efficient document.
12 CHAIRMAN BONACA: Good. Anything that can
13 simplify the process, that's great.
14 MR. WATSON: Questions.
15 MR. LEITCH: My question is really for the
16 staff. What is your impression of this? Do you have
17 to review this or do you just encourage it or what's
18 your regulatory position?
19 MR. KUO: Actually, I was just going to
20 make a remark. This is no longer the proposed
21 standard format. The staff has completed this review
22 and endorses it.
23 CHAIRMAN BONACA: And we have already
24 received training. Right now. I think it was
25 somewhat different from what we've seen for Fort

1 Calhoun but I can see how it builds on that. It's a
2 further step towards a standard format.
3 MR. WATSON: Thank you.
4 CHAIRMAN BONACA: Now just before we
5 adjourn, I would like to just go around the table and
6 see if members have any specific comments regarding
7 the Fort Calhoun application. I will start with you,
8 Vic.
9 DR. RANSOM: This is one of my first
10 introductions to license extension. I think most of
11 the issues that I had a concern with were answered in
12 the discussion. Generally it seems like this whole
13 process is one of a qualitative examination of a plant
14 for license extension to more or less assure that it
15 meets somewhere close to the original design basis.
16 I still have a little bit of concern that
17 I think was expressed by some of the staff here
18 earlier that what has happened to the original safety
19 margin. That margin was presumably selected to result
20 in a 40 year life time. It would seem that there are
21 some situations where the margins of safety must be
22 less than what it was intended to be originally. It
23 would be nice to see some way of quantitatively
24 addressing that. I don't know if that's possible.
25 CHAIRMAN BONACA: The regulatory margin is

1 not supposed to be reduced.

2 MR. KUO: The first principle of the

3 license renewal rule is that the current licensing

4 basis is adequate to maintain the safe operation of

5 the plant with the exception of detrimental effect of

6 aging.

7 Then the second principle is that this

8 current licensing basis shall be maintained throughout

9 the extended period of operation. Depending on how

10 you define a margin in terms of safety of the plant,

11 the current licensing basis that defines it. The

12 licensee is obligated to meet the current licensing

13 basis.

14 CHAIRMAN BONACA: Graham.

15 MR. LEITCH: Yes, I guess I had one

16 question that I forgot to ask earlier. License

17 conditions, are there any other than the standard

18 license conditions that you foresee in this at the

19 moment?

20 MR. KUO: I think recently we added one

21 more license condition. We have asked all the new

22 applicants to provide us a list of commitments. We

23 now include that list in our SER. They are including

24 the list in their FSAR supplement. Then we also

25 include that list in the Inspection Procedure 71003.

1 So the new license condition is that when they finish
2 any items on the commitment list they will let the NRC
3 staff know so that the NRC staff can go out and
4 perform the inspection. This raises the question of
5 how do we know 10 or 20 years after the renewal
6 license is issued and it potentially could happen that
7 nobody remembers it.
8 MR. ROSEN: The way you said that was
9 great. It just seems to me that there is one nuance
10 that could even improve it. You said "You now have a
11 requirement for them to let you know when they've
12 completed the commitment."
13 MR. KUO: Correct.
14 MR. ROSEN: Wouldn't it be better to have
15 a requirement for them to let you know when they were
16 going to complete it, for instances, if they were
17 going to do a test in six months or three months?
18 That way you could prepare yourself, headquarters and
19 the regions to be participants rather than finding
20 after.
21 MR. KUO: This has to go to the
22 bureaucratic language versus the regulatory
23 requirement. We don't have such a regulatory
24 requirement.
25 MR. ROSEN: That's just my thought. It

1 would be better to participate than be advised after
2 the fact that a commitment has been made.
3 MR. KUO: Yes. Understood.
4 MR. LEITCH: I guess generally I had a
5 number of questions but I think they were all
6 satisfactorily answered between the staff and the
7 licensee. I appreciate their presentations. I guess
8 I expected to see a little more improvement in the
9 efficiency of the process with the first GALL. I
10 thought there might be a step change I guess is what
11 I'm saying.
12 I think we're gradually improving the
13 process. Some of the benefits that we'll see from
14 GALL are yet future. I didn't see a whole lot of
15 efficiency, quality. I'm talking about efficiency of
16 the process. I didn't see a great improvement in the
17 efficiency of the process yet. I see a lot of places
18 where there will be improvement in efficiency. This
19 standardized format that we talked about will be
20 another significant improvement. I guess I had
21 perhaps over optimistically thought we would walk in
22 here and see a major step change of the efficiency of
23 the process.
24 One of the things that I guess we have to
25 decide at this point is whether an interim letter is

1 appropriate. I for one see no reason for an interim
2 letter. That's about it.
3 CHAIRMAN BONACA: Thank you. Steve.
4 MR. ROSEN: I don't have anything to add.
5 CHAIRMAN BONACA: Okay. Tom.
6 DR. KRESS: Well once again we serve as an
7 audit function to see if the staff is doing a good
8 comprehensive job. My impression was this was another
9 fine comprehensive job and I see no disagreements I
10 have with what the staff findings are with the one
11 possible exception of your issue with the spray
12 nozzle. I haven't made up my mind on that one but
13 we'll hear from that one later.
14 I think it was a good job. I do some
15 efficiencies by following the GALL format. I thought
16 the input from the industry was significant on the
17 standard review plan. Both of those will make for
18 this a more efficient process. I'm really encouraged.
19 The license renewal process is on a good track. I
20 agree with the staff with after they close the open
21 items that this particular extension should be granted
22 without any problems.
23 CHAIRMAN BONACA: Yes, the spray by the
24 way there was a separate conversation and I was told
25 that the licensee will update documentation. With

1 staff, we recognize that they are still relying on the
2 spray function. It can be accomplished without a
3 spray head to provide the cooldown necessary in 72
4 hours which I believe is possible.
5 That still remains however as a mission of
6 the staff and they should really reflect on and give
7 us some views of are all systems created equal. You
8 have means that you can credit at times but they're
9 not necessarily the optimal one. Should any one of
10 those means be used to justify not replacing or
11 monitoring a component? That's an important issue.
12 MR. KUO: That's part of the staff review.
13 During the break time that Muhammad told you that we
14 have talked to them already. For the future review,
15 certainly we will look at all the options that's
16 available. For this particular one, we're going to
17 incorporate whatever the information we received from
18 the applicant into the full issue.
19 CHAIRMAN BONACA: But at some point I
20 would like to see if you on a couple of items would
21 send guidance on what you would do. You may have
22 still again some backup approaches for doing some of
23 these kinds. It may not be really the one that you
24 want to see affected in a plant that is supposed to
25 meet all the licensing phases.

1 DR. KRESS: I agree with Graham that I see
2 no reason for interim letter.
3 CHAIRMAN BONACA: Dana.
4 DR. POWERS: Of course the license renewal
5 process has been put together very well. I hate it
6 miserably because I can't harass Butch about anything.
7 He did too good of a job.
8 MR. SIEBER: He makes stuff up.
9 DR. POWERS: There's no question about it.
10 It's still an extraordinarily labor intensive process.
11 So the challenge this Committee needs to start
12 thinking about is are there technologies that are
13 available now or will be available in the future or
14 anticipated to be available in the future that will
15 ever get rid of this labor intensiveness.
16 The staff is just about milked as much out
17 of it as it can through formalism and process and
18 guidance. Undoubtedly you can keep refining it a
19 little bit here and there but you're not going to make
20 the big leaks and bounds in the labor intensiveness.
21 Then that's something that the Agency has to look at.
22 DR. KRESS: I think it's self-correcting.
23 We'll run out of plants to extend the license to.
24 DR. POWERS: That is true but we may get
25 to the last one just as it happens.

1 CHAIRMAN BONACA: That's a very good
2 point.
3 DR. POWERS: We have to inject some more
4 fun into these things.
5 MR. ROSEN: This is where you were headed.
6 I really did think you were headed towards asking the
7 question. What can ACRS do to limit our man hours?
8 DR. POWERS: It is clear that the ACRS has
9 invested heavily in the license renewal area. It has
10 been for at least four years. But we're kind of stuck
11 because it's a statutory function for us so we had to
12 do it. Now it's been a pleasant exercise in the sense
13 that it was very well organized from the start and
14 it's shown a continuous improvement.
15 But I think we've gotten to the end of our
16 string here. I just don't see anything in the offing
17 that gives us great strides here in the next couple of
18 years on this stuff. Maybe it would be kind to
19 sometime get together with the staff in a more
20 collegial sense and just kick around "Is there any new
21 technology with a little bit research to be brought
22 into this thing that would make it better"and perhaps
23 even talking with NEI and people like that. Are there
24 things that we can do that are radically thinking out
25 of the box because this refinement we've taken it just

1 about as far as we can.

2 CHAIRMAN BONACA: Some thoughts. There

3 are some classes of more recent plants, such as

4 Westinghouse four-loop PWR with 3400 megawatt

5 thermals. There are so many similarities. If that's

6 true however you always get defeated when you get to

7 the balance supplied.

8 DR. POWERS: If we're claiming to be

9 risk-informed if the one thing we've learned from risk

10 analysis is I don't care how similar the plants are,

11 the risk is always dominated by the differences and

12 the unique plant-specific features. So saying that's

13 risk- informant I don't think buys us any here. I

14 think we've pushed that just as far as we're going to.

15 CHAIRMAN BONACA: By the way as far as the

16 ACRS is concerned, I think this new format at least in

17 the beginning was even more challenging because they

18 had to go back to GALL.

19 DR. POWERS: Your old dogs and you're hard

20 to teach new tricks. That's all there is to it.

21 CHAIRMAN BONACA: On an application, we

22 had all the information there.

