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NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

PLANT LICENSE RENEWAL SUBCOMMITTEE

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WEDNESDAY,

JUNE 11, 2003

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ROCKVILLE, MARYLAND

The Subcommittee met at the Nuclear Regulatory Commission, Two White Flint North, Room T2B3, 11545 Rockville Pike, at 8:30 a.m., Mario V. Bonaca, Chairman, presiding.

COMMITTEE MEMBERS:

MARIO V. BONACA	Chairman
F. PETER FORD	Chairman
THOMAS S. KRESS	Member
GRAHAM M. LEITCH	Member
DANA A. POWERS	Member
VICTOR H. RANSOM	Member
STEPHEN L. ROSEN	Member
WILLIAM J. SHACK	Member
JOHN D. SIEBER	Member

ACRS STAFF PRESENT:

RALPH CARUSO

OTHER NRC STAFF PRESENT:

STEWART BAILEY

WILLIAM (BUTCH) BURTON

BARRY ELLIOT

JOHN FAIR

PAUL GILL

DAVID JENG

STEVE JONES

CHERYL KAHN

PT KUO

SAM LEE

MUHAMMAD RAZZAQUE

PAUL SHEMANSKI

WAYNE WALKER

ALSO PRESENT

PHILIP DiBENEDETTO	OPPD
FRED EMERSON	NEI
SUDESH GAMBHIR	OPPD
JOE GASPER	OPPD
KEN HENRY	OPPD
JOHN RYCYNA	CNS
BERNIE VAN SANT	OPPD
BILL WALTON	Dominion

I-N-D-E-X

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

8:32 p.m.

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

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

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

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

this meeting previously published in the Federal Register on May 27, 2003. A transcript of the meeting is being kept and will be made available as stated in the Federal Register Notice. It is requested that speakers first identify themselves and then speak with sufficient clarity and volume so that they can be readily heard.

We have received a request from a representative of Nuclear Energy Institute ("NEI") for time to make a presentation regarding improvements to generic license renewal guidance documents and time for this presentation has been included in the agenda.

This is the first application that relies on standard format and relies heavily on the GALL Report so we have a special interest in this application. With that, we will proceed with the meeting. I call upon Mr. Kuo of the Office of Nuclear Regulation to begin. Mr. Kuo.

MR. KUO: Good morning, members of the Committee and thank you, Dr. Bonaca. Today the Staff will brief the Committee on the results of the safety evaluation of the Fort Calhoun license renewal application. We also have people from Robinson and from Dresden and Quad City tied up on the telephone line. They are listening to this presentation.

The project manager for the safety review of this application is Mr. Butch Burton. He is sitting on my far right. We also have Dr. Sam Lee who is the Second Chief for License Renewal section who is sitting on my right. Mr. Barton will be making the presentation for the Staff on the result of the safety evaluation but with the support of the technical staff. Most of the key technical staff are sitting in the audience and ready to answer any questions the Committee may have.

We have also invited the region's team leader for the Fort Calhoun inspection, Mr. Wayne Walker. He is sitting in the audience right now but he will be making the presentation sometime during the presentation. As you pointed out, Dr. Bonaca, the industry representative, Bill Walton, will make a presentation on the format and content of the application at the end of the Fort Calhoun presentation.

This standard format as you know will be used for all the future license renewal applications. With that, if you don't have any questions for me, the presentation will start with Fort Calhoun. I will turn over this presentation to Fort Calhoun right now.

CHAIRMAN BONACA: Good. Let's proceed.

MR. GAMBHIR: Can I speak from here? Is this okay? My name is Sudesh Gambhir. I'm from Fort Calhoun Station. I'm the Division Manager of Nuclear Projects. I have the oversight responsibility of the license renewal project plus a couple of other projects that we are doing at Fort Calhoun Station.

Mr. Chairman and the Members of the Committee, we very much appreciate this opportunity to provide you with highlights from our license renewal application. That part of the presentation will be made by Bernie Van Sant who is sitting by me here. Bernie is the Licensing Manager for all license renewal applications and part of Bernie taking over we had Dr. Joe Gasper leading this project for us. Joe will also make a presentation. Bernie is a little bit under the weather. So we do have a standby, Ken Henry, just in case Bernie feels like he needs some help in that area.