23 MR. SIEBER: Now you have more binders.

24 DR. POWERS: We talked about that and I

25 think Vic here hit it on the head. License renewal

1 has become a discipline in itself. You have to get a
2 four year college degree to be all the background
3 information just to read the application nowadays.
4 That's absolutely and that's probably a good thing.
5 It keeps Butch employed and off the streets at night.
6 It's an investment that the Agency probably just can't
7 keep. It's not that they can't do it. It would nice
8 if we could find a way to do it in a more efficient
9 manner. I just don't see anything on the horizon
10 right now. This is worth brainstorming a bit about.
11 MR. ROSEN: For both the staff and the
12 Agency.
13 DR. POWERS: Oh, yeah. Everybody has this
14 cost. The licensee has this cost. We've done about
15 as much as we can.
16 CHAIRMAN BONACA: And the industry has
17 made a major effort.
18 MR. ROSEN: You tell me it's statutory.
19 That means we have to go and get the Atomic Energy Act
20 changed to something. I'm not sure that's right. I
21 just wonder if we don't have more flexibility than
22 that.
23 DR. POWERS: It's because you're young and
24 inexperienced.
25 MR. ROSEN: The latter, true.

1 CHAIRMAN BONACA: Peter.

2 DR. FORD: I was only here for a couple of
3 hours. However I don't know if it was discussed but
4 I still have a lingering concern about the quantities
5 of rationale for one-time inspections. Why? Where?
6 When? I don't know if it's in this license renewal
7 application or not. That's a lingering generic
8 concern that I have. That's all.

9 CHAIRMAN BONACA: One thing that came
10 clearly in the review is rely on GALL. GALL has quite
11 a crisp definition of one-time inspection. Granted,
12 it doesn't provide quantitative information.

13 DR. FORD: It's the quantitative aspect
14 that I'm concerned about.

15 CHAIRMAN BONACA: But it would still be an
16 issue to discuss here.

17 DR. FORD: When, where and why.

18 CHAIRMAN BONACA: Jack.

19 MR. SIEBER: I think everybody has pretty
20 much said the kinds of things I would say that I
21 differ in a little bit of a way. First of all, I
22 thought the application and the SER were well done and
23 it was easy for me to read. There were fewer requests
24 for additional information than we've had in the past.
25 The number of open items were down to two or three now

1 which I think is pretty good.

2 I agree we don't need an interim letter.

3 There isn't anything that we could say that won't

4 appear on the record here anyway. There were a couple

5 of noteworthy things. As you read through the

6 application and the SER obviously to each of us comes

7 questions to mind about various issues that are

8 identified. I found that the resolution of those

9 questions was clearer in this SER than perhaps some

10 previous ones.

11 When I was done, I had a shorter list of

12 things that I didn't understand. The only thing that

13 I truly was buffaloed on was the blowpipe which we

14 used to call spare penetration. So I scratched the

15 few hairs that I have left trying to figure out what

16 that was.

17 I would like to look at a little bit the

18 efficiency aspect. I'm selfish enough that I never

19 even thought of how hard the staff works or the

20 licensee works and I concentrated only on how hard I

21 worked. We fill out timesheets so I looked at the

22 timesheet on this one compared to the timesheet for

23 some previous plants and either I'm getting smarter or

24 the process is getting more organized or the SER and

25 the application were better written. But I actually

1 spent maybe 20 percent less time on this one or 30
2 percent maybe than I did on for example the Hatch
3 plant which to me was the most challenging one for me
4 to do.
5 So I would say that things are getting
6 more efficient from our internal ACRS viewpoint but
7 perhaps not the staff because they're inventing
8 process as they go along. On the other hand, I think
9 that they are more complete now than they were
10 previously. To me that's an improvement in the
11 program. I think the whole thing was very
12 professionally done. I have no open issues to
13 identify to you.
14 CHAIRMAN BONACA: Okay. And from my
15 perspective I can only echo what you said. I felt
16 that the application was clear. I think more than
17 anything else to me it has conveyed a real effort on
18 the part of the applicant to meet the requirements and
19 to close the issues. That was positive because that's
20 going to set the stage on whether or not applications
21 are going to be approved more promptly.
22 You may remember a year or a year and a
23 half ago there was a lot of contentious issues. The
24 relevance to that is when you have all those
25 contentious issues you just need a lot of effort to

1 converge. This converged well.

2 So far as the open issues, many of them

3 actually had to do purely with a need for the staff to

4 review them yet not necessarily a disagreement on the

5 closure. I found the SER very well written and I must

6 really compliment Butch for his level of knowledge in

7 the presentation. It was very informative. It didn't

8 put any of us to sleep which was something to be said.

9 I heard from Mr. Kuo that they're

10 attempting to see another step change in the

11 efficiency of the process. So as Dana said, we're

12 looking forward to any efficiency you can bring to the

13 process.

14 MR. KUO: That's what we've been doing but

15 we haven't really completed yet. We are an

16 organization to tell the truth and we constantly think

17 of ways to improve our efficiency in the process. Now

18 especially we thought that we were going to cap the

19 number of applications and given time at eight. But

20 it looks like it's not a go. We actually are looking

21 at a budget for capping to 10 or capping to 12. As

22 long as we are getting more applications, we have to

23 think of smarter ways to handle this type of

24 application now.

25 CHAIRMAN BONACA: But I would like to say

1 one thing. Much of what we are spending time in the
2 past year and a half reviewing is always the same
3 issues, fans and housing and cooling houses and 2/1.
4 They are the same debates and issues raised again. To
5 the degree to which these issues are converging and
6 people are agreeing from the applicant, I see much
7 less substantive issues. That's comforting. It's
8 going in the right direction.
9 MR. KUO: It's my dream, maybe it is a
10 dream, that a couple of years down the road all the
11 applications will be at least 90 percent consistent
12 GALL. Then the process will really improve there. We
13 will spend relatively little time in reviewing the
14 applications.
15 CHAIRMAN BONACA: That will help. With
16 that, unless there are additional comments.
17 MR. LEITCH: Just one quick comment. One
18 of the things that we sometimes try to do is give the
19 applicant some guidance as to what would be of
20 interest to us when you come to the full committee
21 meeting. I'm not sure what the date of that is. A
22 couple of months in the future, I guess.
23 One of the things that I like to hear
24 about at those meeting is what the plant's position is
25 as far as how to maintain these commitments. How they

1 are going to be scheduled and tracked? In other
2 words, when you get the license renewal, that's really
3 not the end of the game. It's the beginning of a long
4 process. Over time the plant will be modified. How
5 are those modifications factored into the program?
6 How is the program maintained current? How are these
7 various commitments going to be implemented?
8 Just perhaps a word or two about the
9 staffing. Is there someone whose mission in life is
10 to see that this program follows through from now
11 until the end of the 40 year period and beyond? That
12 kind of what I'll call the "implementation" after
13 license renewal is granted, that kind of issue would
14 be interesting for me to hear at least at the full
15 Committee presentation.
16 CHAIRMAN BONACA: Any other comments.
17 MR. GAMBHIR: I certainly very much
18 appreciate the positive comments that you made about
19 the application and the SER. I do want to take a
20 minute here to thank Butch. I think he is the one who
21 worked very hard in driving us to the standards to
22 make sure that we got to this point here where you saw
23 the ownership from the reviewers when they were
24 talking about it because I'm aware of the discussions
25 that took place earlier but today they had the

1 ownership. Our job was to provide that information.
2 Also in putting together the application,
3 the help we got from a very experienced staff that we
4 have here from Fort Calhoun as well as CNS and I'll
5 also say the NEI staff that worked very well with us
6 on this thing, all of this has helped us in bringing
7 a quality application to you.
8 With respect to implementation, I do have
9 an action item defined for the plant. That's how I
10 think because this is an implementation. This is the
11 beginning. This is not the end. You got a piece of
12 paper. That's only a license to keep going.
13 Mr. Kuo and other being on the license
14 renewal they have been extremely helpful. We're
15 certainly look forward to the full Committee meeting.
16 Hopefully you get that scheduled in October so we can
17 get the license renewed. The time is not scheduled.
18 We certainly appreciate your help in delivering this
19 too. Thank you.
20 CHAIRMAN BONACA: Thank you for your
21 exaltations and any other comments.
22 DR. POWERS: Well, just one. People keep
23 saying good things about Butch. He's going to get a
24 big head and we're not going to be able to live with
25 him.

1 CHAIRMAN BONACA: I know.

2 DR. POWERS: Just wait until the full

3 Committee meeting comes.

4 MR. BURTON: You're relentless. Do you

5 know that?

6 CHAIRMAN BONACA: With that, the meeting

7 is adjourned. Thank you.

8 (Whereupon, the above-entitled matter was

9 concluded at 4:27 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.

Rebecca Davis

Rebecca Davis
Official Reporter
Neal R. Gross & Co., Inc.

Standard License Renewal Application (SLRA) Format

Bill Watson – Dominion

June 11, 2003

History

- Initial Guidance = NEI 95-10, NUREG-1800 SRP-LR
- Early 2001 = Plant X & Y Demonstration Project
  - Fort Calhoun - Plant X (preferred by NRC Staff)
  - Improvements realized, more to be done
- July 2002 = Class of '03 & NEI worked w/NRC to develop a standard LRA format for future applicants to improve LRA format & content
  - Concentrated on Sections 2, 3 & Appendix B
  - Most time spent on Section 3 tables
- Sept. 2003 = Going forward, industry expects to use SLRA (NEI 95-10 revision will include SLRA)

Major Items

- <u>Section 2:</u>
  - Intended functions, abbreviations & definitions table
  - Discussion of applicant's approach to ISGs
  - Enhanced system descriptions identify which criteria require the system to be in scope, i.e., 10CFR54.4(a)(1), (2) or (3) and include system evaluation boundary descriptions
  - Components subject to AMR table (not new)
    - Lists components subject to AMR & intended function
    - Key to connecting sections 2 & 3

Major Items

- Section 2:

Table 2.0-1 Intended Functions Abbreviations & Definitions

Intended Function	Abbreviation	Definition
Filtration	FLT	Provides filtration.
Heat Sink	HS	Provides a heat sink during SBO or design basis accidents.
Heat Transfer	HT	Provides for heat transfer.
Jet Impingement Shield	JIS	Provides jet impingement shielding for high energy line breaks.
Missile Barrier	MB	Provides a missile (internal or external) barrier.
Pressure Boundary	PB	Provides a pressure boundary.

Major Items

- Section 2:

Table 2.3.2-1 Containment Spray System

Component Type	Intended Function(s)
Heat exchangers (shell)	Pressure boundary
Heat exchangers (tubes)	Heat transfer, Pressure boundary
Piping	Pressure boundary
Pump casing	Pressure boundary
Spray Nozzles	Flow control, Pressure boundary

Major Items

- <u>Section 3:</u>
  - Internal & external environments tables
  - Results table usage description & reference to tables
  - AMR results divided into the six SRP "Super Groups," then into their systems, structural or commodity subgroups
  - For each subgroup, a roll-up section of the materials, environments, aging effects requiring management and aging management programs (by name & hyperlink)
  - Aging Management Review (AMR) results tables
    - Table 1 = NUREG-1801, Volume 1 style table
    - Table 2 = plant specific AMR results

Major Items

- Section 3:

Table 3.0-1 Internal Service Environments

Environment	Description
Air	Dry/filtered compressed air (identified as Dry Air), non-dried compressed air, and atmospheric air (when internal to components such as ventilation system components, components open to atmosphere, etc.). Moisture-laden air conditions are noted, when applicable.
Gas	Nitrogen, oxygen, hydrogen, carbon dioxide, helium, freon, or Halon gases. Also includes vent gases from process systems.
Lubricating Oil	All lubricating oils used for in-scope plant equipment.
Fuel Oil	All fuel oils used for in-scope plant equipment.
Raw Water[1]	From a river, lake, pond, or groundwater source. Raw water is not demineralized or chemically treated to any significant extent. In general, raw water is rough filtered to remove large particles. Biocides may be added to raw water to control micro-organisms or macro-organisms. Other designations of raw water include water that leaks from any system and condensation.
Sea Water[1]	Water from a bay, sound, or ocean source. Sea water is not demineralized or chemically treated to any significant extent. In general, sea water is rough filtered to remove large particles. Biocides may be added to sea water to control micro-organisms or macro-organisms.

Major Items

- Section 3:

Table 3.0-2 External Service Environments

Environment[1]	Description
Borated Water Leakage	The borated water leakage environment applies in all plant areas that include components and systems that contain borated water and that could leak on nearby components or structures. This environment is specified in the aging management review results only for materials susceptible to boric acid corrosion (carbon steel, low-alloy steels, and copper alloys). This environment is not considered for in-scope cables and connectors since cables are insulated, splices are sealed, and terminations are protected by enclosures.
Soil	The external environment for structures and components buried in the ground. Buried components (pipes and valves) are exposed to a soil environment and may be exposed to groundwater if they are located below the local groundwater elevation. The soil is assumed to entrain raw water and buried components are evaluated for the effects of corrosion. Concrete structural members below grade elevation are exposed to a soil environment and may be exposed to groundwater if they are located below the local groundwater elevation. The site groundwater is non-aggressive to concrete as determined by recent groundwater analyses. Steel piles are driven in undisturbed soil such that the soil environment surrounding the piles is deficient in oxygen at depths of a few feet below grade or below the water table. Therefore, the soil environment is not considered corrosive to steel piles.

1. For certain structural members and system components that are submerged, the applicable environment identified in Table 3.0-1, Internal Service Environments, is specified in the aging management review results.

Major Items

- <u>Section 3 (continued):</u>
  - Table 1 = Based on NUREG-1801 table
    - Compares the results of the aging management reviews to NUREG-1801 summary results
    - Components from Section 2 are rolled up using the same SRP table format to provide linkage or exception to SRP aging effects and aging management programs
    - Item number column added to facilitate cross-referencing between Chapter 3 tables
    - Discussion column added for clarifications and explanations regarding table/program alignment

Major Items

- Section 3 (continued):
  - Table 1 = NUREG-1801 Style Table

Table 3.2.1 Summary of Aging Management Evaluations in Chapter V of NUREG-1801 for Engineered Safety Features

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.2.1-01	Piping, fittings, and valves in emergency core cooling system	Cumulative fatigue damage	TLAA, evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	This TLAA is further evaluated in Section 4.3. Low temperature portions are not susceptible to cumulative fatigue damage, for example, core flood. Further evaluation documented in Subsection 3.2.2.2.1
3.2.1-02	BWR Only				
3.2.1-03	Components in containment spray (PWR only), standby gas treatment (BWR only), containment isolation, and emergency core cooling systems	Loss of material due to general corrosion	Plant specific	Yes, plant specific	Consistent with NUREG-1801 for containment isolation. System walkdown program is credited. For further evaluation, see Appendix B. Not applicable for containment spray and ECCS as these components are not carbon steel in these systems. Further evaluation documented in Subsection 3.2.2.2.2.2
3.2.1-04	BWR Only				

Major Items

- <u>Section 3 (continued):</u>
  - Table 2 = Plant-specific AMR results
    - Provides AMR results divided into the six SRP "Super Groups," then into systems, structural or commodity subgroups
    - Contains 9 columns
    - Provides a means to cross-reference to Table 1, to NUREG-1801, to LRA Section 2 and to Appendix B
    - Contains a "Notes" column for referencing to explanations regarding alignment with NUREG-1801

Major Items

- <u>Section 3 (continued):</u>
  - Table 2 = Plant-specific AMR results

Table 3.2.2-1: Engineered Safety Features - Containment Spray System - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Heat exchangers (shell)	PB	Carbon steel	Air (external)	Loss of material	System walkdown	V.E.1-b	3.2.1-10	A
			Borated water leakage (external)	Loss of material	Boric acid corrosion	V.A.6-d	3.2.1-17	B
			Raw water (internal)	Loss of material	Heat exchanger monitoring Water chemistry control	V.A.6-a	3.2.1-12	E
			Treated water (internal)	Loss of material	Water chemistry control	V.A.6-c	3.2.1-13	E

Major Items

- Section 3 (continued): Table 1 = NUREG-1801 Table

Table 3.2.1 Summary of Aging Management Evaluations in Chapter V of NUREG-1801 for Engineered Safety Features

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.2.1-10	External surface of carbon steel components	Loss of material due to general corrosion	Plant specific	Yes, plant specific	Consistent with NUREG-1801. System walkdown program is credited. See Appendix B. Further evaluation documented in Subsection 3.2.2.2.2.2
3.2.1-11	Piping and fittings of CASS in emergency core cooling systems	Loss of fracture toughness due to thermal aging embrittlement	Thermal aging embrittlement of CASS	No	Not applicable as CASS is not used in this system.
3.2.1-12	Components serviced by open-cycle cooling system	Local loss of material due to general, pitting, and crevice corrosion, MIC, and biofouling; buildup of deposit due to biofouling	Open-cycle cooling water system	No	Different programs are credited other than an open-cycle cooling water system. These are the heat exchanger monitoring, water chemistry control, and/or system testing programs. See Appendix B.
3.2.1-13	Components serviced by closed-cycle cooling system	Loss of material due to general, pitting, and crevice corrosion	Closed-cycle cooling water system	No	Different programs are credited other than a closed-cycle cooling water system. These are water chemistry control, heat exchanger monitoring, and/or metal fatigue TLAA. See Appendix B.

Major Items

- <u>Section 3(continued):</u>
  - "Further Evaluation Recommended" section
    - Summary results of NUREG-1801 Further Evaluations Recommended
    - Reference to LRA Section 4 provided for TLAA evaluation results
  - Time-limited aging analyses (TLAAs) section
    - Identifies the TLAAs associated with the super group
    - Reference to LRA Section 4 for TLAA evaluation results
  - Conclusions

Major Items

- <u>Appendix B:</u>
  - Introduction section
    - Overview
    - Method of discussion
      - Consistent with NUREG-1801
      - Consistent, with exception, to NUREG-1801
      - Plant specific
    - Quality assurance program and administrative controls
    - Operating experience
    - Aging management programs list (indicates new and existing programs)

Major Items

- <u>Appendix B:</u>
  - Introduction (continued…)
    - TLAA aging management programs list
    - List of AMPs correlated to NUREG-1801
      - Plant specific programs are listed last
  - Aging management programs (AMPs) section
    - AMP descriptions
      - Includes TLAA AMPs under 10 CFR54.21(c)(1)(iii)

Major Items

- <u>Appendix B:</u>

  - Method of discussion

    - AMP is consistent with NUREG-1801
      - Program description
      - NUREG-1801 Consistency
      - Exceptions to NUREG-1801
      - Enhancements
      - Operating Experience
      - Conclusion

    - AMP is consistent, with exception, to NUREG-1801
      - Same sections as above, with exceptions defined and enhancements (if any) identified
      - Program elements affected by the exception and/or enhancement are identified, along with a justification for why the exception is okay and/or the enhancement is needed.

Major Items

- <u>Appendix B:</u>

  - Method of discussion (continued…)

    - AMP is plant specific
      - Program description
      - All 10 program elements
      - Enhancements
      - Conclusion

    - This approach helps to take maximum advantage of NUREG-1801 and improves efficiency

Summary

The proposed standard format is intended to promote review efficiency with a systematic, integrated presentation of system, structure and component aging management review data in LRA section 2, section 3 and Appendix B. In addition, information that can be directly used to develop the SER is consolidated in specific locations.