The team for Fort Calhoun Station license renewal project consisted of members of Fort Calhoun Station who were experienced at Fort Calhoun. Then we also brought in Constellation Nuclear Services ("CNS") to help us with the application. The people who came and worked with us were the same folks who were involved with the Calvert Cliff application. So it

gave us a very strong team to put together a quality document which most of you have had a chance to review it. That's what we'll be providing you the highlights on.

Just a little bit about Fort Calhoun's performance today, over the years we have made substantial improvements in performance. The foundation for going forward is based on an excellent material condition of Fort Calhoun Station. We have a very nice operating record. We were also recently recognized for that by INPO for strength in the material condition and strength in the people ownership. With that, I'm going to turn it over to Dr. Gasper to provide an overview of our license renewal application.

MR. LEITCH: Sudesh, just one question. It seems to me that Fort Calhoun may be unique in it is, I believe, a single unit.

MR. GAMBHIR: That is correct.

MR. LEITCH: And it's still completely owned by Omaha Public Power District ("OPPD"). It's a fairly small unit.

MR. GAMBHIR: That is correct.

MR. LEITCH: I guess one wonders in today's environment of multiple unit sites, bigger

units, whether the long term financial viability is there and whether those pressures have in any way impacted your ability to maintain the plant both now and into the future. So I for one am going to be interested in that. I don't know if you have any comments. It's not really a question. It's just an observation. I don't know if you have some comments on that now.

MR. GAMBHIR: I can certainly address that at this point and if there are more questions, I'll be glad to address that. Fort Calhoun, it is true that we are smaller unit. But on the positive side, the unit is fully paid for. Our decommissioning fund is fully paid for, just about paid for. I think there are a few little things here and there that we need to do. At this point, it's a great asset for people in Nebraska as well as OPPD.

Our Board members, the people who own us because we are owned by the State of Nebraska, they have shown quite a confidence in what we are doing. Besides license renewal, there have been authorizations to do several other things. If you look at our budget, it will give you no indication as to if this being a small unit or financial liability is any consideration at all there. It's the

performance of the plant which will decide the future of the plant.

We are one of the founding members of the Utility Services Alliance ("USA") and we are very active in the USA. As you know, there are several plants that they have teamed together. Besides Fort Calhoun Station, we do have Wolf Creek, Susquehanna, Cooper, DC Cook and Columbia Generating Station. What we get to do in there in the process besides sharing resources when we need it during the outages is we also get to share a lot of experiences.

As a matter of fact very recently, we did an assessment based on Davis-Bessie and that was initiated more as a part of looking at the performance and the safety culture. I did notice that on your agenda I believe for the day after tomorrow you are hearing from Fermi who is a part of USA. You will hearing from Bill O'Connor on the safety culture assessment that has been done for the USA. It's tomorrow actually. I've seen that presentation and I've been part of that.

I'm a member of the USA Alliance Board and that has helped us. But the real future of the Fort Calhoun is as we decided our performance. I think that's very clear. I can share the results from our

last evaluation but when you look at things like stakeholder confidence, we have strength in the area of stakeholder confidence. We have strength in the area of owner of the plant.

We made a lot of investment in improving the material condition of the plant. I can say with pride that we have operated the plant extremely well. We had the last forced outrage that was caused because there was an equipment problem in 2000. That was the only outage since June 1998.

So when you look at the investment that has been made, we have on the books several projects that we are going to be doing and several improvements that we're doing. All those things have been approved in principle by the Board. We do have several contracts that have been signed.

I don't know if that gives you any comfort there or not. But for Fort Calhoun and OPPD, the diversity of the fuel is an extremely important issue. Yesterday I believe The USA Today had an article about that the price of electricity is because of the gas. Fort Calhoun will stay as a really good asset for OPPD.

MR. LEITCH: Thank you.

DR. GASPER: Good morning. I'm Joe

Gasper, Manager of Major Projects for Fort Calhoun Station. I've been with OPPD since 1974 and I was Project Manager License Renewal from 1999 through August of last year. I went through the process of preparing the application, getting it submitted, etc. before I turned it over to Bernie and took over some other projects for Sudesh. Next slide.

We discussed earlier Fort Calhoun was the first application that was based on the Standard Review Plan ("SRP") and GALL. OPPD was an active participant in the NEI, NRC GALL Demonstration Project that occurred in 2000 and 2001. We were the Plant X demo at that time. Based on that project, we, being the Class of 2002, came away with an understanding of what the format of the application was based on that demo.