Omaha Public Power District

Fort Calhoun Station Presentation to ACRS License Renewal Subcommittee

June 11, 2003

Presenters

Sudesh Gambhir – Division Manager, Nuclear Projects

Joe Gasper – Manager, Major Projects

Bernie Van Sant – License Renewal Project Manager

Background

Joe Gasper

Background

- First application based on SRP and GALL
- Format based on NRC/NEI GALL Demonstration Project
- Application submitted January 9, 2002
- Revision submitted April 5, 2002
  - Section 2 tables contain links to Section 3 tables

Background

- Each AMR system grouping has 3 types of tables
  - 3.X-1: Structures/components (SCs) and AMPs matching those evaluated in GALL
  - 3.X-2: Plant-specific SCs and/or AMPs
  - 3.X.3: GALL AMPs credited for non-GALL SCs

Background

- Aging Management Programs
  - Consistent with GALL
  - Consistent with GALL, with some deviation
  - Not consistent with GALL: plant-specific

LRA Overview

Bernie Van Sant

Presentation Outline

- Scoping and Screening Process
- Aging Management Reviews
- Time Limited Aging Analyses
- Interim Staff Guidance
- Commitments
- Open and Confirmatory Items in SER
- Recent Plant Operating Experience

Scoping and Screening Process

- Scoping Criteria match 10 CFR 54.4 criteria
  - Safety Related = Critical Quality Element (CQE)
  - Non-safety Related which can affect Safety Related = Limited CQE (LCQE)
  - Regulated Events = CQE, LCQE, and Non-CQE

Scoping and Screening Process

- Plant Equipment Database
- Updated Safety Analysis Report
- Design Basis Documents
- Q-List
- Piping & Instrumentation Diagrams
- Engineering Analyses
- Design Change Packages

Scoping and Screening Process Mechanical

- Functional Realignment (regrouping of components) Methodology
- Functional Realignment
  - Commodity-based transfers
  - System interface transfers
  - GALL alignment transfers

Scoping and Screening Process Structures

- FCS Unique Structures
  - Condenser Circulating Water Discharge Tunnel
  - Enclosed above-ground Fire Protection Diesel Fuel Oil Tank
  - Safety Injection Refueling Water Tank

Scoping and Screening Process Electrical

- Scoped on a System Basis (20 Systems)
- Passive Electrical/I&C Components Screened into Commodity Groups
  - Cables and Connectors including Splices, Terminal Blocks, and Fuse-Blocks
  - Electrical Bus Bars
  - Containment Penetrations

Aging Management Reviews

- Components, materials, and environments identified
- Aging effects identified
- Aging Management Programs assigned
- All of the above compared to GALL
- SSCs grouped in 3.X-1, 3.X-2, or 3.X-3 tables as appropriate

Aging Management Reviews

- 24 Aging Management Programs credited
- Appendix B descriptions summarize consistency with GALL, Operating Experience, and Conclusion
- Plant-specific program descriptions include 10 criteria evaluation per SRP

Time Limited Aging Analyses

- Fourteen TLAAs total
- Plant-specific TLAAs
  - Environmental Fatigue
  - Leak Before Break
  - Pressurizer nozzle J-groove weld
  - High Energy Line Break

Interim Staff Guidance

- All issued Interim Staff Guidance documents (ISGs) were implemented
  - ISG-01: GALL Position on Aging Management
  - ISG-02: Station Blackout
  - ISG-03: Aging Management of Concrete
  - ISG-04: Aging Management of Fire Protection Systems
  - ISG-05: Treatment of Fuse Holders

Commitment Management

- All commitments listed in SER
  - Program Enhancements
  - New Programs
  - TLAA Evaluations
- Commitments included and tracked in plant action tracking system
- Implementing procedures annotated

Open and Confirmatory Items in SER

- Total of 11 Open Items (9 requiring OPPD action)
- 4 Confirmatory Items
- OPPD discussed all Open and Confirmatory Items requiring OPPD actions with NRC Staff and provided acceptable responses

Recent Plant Operating Experience

- All Green NRC Performance Indicators
- NRC Problem Identification & Resolution Inspection completed May 8: no Green or higher findings
- Recognized for Industry Operating Excellence by INPO

Recent Plant Operating Experience

- Previous fuel leakage problems resolved
- Excellent material condition - only one forced shutdown (in October 2000) since June 1998
- RV Head visual inspection

Questions

ACRS LICENSE RENEWAL SUBCOMMITTEE
FORT CALHOUN STATION, UNIT 1
LICENSE RENEWAL APPLICATION
JUNE 11, 2003

WILLIAM BURTON
PROJECT MANAGER
NRR

OVERVIEW

APPLICATION SUBMITTED BY LETTERS DATED JANUARY 9 AND APRIL 5, 2002

PRESSURIZED WATER REACTOR. 1 UNIT

PLANT LOCATED IN WASHINGTON COUNTY, NEBRASKA, ON WEST BANK OF MISSOURI RIVER.

~19 MILES NORTH OF OMAHA

CURRENT LICENSE EXPIRES AUGUST 9, 2013. REQUESTS LICENSE RENEWAL THROUGH AUGUST 9, 2033

OVERVIEW (con't)

FIRST LICENSE RENEWAL APPLICATION TO FULLY IMPLEMENT THE GENERIC AGING LESSONS LEARNED (GALL) PROCESS

KEY CORRESPONDENCE

STAFF ISSUED 214 REQUESTS FOR ADDITIONAL INFORMATION (RAIs) ON OCTOBER 11, 2002. APPLICANT RESPONDED TO RAIs BY LETTERS DATED NOVEMBER 22, DECEMBER 12, AND DECEMBER 19, 2002

STAFF ISSUED POTENTIAL OPEN ITEMS (POIs) ON FEBRUARY 20, 2003. APPLICANT RESPONDED TO POIs BY LETTER DATED MARCH 14, 2003

SER WITH OPEN ITEMS WAS ISSUED ON APRIL 21, 2003

- 10 OPEN ITEMS
- 4 CONFIRMATORY ITEMS

1 ADDITIONAL OPEN ITEM WAS IDENTIFIED FOLLOWING ISSUANCE OF SER

- PRESSURIZER WELD REPAIR

INSPECTIONS AND AUDITS

STAFF PERFORMED SCOPING AND SCREENING METHODOLOGY AUDIT JULY 8 - 12, 2002

STAFF PERFORMED SCOPING AND SCREENING INSPECTION NOVEMBER 4 - 8, 2002

- 4 INSPECTION OPEN ITEMS WERE IDENTIFIED

STAFF PERFORMED AMR INSPECTION AND CONCURRENT AUDIT JANUARY 6 - 10 AND JANUARY 20 - 23, 2003

- INSPECTION REPORT DISCUSSES RESOLUTION OF THE 4 INSPECTION OPEN ITEMS IDENTIFIED DURING THE SCOPING AND SCREENING INSPECTION

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

STAFF CONDUCTED METHODOLOGY AUDIT FROM JULY 8 - 12, 2002.

PURPOSE OF AUDIT WAS TO ENSURE THAT THE IMPLEMENTATION OF THE SCOPING AND SCREENING METHODOLOGY WAS CONSISTENT WITH THE LRA DESCRIPTION AND THE RULE.

AUDIT TEAM FOUND THE APPLICANT'S IMPLEMENTATION OF THE METHODOLOGY SATISFACTORY

FUNCTIONAL REALIGNMENT

METHODOLOGY WASN'T WELL DESCRIBED

SOME COMPONENTS REALIGNED BASED ON SAME INTENDED FUNCTIONS (e.g., CIVs)

SOME COMPONENTS COMMODITIZED (e.g., BUS BARS AND CABLES)

SOME COMPONENTS REALIGNED BASED ON SIMILAR MATERIAL/ENVIRONMENTS

CONFIRMATORY ITEM 2.1.3.1.2-1: SAFETY INJECTION TANK LEVEL AND PRESSURE INDICATORS SHOULD BE IN SCOPE (SCOPING INSPECTION OPEN ITEM)

APPLICANT BROUGHT INDICATORS IN SCOPE, BUT SCREENED OUT AS ACTIVE

STATUS: CLOSED

STAFF REVIEW AND METHODOLOGY AUDIT FOUND THAT THE APPLICANT'S SCOPING AND SCREENING METHODOLOGY SATISFIES THE RULE

2.2 - PLANT LEVEL SCOPING RESULTS

SECTION 2.2 OF THE LRA IDENTIFIES THE SYSTEMS AND STRUCTURES WITHIN THE SCOPE OF THE RULE.

STAFF REVIEWED SECTION 2.2 TO DETERMINE IF ANY SYSTEMS OR STRUCTURES WERE OMITTED

SEVERAL SYSTEMS WERE INITIALLY OMITTED FROM SCOPE. THESE SYSTEMS MET SCOPING CRITERION 54.4(a)(2) (NON-SAFETY-RELATED SSCs WHOSE FAILURE COULD PREVENT SATISFACTORY ACCOMPLISHMENT OF A SAFETY FUNCTION)

- AUXILIARY STEAM
- CONDENSATE RETURN
- CHEMICAL FEED
- DEMINERALIZED WATER
- POTABLE WATER
- SERVICE WATER
- TURBINE PLANT COOLING WATER

THESE SYSTEMS WERE BROUGHT INTO SCOPE, ALONG WITH ASSOCIATED AGING MANAGEMENT INFORMATION. STAFF REVIEWED THE ADDITIONAL INFORMATION. THIS WAS IDENTIFIED AS OPEN ITEM 2.2-1 (STATUS: RESOLVED)

STAFF IDENTIFIED DISCREPANCY BETWEEN LRA TABLE AND SYSTEM DESCRIPTION FOR THE BLOWPIPE SYSTEM. THIS WAS IDENTIFIED AS OPEN ITEM 2.2-2. APPLICANT PROVIDED INFORMATION TO RESOLVE DISCREPANCY. OPEN ITEM IS CLOSED

BLOWPIPE: PROVIDES COMPRESSED AIR DURING CONTAINMENT INTEGRATED LEAK RATE TESTS. OTHERWISE BLOWPIPE IS BLANKED OFF

BLOWPIPE CONSISTS OF CONTAINMENT PENETRATION BLOCKED OF AT EACH END

BLOWPIPE COMPONENTS ARE INCLUDED IN LRA TABLE 2.3.2.2-1 (CONTAINMENT PENETRATION AND SYSTEM INTERFACE) UNDER BOLTING AND PRIMARY CONTAINMENT PENETRATIONS