We submitted an application in January 2002. In February, we met with the Staff and the reviewers. Based on that meeting, it was determined that some revisions to the application were needed and some revisions of the format were needed for the Staff's review. Based on that, we worked with Butch and came up with the changes in the format in late February or early March. We submitted a revised application based on that format in April.

The two major changes to the application at that time were that the original application did not contain a link between the Section 2 tables and the Section 3 tables, Section 2 tables being the equipment list and the Section 3 tables being the result of the Aging Management Reviews ("AMR"). Those links were inserted in the application and put in so the links could be made. Next slide, Tom.

The second change in the format was that for each of the sub- structures and components within Section 3 of the application such as the reactor, the reactor internals, steam and power conversion, etc. We broke the Section 3 tables into three parts: the first part being those systems, structures and components ("SSCs") that had aging management programs ("AMPs") that exactly matched the GALL; the second part being the plant- specific SSCs and plant-specific aging management programs; and then the third portion of it being those aging management programs that were credited for SSCs that were not listed in GALL but had the same materials, the same environment and same aging management program as is discussed in the GALL. That is the method we decided upon to break out Section 3 to clarify the relationship between our application and the GALL. Next slide.

In the Section 3 and Appendix B of the application broke down the aging management programs in three types: first, those that are exactly consistent with the GALL and matched the ten criteria that are discussed in the GALL; second, those programs that are basically consistent with the GALL but in some cases we made either additions or deviations in the ten criteria that were covered by the GALL; and third, plant-specific programs that were not included in the GALL. That was the basis of the format that we went forward with and submitted in April 2002. Next slide, Tom.

MR. LEITCH: When you say "not consistent with the GALL", you don't really mean that there's a conflict with that and the GALL.

DR. GASPER: No, there was not conflict.

MR. LEITCH: It's beyond what's prescribed in the GALL.

DR. GASPER: They were the plant-specific programs. In other words, they were programs that were not discussed in the GALL. That would be a better way of saying it.

MR. LEITCH: Okay.

MR. VAN SANT: Good morning. I'm Bernie Van Sant. I'm Licensing Project Manager. I've been

with OPPD since 1982in various capacities in design engineering. I've started work with Joe on the license renewal application and he turned over a very good product to me so a lot of the credit for this goes to Joe. I'm going to go through the overview of the application.

What I want to cover here is to go through some of the information out of scoping and screening, aging management, time limited aging ("TLA"), information that was unique or different for Fort Calhoun Station. Our project manager, Butch Burton, will be covering these areas in detail as part of his so we just want to pick up the highlights.

Then we'll continue on and identify the interim staff guidance that were applicable to our application. We will finish up with the commitments, open items, confirmatory items and a summary of the operating experience ("OE") that Sudesh had touched on earlier. Next slide.

As part of the scope and screening process, I wanted to touch a little bit on the relationship between the Fort Calhoun Station quality control classifications and how that related to the 10 CFR 54.4 three scoping criteria. When we did the review against the 10 CFR 54.4 criteria, the math was

pretty much identical between the three areas and our quality classifications.

As you can see up there for the Criteria 1 which is the safety related components, it matches up with our quality classification of critical quality elements ("CQE"). For Criteria 2, the non- safety related can affect safety or support safety related actions. It matches up exactly with our limited CQE or limited quality control element classification. Finally, for the regulated events, there's essentially components from all three of the safety classifications that are credited as part of the Criteria 3 or regulated events.

MR. LEITCH: Bernie, I understood you to say that safety-related is almost equal to critical quality equipment or did you say exactly. Is there a difference?

MR. VAN SANT: It is "equal to". The equal sign up there is correct. If I said almost, that was not correct.

MR. LEITCH: Okay. Thank you.

MR. VAN SANT: Next slide, Tom. The way our process scoped and screened was we used the inputs identified in the screening process and for the mechanical and electrical systems, our plant

equipment, database and Q-List have all the quality classifications for the tagged components at Fort Calhoun Station. There's approximately 76,000 components in that database. What we did is for mechanical and electrical we took all the safety classifications and for anything that was a critical quality element or Criteria 1 or Criteria 2, limited critical quality element that was automatically included in the scope of the license renewal.