2.3 - SCOPING AND SCREENING OF MECHANICAL SYSTEMS

INCLUDES REACTOR SYSTEMS (3), ENGINEERED SAFETY FEATURES SYSTEMS (2), AUXILIARY SYSTEMS (20), AND STEAM POWER CONVERSION SYSTEMS (3)

STEAM GENERATOR BLOWDOWN SYSTEM

LRA WAS INCONSISTENT ABOUT WHETHER SYSTEM WAS WITHIN SCOPE. RAI 2.3.4-1 ASKED FOR CLARIFICATION OF DISCREPANCY. SCOPING INSPECTION IDENTIFIED OPEN ITEM REGARDING FUNCTIONAL REALIGNMENT OF BLOWDOWN COMPONENTS

APPLICANT CLARIFIED THAT SYSTEM IS WITHIN SCOPE AND COMPONENTS ARE EVALUATED UNDER OTHER SYSTEMS

- SG BLOWDOWN NOZZLES - RCS (2.3.1.2)
- BLOWDOWN CIVs - CONTAINMENT PENETRATION AND SYSTEM INTERFACE COMPONENTS (2.3.2.2)
- SAMPLE PIPING AND VALVES (FOR PRESSURE BOUNDARY FUNCTION) - SAMPLING (2.3.3.19)
- OTHER PIPING AND VALVES - FEEDWATER (2.3.4.1)

STAFF IDENTIFIED FAILURE OF CIRCULATING WATER DISCHARGE TUNNEL COULD BLOCK DISCHARGE FLOW FROM RAW WATER SYSTEM, AND THEREFORE SHOULD BE IN SCOPE. THIS WAS IDENTIFIED AS OPEN ITEM 2.3.3.15-1.

TUNNEL WAS BROUGHT INTO SCOPE (AS PART OF INTAKE STRUCTURE) AND AGING MANAGEMENT INFORMATION WAS PROVIDED. STAFF REVIEWED DRAFT RESPONSE. OPEN ITEM IS RESOLVED

2.4 - STRUCTURES AND STRUCTURAL COMPONENTS

DESCRIBES STRUCTURES AND STRUCTURAL COMPONENTS

- CONTAINMENT
- AUXILIARY BUILDING
- TURBINE AND SERVICE BUILDING
- INTAKE STRUCTURE
- BUILDING PILES
- FUEL HANDLING EQUIPMENT AND HEAVY LOAD CRANES
- COMPONENT SUPPORTS
- DUCT BANKS

CIRCULATING WATER DISCHARGE TUNNEL BROUGHT INTO SCOPE AS PART OF THE INTAKE STRUCTURE (OPEN ITEM 2.3.3.15-1). NO OTHER OPEN ITEMS IDENTIFIED

2.5 - ELECTRICAL SYSTEMS AND INSTRUMENTATION AND CONTROL SYSTEMS

20 SYSTEMS/COMMODITY GROUPS IN SCOPE, BUT ONLY 3 COMMODITY GROUPS CONTAIN COMPONENTS SUBJECT TO AN AMR

- CABLES AND CONNECTORS
- CONTAINMENT ELECTRICAL PENETRATIONS
- BUS BARS

STAFF ISSUED RAI 2.5-1 FOR APPLICANT TO IDENTIFY SSCs REQUIRED TO COMPLY WITH STATION BLACKOUT (SBO) RULE, INCLUDING THE RECOVERY PATH

APPLICANT BROUGHT ADDITIONAL COMPONENTS WITHIN SCOPE

SCOPING AND SCREENING INSPECTION

PURPOSE - EXAMINE APPLICANT ACTIVITIES THAT SUPPORT THE LRA

PERFORMED NOVEMBER 4 - 8, 2002

INSPECTION TEAM:

8 INSPECTORS - 5 FROM REGION, 3 FROM HEADQUARTERS

1 - CURRENT FCS RESIDENT INSPECTOR

3 - FORMER FCS RESIDENT INSPECTORS (2 WERE FCS SENIOR RESIDENTS INSPECTORS)

1 - CURRENT LICENSING PROJECT MANAGER

EXAMINED PROCEDURES AND REPRESENTATIVE RECORDS, AND INTERVIEWED PERSONNEL REGARDING SCOPING AND SCREENING PROCESS. SAMPLED 22 MECHANICAL AND 13 ELECTRICAL SYSTEMS, AND 9 STRUCTURES (INCLUDING 2 NOT IDENTIFIED AS WITHIN SCOPE)

SCOPING AND SCREENING INSPECTION

4 INSPECTION OPEN ITEMS WERE IDENTIFIED:

A. CCW COMPONENTS USED TO COOL SAFETY INJECTION LEAKAGE COOLERS WERE NOT INCLUDED WITHIN SCOPE

B. SAFETY INJECTION TANK LEVEL AND PRESSURE INDICATORS SHOULD BE WITHIN SCOPE

C. DISCREPANCY IN THE LRA REGARDING THE FUNCTIONAL REALIGNMENT OF THE BLOWDOWN SYSTEM

D. WARM WATER RECIRCULATION PATH SHOULD BE INCLUDED WITHIN SCOPE

ALL INSPECTION OPEN ITEMS ARE CLOSED. STAFF CONCLUDED THAT SCOPING AND SCREENING WERE CONDUCTED AS DESCRIBED IN THE LRA AND THAT DOCUMENTS ARE AUDITABLE AND RETRIEVABLE, AS REQUIRED BY 10 CFR 54.37

SCOPING AND SCREENING SUMMARY

1. METHODOLOGY CONSISTENT WITH RULE

2. SCOPING AND SCREENING RESULTS INCLUDED ALL SSCs WITHIN THE SCOPE OF LICENSE RENEWAL AND SUBJECT TO AN AMR

3. SCOPING AND SCREENING DOCUMENTATION MEETS THE REQUIREMENTS OF 10 CFR 54.37

SECTION 3 - AGING MANAGEMENT REVIEW

GALL DIVIDES SYSTEMS AND STRUCTURES INTO 5 BROAD SYSTEM/STRUCTURAL GROUPS

REACTOR SYSTEMS GROUP (3.1)

ENGINEERED SAFETY FEATURES GROUP (3.2)

AUXILIARY SYSTEMS (3.3)

STEAM AMD POWER CONVERSION SYSTEMS (3.4)

STRUCTURES (3.5)

ELECTRICAL AND I&C (3.6)

GALL REVIEW PROCESS

STAFF REVIEW PROCESS IS DESCRIBED IN SER SECTION 3.0.2

REVIEW PROCESS CONSISTS OF 3 PHASES

PHASE 1

REVIEW OF AGING MANAGEMENT PROGRAMS

1. AMPs THAT THE APPLICANT CLAIMS TO BE CONSISTENT WITH GALL AMPs

   CONSISTENCY CONFIRMED DURING AMR INSPECTION

   USAR SUPPLEMENT REVIEWED

2. AMPS THAT APPLICANT CLAIMS TO BE CONSISTENT WITH GALL AMPs, BUT WITH DEVIATIONS

   3 TYPES OF DEVIATIONS

   ENHANCEMENTS
   CLARIFICATIONS
   EXCEPTIONS

DEVIATIONS REVIEWED TO DETERMINE WHETHER AMP, WITH THE DEVIATION, IS ADEQUATE TO MANAGE AGING

CONSISTENCY CONFIRMED DURING AMR INSPECTION

USAR SUPPLEMENT REVIEWED

3. NON-GALL AMPs

AMP IS REVIEWED AGAINST THE 10 PROGRAM ATTRIBUTES

USAR SUPPLEMENT REVIEWED

PHASE 2

REVIEW OF AGING MANAGEMENT REVIEW (AMR) RESULTS

1. AMRs THAT THE APPLICANT CLAIMS TO BE CONSISTENT WITH GALL AMRs

   CONSISTENCY CONFIRMED DURING AMR INSPECTION

2. AMRs THAT THE APPLICANT CLAIMS TO BE CONSISTENT WITH GALL AMRs BUT GALL RECOMMENDS FURTHER EVALUATION (SPECIFIC GUIDANCE IN SRP)

   CONSISTENCY CONFIRMED DURING AMR INSPECTION

   FURTHER EVALUATION REVIEWED TO DETERMINE IF AMR PROVIDES ADEQUATE AGING MANAGEMENT

3. AMRs NOT CONSISTENT WITH GALL

   AMR REVIEWED TO DETERMINE IF AMR PROVIDES ADEQUATE AGING MANAGEMENT

PHASE 3

ADEQUACY OF AGING MANAGEMENT OF STRUCTURES AND COMPONENTS

REVIEW PLANT-SPECIFIC STRUCTURES AND COMPONENTS FOR EACH SYSTEM/STRUCTURE TO DETERMINE WHETHER THEY ARE/WILL BE ADEQUATELY MANAGED, AS REQUIRED BY 10 CFR 54.21(a)(3)

GALL TRAINING

HELD FORMAL AND INFORMAL TRAINING SESSIONS FOR TECHNICAL REVIEWERS, INSPECTORS, AND CONTRACTORS

HQ REVIEWERS AND CONTRACTORS - SEPTEMBER 17, 2002

- VIDEOTAPED FOR FUTURE TRAINING NEEDS

REGION IV INSPECTORS - OCTOBER 3, 2002

ACRS PRESENTATION - MARCH 7, 2003

SER SECTION 3.0

SER SECTION 3.0.1 DESCRIBES NEW GALL FORMAT IN THE LRA

SER SECTION 3.0.2 DESCRIBES STAFF'S REVIEW PROCESS IN THE NEW GALL REGIME

SER SECTION 3.0.3 EVALUATES COMMON AGING MANAGEMENT PROGRAMS

SER SECTION 3.0.4 EVALUATES THE 3 COMMON QUALITY ASSURANCE ATTRIBUTES IN GALL

- CORRECTIVE ACTIONS
- CONFIRMATION PROCESS
- ADMINISTRATIVE CONTROLS

- STAFF LOOKS FOR 2 ITEMS TO CONFIRM APPROACH

  - 10 CFR APPENDIX B QA PROGRAM USED TO ADDRESS THE THREE ATTRIBUTES

  - APPLICATION OF APPENDIX B IS APPLIED TO SAFETY-RELATED AND NONSAFETY-RELATED SSCs THAT ARE WITHIN SCOPE AND SUBJECT TO AN AMR

LATE IN THE SAFETY REVIEW, APPLICANT MADE MANY REVISIONS TO THE LRA BASED ON RESPONSES TO STAFF RAIs, POIs, AND ON THEIR OWN. STAFF IS EVALUATING THE REVISIONS. THIS IS OPEN ITEM 3.0-1 (STATUS: OPEN)

AGING MANAGEMENT PROGRAMS

14 COMMON AGING MANAGEMENT PROGRAMS (AMPs)

BOLTING INTEGRITY
CHEMISTRY
CONTAINMENT INSERVICE INSPECTION
FLOW-ACCELERATED CORROSION
INSERVICE INSPECTION
BORIC ACID CORROSION PREVENTION
COOLING WATER CORROSION
FATIGUE MONITORING
FIRE PROTECTION
PERIODIC SURVEILLANCE AND PREVENTIVE MAINTENANCE (PS/PMP)
STRUCTURES MONITORING
GENERAL CORROSION OF EXTERNAL SURFACES
ONE-TIME INSPECTION
SELECTIVE LEACHING

CONSISTENT WILL GALL: 5
CONSISTENT WITH GALL, BUT WITH SOME DEVIATION: 7
NON - GALL: 2

STAFF EVALUATION RESULTS DOCUMENTED IN SER SECTION 3.0.3

AGING MANAGEMENT PROGRAMS

GENERAL CORROSION OF EXTERNAL SURFACES

CONFIRMATORY ITEM 3.0.3.12.1-1: SPENT FUEL POOL COOLING SYSTEMS SHOULD BE BROUGHT INTO THE SCOPE OF THIS AMP

STATUS: RESOLVED

ONE-TIME INSPECTION (OTI)

USED TO CONFIRM THAT AGING EFFECTS ARE NOT PRESENT

NOT YET DEVELOPED AT FCS

ITEMS FOR WHICH OTI IS CREDITED ARE IDENTIFIED IN SER APPENDIX A (COMMITMENT TABLE)

AGING MANAGEMENT PROGRAMS

10 SYSTEM/STRUCTURAL GROUP-SPECIFIC AMPs

REACTOR SYSTEMS GROUP

REACTOR VESSEL INTEGRITY (3.1.2.3.1)
REACTOR VESSEL INTERNALS INSPECTION (3.1.2.3.2)
STEAM GENERATOR (3.1.2.3.3)
ALLOY 600 (3.1.2.3.4)
THERMAL EMBRITTLEMENT OF CAST AUSTENITIC STAINLESS STEEL (3.1.2.3.5)

AUXILIARY SYSTEMS GROUP

DIESEL FUEL MONITORING AND STORAGE (3.3.2.3.1)
OVERHEAD LOAD HANDLING SYSTEMS INSPECTION (3.5.2.3.2)
BURIED SURFACES EXTERNAL CORROSION (3.3.2.3.2)

STRUCTURES AND STRUCTURAL COMPONENTS GROUP

CONTAINMENT LEAK RATE (3.5.2.3.1)

AGING MANAGEMENT PROGRAMS

ELECTRICAL AND I&C SYSTEMS GROUP

NON-EQ CABLE AGING MANAGEMENT (3.6.2.3.1)

CONSISTENT WILL GALL: 4
CONSISTENT WITH GALL, BUT WITH SOME DEVIATION: 6
NOT CONSISTENT WITH GALL: 0

STAFF EVALUATION RESULTS DOCUMENTED IN THE SER SECTION FOR EACH SYSTEM/STRUCTURAL GROUP

FCS AMP STATISTICS

TOTAL NUMBER OF FCS AMPs - 24

NUMBER OF NON-GALL FCS AMPs - 3, NOW 2

NUMBER OF FCS AMPs THAT ARE CONSISTENT WITH GALL - 21, NOW 22

NUMBER OF FCS AMPs THAT DEVIATE FROM GALL - 13

- CLARIFICATIONS - 4
- EXCEPTIONS -6
- ENHANCEMENTS - 10

NUMBER OF GALL AMPs THAT ARE REFERENCED IN THE LRA - 30, NOW 33 (XI.E1/E2/E3)

SER SECTION 3.1 - REACTOR SYSTEMS

REACTOR VESSEL INTERNALS
REACTOR COOLANT SYSTEM
REACTOR VESSEL

AMRs CONSISTENT WITH GALL

ISSUES REQUIRING FURTHER EVALUATION IN GALL WERE EVALUATED AND FOUND ACCEPTABLE

STAFF FOUND THAT REACTOR SYSTEMS' COMPONENTS ARE/WILL BE ADEQUATELY MANAGED

ALLOY 600 PROGRAM

- APPLICANT COMMITTED TO IMPLEMENTING FINAL RESOLUTIONS FROM BULLETINS AND ORDERS RELATED TO CIRCUMFERENTIAL CRACKING OF VESSEL HEAD PENETRATIONS, BORIC ACID WASTAGE OF THE VESSEL HEAD, etc.

ORDERS ISSUED REQUIRING AUGMENTED INSPECTIONS OF ALLOY 600 NOZZLES TO VESSEL HEAD

AS OTHER ALLOY 600 OR ALLOY 82/182 ISSUES ARISE, STAFF WILL ADDRESS THEM WITHIN THE CURRENT OPERATING TERM

SER SECTION 3.1 - REACTOR SYSTEMS

STEAM GENERATOR PROGRAM

GALL PROGRAM MANAGES AGING OF STEAM GENERATOR (SG) TUBES.
APPLICANT CREDITS PROGRAM WITH MANAGING OTHER SG COMPONENTS

STEAM GENERATOR SHELL ASSEMBLY
NOZZLES, NOZZLE SAFE ENDS, FEEDRING
SECONDARY SIDE TUBESHEET
PRIMARY SIDE TUBE SHEET AND PRIMARY HEAD

APPLICANT ADDRESSED THE AGING MANAGEMENT PROGRAM ELEMENTS FOR EACH OF THE ADDED COMPONENTS

THE STAFF CONCLUDED THE STEAM GENERATOR PROGRAM WILL EFFECTIVELY MANAGE AGING IN THE COMPONENTS FOR WHICH THIS PROGRAM IS CREDITED

SER SECTION 3.2 - ENGINEERED SAFETY FEATURES (ESF) SYSTEMS

SAFETY INJECTION AND CONTAINMENT SPRAY

HIGH-PRESSURE SAFETY INJECTION
LOW-PRESSURE SAFETY INJECTION
CONTAINMENT SPRAY

CONTAINMENT PENETRATION AND SYSTEM INTERFACE COMPONENTS FOR NON-CQE SYSTEMS

CONTAINMENT ISOLATION VALVES (BLOWDOWN, CA, BLOWPIPE, DEMINERALIZED WATER SYSTEMS), INCLUDING PIPING BETWEEN PENETRATION AND THE CIVs

DEMINERALIZED WATER HEAT EXCHANGERS MAINTAIN COMPONENT COOLING WATER PRESSURE BOUNDARY

MECHANICAL PORTIONS OF ELECTRICAL PENETRATIONS THAT PROVIDE CONTAINMENT ISOLATION

ENGINEERED SAFETY FEATURES (CON'T)

AMRs CONSISTENT WITH GALL

ISSUES REQUIRING FURTHER EVALUATION IN GALL WERE EVALUATED AND FOUND ACCEPTABLE

STAFF FOUND THAT ESF SYSTEMS' COMPONENTS ARE/WILL BE ADEQUATELY MANAGED

SER SECTION 3.3 - AUXILIARY SYSTEMS

20 AUXILIARY SYSTEMS

AMRs CONSISTENT WITH GALL

ISSUES REQUIRING FURTHER EVALUATION IN GALL WERE EVALUATED AND FOUND ACCEPTABLE

STAFF CONCERN REGARDING IMPACT OF DEGRADATION OF REGENERATIVE HEAT EXCHANGER TUBES ON THE ABILITY OF THE CHEMICAL AND VOLUME CONTROL SYSTEM TO PERFORM ITS INTENDED FUNCTION. THIS IS OPEN ITEM 3.3.2.4.1.2-1 (STATUS: RESOLVED)

STAFF FOUND AUXILIARY SYSTEM COMPONENTS ARE/WILL BE ADEQUATELY MANAGED

SER SECTION 3.4 - STEAM AND POWER CONVERSION SYSTEMS

FEEDWATER
AUXILIARY FEEDWATER
MAIN STEAM AND TURBINE STEAM EXTRACTION
BLOWDOWN

AMRs CONSISTENT WITH GALL

ISSUES REQUIRING FURTHER EVALUATION IN GALL WERE EVALUATED AND FOUND ACCEPTABLE

STAFF FOUND THAT SPCS COMPONENTS ARE/WILL BE ADEQUATELY MANAGED

SER SECTION 3.5 - CONTAINMENT, STRUCTURES, AND COMPONENT SUPPORTS

CONTAINMENT
AUXILIARY BUILDING
TURBINE AND SERVICE BUILDING
INTAKE STRUCTURE (INCLUDING CIRC WATER TUNNEL)
BUILDING PILES
FUEL HANDLING EQUIPMENT AND HEAVY LOAD CRANES
COMPONENT SUPPORTS
DUCT BANKS

AMRs CONSISTENT WITH GALL

ISSUES REQUIRING FURTHER EVALUATION IN GALL WERE EVALUATED AND FOUND ACCEPTABLE

STAFF FOUND THAT STRUCTURES AND STRUCTURAL COMPONENTS ARE/WILL BE ADEQUATELY MANAGED

SER SECTION 3.6 - ELECTRICAL AND I&C

20 SYSTEMS IN SCOPE. ONLY 3 HAD COMPONENTS SUBJECT TO AN AMR (REMAINING COMPONENTS WERE EITHER ACTIVE OR COMMODITIZED)

CABLES AND CONNECTORS
CONTAINMENT ELECTRICAL PENETRATIONS
BUS BARS

GALL AMPs XI.E1, XI.E2, AND XI.E3:

XI.E1 - ELECTRICAL CABLES AND CONNECTIONS NOT SUBJECT TO 10 CFR 50.49 ENVIRONMENTAL QUALIFICATION REQUIREMENTS

AMP FOR NON-EQ CABLES AND CONNECTIONS EXPOSED TO LOCAL ADVERSE ENVIRONMENT CAUSED BY HEAT, RADIATION, OR MOISTURE

XI.E2 - ELECTRICAL CABLES NOT SUBJECT TO 10 CFR 50.49 ENVIRONMENTAL QUALIFICATION REQUIREMENTS USED IN INSTRUMENTATION CIRCUITS

AMP FOR NON-EQ CABLES USED IN INSTRUMENTATION CIRCUITS THAT MAY BE SENSITIVE TO REDUCTION IN INSULATION RESISTANCE

AND EXPOSED TO LOCAL ADVERSE ENVIRONMENT CAUSED BY HEAT, RADIATION, OR MOISTURE

XI.E3 - INACCESSIBLE MEDIUM-VOLTAGE CABLES NOT SUBJECT TO 10 CFR 50.49 ENVIRONMENTAL QUALIFICATION REQUIREMENTS

AMP FOR NON-EQ INACCESSIBLE MEDIUM VOLTAGE CABLES EXPOSED TO LOCAL ADVERSE ENVIRONMENT CAUSED BY MOISTURE AND VOLTAGE EXPOSURE

LRA DESCRIBED THE APPLICANT'S NON-EQ CABLE AMP. THIS AMP WAS NOT CONSISTENT WITH THE GALL AMPs

APPLICANT DEVELOPED NEW AMP THAT IS CONSISTENT WITH GALL AMPs

SEVERAL OPEN ITEMS:

3.6.2.3.1.2-1: USAR SUPPLEMENT SHOULD BE REVISED TO DESCRIBE THE AMP

REVISED USAR SUPPLEMENT BEING DEVELOPED TO BE CONSISTENT WITH GALL AMPs

STATUS: RESOLVED

3.6.2.4.3.2-1: AGING MANAGEMENT PROGRAM SHOULD BE DEVELOPED TO MANAGE AGING OF BUS BARS

PERIODIC SURVEILLANCE AND PREVENTIVE MAINTENANCE PROGRAM (A NON-GALL AMP) WILL BE USED TO MANAGE AGING IN NON-SEGREGATED AND ISOPHASE BUS BARS

STATUS: RESOLVED

3.6.2.4.4.2-1: PROVIDE AMP TO MANAGE AGING OF HIGH-VOLTAGE CONDUCTORS OR PROVIDE JUSTIFICATION FOR WHY AN AMP IS NOT NEEDED

APPLICANT PROVIDED JUSTIFICATION FOR WHY AN AMP IS NOT NEEDED

STATUS: CLOSED

3.6.2.4.5.2-1: AGING MANAGEMENT OF FUSE BLOCKS

APPLICANT COMMITTED TO MANAGING FUSE BLOCKS IN ACCORDANCE WITH ISG-5

STATUS: RESOLVED

AMR INSPECTION AND AUDIT

PURPOSE - EXAMINE APPLICANT ACTIVITIES THAT SUPPORT THE LRA

STAFF PERFORMED AMR INSPECTION AND CONCURRENT AUDIT JANUARY 6 - 10 AND JANUARY 20 - 23, 2003

INSPECTION TEAM:

9 INSPECTORS - 5 FROM REGION, 4 FROM HEADQUARTERS

1 - CURRENT FCS RESIDENT INSPECTOR

2 - FORMER FCS SENIOR RESIDENTS INSPECTORS

1 - FORMER SENIOR RESIDENT INSPECTOR

1 - CURRENT LICENSING PROJECT MANAGER

EXAMINED PROCEDURES AND REPRESENTATIVE RECORDS, AND INTERVIEWED PERSONNEL REGARDING AGING MANAGEMENT ACTIVITIES TO SUPPORT LICENSE RENEWAL. REVIEWED COMPONENTS IN MECHANICAL AND ELECTRIAL SYSTEMS, AND SEVERAL STRUCTURES.

REVIEWED 19 OF 24 AGING MANAGEMENT PROGRAMS

REVIEWED APPLICANTS RESOLUTION OF THE 4 INSPECTION OPEN ITEMS IDENTIFIED DURING THE SCOPING AND SCREENING INSPECTION. ALL INSPECTION OPEN ITEMS CLOSED

A. CCW COMPONENTS USED TO COOL SAFETY INJECTION LEAKAGE COOLERS WERE NOT INCLUDED WITHIN SCOPE

   APPLICANT COMMITTED TO INCLUDE COMPONENTS WITHIN SCOPE. STAFF EVALUATION IN SER SECTION 2.3.3.16.2

B. SAFETY INJECTION TANK LEVEL AND PRESSURE INDICATORS SHOULD BE WITHIN SCOPE

C. DISCREPANCY IN THE LRA REGARDING THE FUNCTIONAL REALIGNMENT OF THE BLOWDOWN SYSTEM

D. WARM WATER RECIRCULATION PATH WILL BE RESOLVED FOR CURRENT OPERATING TERM

CONCLUDED THAT EXISTING AGING MANAGEMENT ACTIVITIES ARE BEING CONDUCTED AS DESCRIBED IN THE LRA, AND PLANS FOR NEW AGING MANAGEMENT ACTIVITIES APPEAR ACCEPTABLE TO MANAGE PLANT AGING

SER SECTION 4 - TIME-LIMITED AGING ANALYSES

4.1 - IDENTIFICATION OF TLAAs

4.2 - REACTOR VESSEL NEUTRON EMBRITTLEMENT

4.3 - METAL FATIGUE

4.4 - ENVIRONMENTAL QUALIFICATION

4.5 - CONCRETE CONTAINMENT TENDON PRESTRESS

4.6 - CONTAINMENT LINER PLATE AND PENETRATION SLEEVE FATIGUE

4.7 - OTHER TLAAs

4.7.1 - RCP FLYWHEEL FATIGUE
4.7.2 - LBB ANALYSIS
4.7.3 - HELB
4.7.4 - PRESSURIZER WELD REPAIR (NEW ITEM)

4.1 - IDENTIFICATION OF TLAAs

NEW TLAA IDENTIFIED AFTER ISSUANCE OF THE SER (NEW OPEN ITEM)

WELD REPAIR ON PRESSURIZER LIQUID SPACE TEMPERATURE ELEMENT

DURING RCS HYDROSTATIC TEST IN OCTOBER, 2000, THE PRESSURIZER (PZR) LIQUID TEMPERATURE NOZZLE WAS FOUND TO BE LEAKING FROM ANNULUS BETWEEN SLEEVE AND PZR SHELL.

PLANT WAS SHUTDOWN AND LEAK REPAIRED (FLAW REMAINED)

FLAW WAS EVALUATED IN ACCORDANCE WITH IWA-4000 AND DISPOSITIONED USING A CORROSION ANALYSIS THAT CONSIDERED EXPOSURE TO FERRITIC VESSEL MATERIALS TO RCS BORIC ACID, RESULTING IN LIFETIME FOR THE REPAIR OF 86 YEARS.

IN APRIL, 2002, IT WAS FOUND THAT THE FLAW REMAINING IN SERVICE WAS NOT EVALUATED UNDER ASME SECTION XI IWB-3610 AND IWB-3612

OPEN ITEM 4.7.4-1 (CURRENTLY RESOLVED)

NEW OPEN ITEM (CON'T)

ISSUE WILL BE INCLUDED IN NEW SER SECTION 4.7.4

4.2 - REACTOR VESSEL NEUTRON EMBRITTLEMENT

PLANT HEATUP/COOLDOWN CURVES AND LTOP PORV SETPOINTS

IN LRA, APPLICANT'S PRESSURE/TEMPERATURE (P/T) ANALYSES EXTENDED BEYOND CURRENT TERM, BUT NOT TO THE END OF THE EXTENDED OPERATING PERIOD

LTOP LIMITS ARE CONSIDERED IN CALCULATION OF P/T CURVES

APPLICANT HAS USED STAFF-APPROVED METHODOLOGY TO PROJECT P/T AND LTOP LIMITS TO THE END OF THE EXTENDED OPERATING PERIOD AND DETERMINED THAT VESSEL CAN BE OPERATED WITHIN THE NEW LIMITS. TECH SPECS WILL CONTINUE TO BE UPDATED, AS REQUIRED BY 10 CFR 50, APPENDIX G OR H, TO ENSURE OPERATIONAL LIMITS REMAIN VALID FOR CURRENT AND PROJECTED CUMULATIVE NEUTRON FLUENCE LEVELS

STAFF CONCLUDES THAT APPLICANT'S PROCESS FOR UPDATING P/T CURVES AND LTOP PORV SETPOINTS MEETS APPENDIX G AND H, AND 10 CFR 54.21(C)(1)(iii)

PRESSURIZED THERMAL SHOCK

FOR VESSEL BELTLINE BASE METAL MATERIALS, MATERIALS WILL PROVIDE ADEQUATE PROTECTION AGAINST PTS EVENTS IF RT_{PTS} VALUES ARE LESS THAN 270°. FOR BELTLINE CIRCUMFERENTIAL WELD MATERIALS, MATERIALS WILL PROVIDE ADEQUATE PROTECTION FROM PTS EVENTS IF RT_{PTS} VALUES ARE LESS THAN 300°

THE PTS REFERENCE TEMPERATURE, RT_{PTS}, WAS PROJECTED FOR THE EXTENDED OPERATING PERIOD AND FOUND THAT THE VESSEL BELTLINE MATERIALS WILL REMAIN BELOW THE 10 CFR 50.61 PTS SCREENING CRITERIA FOR THE EXTENDED OPERATING PERIOD

VESSEL UPPER SHELF ENERGY

STAFF EVALUATED SURVEILLANCE DATA USING REG GUIDE 1.99 AND FOUND VESSEL BELTLINE MATERIALS ARE PROJECTED TO HAVE AN UPPER SHELF ENERGY ABOVE 50 FT-LBs AT THE END OF THE EXTENDED OPERATING PERIOD AND WILL MEET THE SCREENING CRITERIA OF 10 CFR Part 50, APPENDIX G

4.3 - METAL FATIGUE

ENVIRONMENTALLY-ASSISTED FATIGUE (EAF)

APPLICANT COMMITTED TO INSPECTING THE LIMITING SURGE LINE WELDS PRIOR TO THE PERIOD OF EXTENDED OPERATION. INSPECTION RESULTS WILL DETERMINE HOW TO ADDRESS EAF IN THE SURGE LINE. APPROACH WILL IN ONE OR MORE OF THE FOLLOWING OPTIONS:

1. REFINE FATIGUE ANALYSIS TO LOWER CUMULATIVE USAGE FACTOR TO LESS THAN 1
2. REPAIR AFFECTED LOCATIONS
3. REPLACE AFFECTED LOCATIONS
4. MANAGE AGING EFFECTS USING STAFF-APPROVED AMP

THIS APPROACH IS NORMAL FOR ADDRESSING EAF FOR THE SURGE LINE

IF OPTION 4 IS USED, OPPD SHOULD SUBMIT AMP DETAILS FOR STAFF REVIEW AND APPROVAL

CONFIRMATORY ITEM 4.3.2-1: REQUESTS APPLICANT TO CONFIRM THIS SUBMITTAL AS A LICENSE AMENDMENT

STATUS: CLOSED

SAMPLING SYSTEM

USAS B31.1 LIMIT OF 7000 EQUIVALENT FULL-RANGE THERMAL CYCLES MAY BE EXCEEDED DURING THE PERIOD OF EXTENDED OPERATION. CYCLES FOR AFFECTED PORTIONS WILL BE TRACKED USING THE FATIGUE MONITORING PROGRAM (FMP)

AS PART OF THE FMP, SAMPLING PIPING WILL BE ANALYZED AND A STRESS CALCULATION PERFORMED TO DETERMINE THERMAL STRESS RANGE FOR THE LINE

CONFIRMATORY ITEM 4.3.2-2: REQUESTS APPLICANT TO CONFIRM THAT RESULTS WILL MEET USAS B31.1

STATUS: RESOLVED

4.4 - ENVIRONMENTAL QUALIFICATION

APPLICANT'S EEQ PROGRAM CONSISTENT WITH GALL

STAFF CONCLUDED EEQ 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"

- GSI-168 IS OPEN GENERIC ISSUE. WHEN RESOLVED, GUIDANCE WILL BE PROVIDED WITH REGARD TO LICENSE RENEWAL
- APPLICANT WILL PURSUE OPTION 2 WITH REGARD TO GSIs
  - WILL CONTINUE TO MANAGE AGING EFFECTS TO MAINTAIN THE CURRENT LICENSING BASIS UNTIL A MORE REASONABLE OPTION IS AVAILABLE
  - EEQ WILL MANAGE AGING EFFECTS

4.5 - CONCRETE CONTAINMENT PRESTRESS

MANAGED BY CONTAINMENT INSERVICE INSPECTION PROGRAM

- SURVEILLANCES PERFORMED IN ACCORDANCE WITH ASME SECTION XI, SUBSECTION IWL
- TENDON INSPECTION 1, 3, AND 5 YEARS, AND EVERY 5 YEARS AFTER INITIAL PRE-TENSIONING
- 10 CFR 50.55a(b)(2)(viii)(B) REQUIRES TREND LINES FOR PRE-STRESSING FORCES

STAFF REVIEWED RECENT TREND LINE INFORMATION AND FOUND APPLICANT'S APPROACH TO MANAGING TENDONS ACCEPTABLE

4.6 - CONTAINMENT LINER PLATE AND PENETRATION SLEEVE FATIGUE

LINER AND PENETRATION SLEEVES DESIGNED IN ACCORDANCE WITH, AND MEET THE REQUIREMENTS OF, ASME SECTION III

FATIGUE LOADINGS ASSUMED IN THE DESIGN

- CYCLING FROM
  - ONE LOSS-OF-COOLANT-ACCIDENT
  - VARIATION IN OUTDOOR TEMPERATURES (40 CYCLES)
  - VARIATION OF INTERNAL TEMPERATURE BETWEEN SHUTDOWN AND OPERATION CONDITIONS (500 CYCLES)

LINER EXPERIENCED SOME BUCKLING. EFFECT ON LINER FATIGUE EVALUATED AND FOUND ACCEPTABLE FOR THE EXTENDED OPERATING PERIOD

4.7 - OTHER TLAAs

4.7.1 - REACTOR COOLANT PUMP FLYWHEEL FATIGUE

4.7.2 - LEAK BEFORE BREAK

4.7.3 - HIGH ENERGY LINE BREAK

4.7.4 - PRESSURIZER WELD REPAIR (NEW ITEM)

4.7.1 - RCP FLYWHEEL FATIGUE

FCS HAS GE AND ABB REACTOR COOLANT PUMPS

FATIGUE FATIGUE CRACK GROWTH ANALYSES FOR BOTH RCPs REMAIN VALID FOR EXTENDED OPERATING PERIOD, IN ACCORDANCE WITH 10 CFR 54.21(C)(1)(I)

4.7.2 - LEAK-BEFORE-BREAK (LBB) ANALYSIS

OPEN ITEM 4.7.2.2-1: LBB ANALYSIS MUST BE SUBMITTED FOR STAFF REVIEW AND APPROVAL

APPLICANT WILL COMPLETE AND SUBMIT LBB ANALYSIS PRIOR TO PERIOD OF EXTENDED OPERATION.

NEI 95-10 PROVIDES GUIDANCE ON THE DEFERRAL OF TLAAs

APPLICANT SHOULD DESCRIBE METHODOLOGY, ACCEPTANCE CRITERIA, CORRECTIVE ACTIONS THAT COULD BE PERFORMED TO ENSURE THE COMPONENT WILL PERFORM ITS INTENDED FUNCTION, AND IDENTIFY WHEN THE TLAA WILL BE COMPLETED

THE APPLICANT PROVIDED THIS INFORMATION

STATUS: RESOLVED

4.7.3 - HIGH ENERGY LINE BREAK

FATIGUE ANALYSES PERFORMED FOR B31.7 CLASS I PORTIONS OF MAIN STEAM AND MAIN FEEDWATER OUTSIDE CONTAINMENT TO IDENTIFY LOCATIONS WITH CUMULATIVE USAGE FACTOR (CUF) ABOVE 0.1 (CRITERION FOR POSTULATED PIPE BREAKS)

EXISTING POSTULATED PIPE BREAKS BOUND ALL CLASS I SECTIONS OF MS AND MFW PIPING EXCEPT THE MS CONNECTIONS TO THE ISOLATION VALVES. THE CUFs AT THESE LOCATIONS WILL NOT EXCEED 0.1 DURING THE PERIOD OF EXTENDED OPERATION

LESSONS LEARNED

1. NEW LRA FORMAT REFLECTS NEW GALL PROCESS.

   FORMAT AND PROCESS CAN BE FURTHER IMPROVED

2. BETTER DEFINE WHAT IS MEANT BY "CONSISTENT WITH GALL"

3. SER TEMPLATE HELPED TO MORE EFFICIENTLY DOCUMENT STAFF'S REVIEW (FURTHER IMPROVEMENTS TO THE TEMPLATE HAVE BEEN IDENTIFIED)

4. IMPROVEMENTS TO THE GALL REPORT AND SRP HAVE BEEN IDENTIFIED

5. FCS LRA REVIEW HAS DEMONSTRATED THAT THE USE OF GALL RESULTS IN MORE EFFICIENT AND EFFECTIVE STAFF REVIEW WHILE MAINTAINING SAFETY FOCUS

6. LESSON LEARNED FOR FCS REVIEW HAVE BEEN INCORPORATED INTO LATER STAFF REVIEWS AND CLASS OF 2003 LRAs (HELD LICENSE RENEWAL WORKSHOP WITH INDUSTRY ON OCTOBER 22, 2002. INCLUDED LESSONS LEARNED FROM FCS REVIEW)

SUMMARY

STAFF REVIEW HAS IDENTIFIED 11 OPEN ITEMS AND 4 CONFIRMATORY ITEMS

OPEN ITEM (OI) CONFIRMATORY ITEM (CI)	STATUS
OI 2.2-1	RESOLVED
OI 2.2-2	CLOSED
OI 2.3.3.15-1	RESOLVED
OI 3.0-1	OPEN
OI 3.3.2.4.1.2-1	RESOLVED
OI 3.6.2.3.1.2-1	RESOLVED
OI 3.6.2.4.3.2-1	RESOLVED
OI 3.6.2.4.4.2-1	CLOSED
OI 3.6.2.4.5.2-1	RESOLVED
OI 4.7.2.2-1	RESOLVED
NEW OI 4.7.4-1	RESOLVED

CI 2.1.3.1.2-1	CLOSED
CI 3.0.3.12.2-1	RESOLVED
CI 4.3.2-1	CLOSED
CI 4.3.2-2	RESOLVED

GALL HAS MADE THE STAFF'S REVIEW MORE EFFICIENT, BUT AREAS FOR IMPROVEMENT HAVE BEEN IDENTIFIED