Then we took the non-CQE and evaluated them against all three criteria to make sure there wasn't any inconsistencies in the way they had been classified for QA purposes. So for all intents and purposes, we took all CQE and limited CQE and then we screened the non-CQE to make sure it didn't fit one of the criteria listed above. If it did, then we put it in scope of license renewal.

MR. ROSEN: You mentioned that you did that to tag components. Do you have any non-tagged components? If so, how do you handle those?

MR. VAN SANT: The non-tagged components were identified through reviews of the USARs, DBDs, P&IDs, EAs and design change packages. That mainly came out for the structural components. We don't have tag numbers of buildings, beams, walls, etc. That was

the methodology that we used for those.

CHAIRMAN BONACA: I have some questions about some items. I guess this is a good time.

MR. VAN SANT: Yes. Fine.

CHAIRMAN BONACA: One question I have is pressurizer spray head not in scope. Now we have already seen this before from previous applications but I have a question here. In the description, it says that in order to bring the plant to cold shut down for Appendix R, you need one of several methods to cool down and to pressurize. One approach is the spray head, I guess, through auxiliary spray supply through by the CVCS.

A second approach is to use open and pure PORVs. A third one is primary site of pressurization by SES charging and decay heat removal by steam generator safeties. You excluded the spray head because you have these other alternate means of cooling. The staff accepted it. I have a question. Isn't there a primary means of cooling that the operator depends on and isn't it the one that he depends on typically to pressurize the spray head?

MR. VAN SANT: Yes, during normal operations, they use the pressurizer spray.

CHAIRMAN BONACA: I can say that

legalistically you can't even bleed or feed. But that's really not what you want to do. I'm trying to understand the logic behind the exclusion of some components based on a backup way of cooling and the pressurizing.

I would like hear from the staff too the point of the order on that because you accepted it. I know we accepted it for a previous application. Still every time I look at it I get heartburn so I have to try to fix that. I want to ask your view.

MR. KUO: During our presentation, we'll address that.

CHAIRMAN BONACA: I need to understand what we rely on when you talk about processes or approaches that are in the procedures that we depend on for meanings of the requirements. Is any backup way acceptable or do you have to depend on a primary way and then somebody tells me that they are very familiar with doing the process other ways and I can buy it but I want to hear about that?

MR. BURTON: Dr. Bonaca, let me just say the issue that you bring up, our reviewer also had the same concern. There was quite a bit of discussion between the reviewer and the applicant on that. When we get up and do our portion of the presentation,

we'll make sure that he comes up and explains his reasons.

CHAIRMAN BONACA: All right. If you want to, we can discuss it later. I would like to certainly make sure that we talk about it because I'm interested in the generic approach you are using. Here's the mode of participation and clearly a usable spray head is the prime of the mode. Yet we are relying on some other ways and that excludes components that otherwise would be in scope.

MR. VAN SANT: Just to add one thing. One thing you need to consider too is that any type of degradation of that nozzle will affect normal operation of any type of degradation that's going to be an impact of normal operation that will require attention. So it isn't an issue that would aged, degraded. One relied on for an Appendix R event would not be available even though we did not credit it.

MR. ROSEN: What would be the indications of degradation during normal operation?

MR. VAN SANT: You would have a loss of ability to cool down as quickly as you'd seen. It would more of a trending issue or previously it may have required more injection time into the pressurizer to achieve a cooldown. You could still do it. You're

going to have the water entering into the pressurizer and it's going to cool it down. All the spray does. It's a matter of how efficient that water cools that steam space volume in the pressurizer. Even without the nozzle, you will get cooldown. That's our analysis basis. There is no spray distribution in there.

CHAIRMAN BONACA: Okay, so you will discuss your acceptance for that.

MR. KUO: The reviewer right now is not here so we're not going to get it. Our presentation will address that question.

MR. VAN SANT: Okay.

CHAIRMAN BONACA: I have another question on scope. When I go through the SER and I can list from page 243 to page 104, there is a brief review of the inspection period where there are a number of implementation problems, spent fuel pools, discrepancies between items in scope and drawings. Fort Calhoun agreed and modified the drawings to include additional components. Nitrogen gas system same issue. HVAC, drawing corrections, auxiliary building HVAC, control room HVAC, and so on.

At the end of reading those sections, I got the feeling that did the review of the staff

identify all areas where implementation was not correct? I have to develop trust that in fact that happened to feel that we have reasonable assurance that all components that should be in scope are in fact identified. So maybe the question should come to you. How do you get your confidence that the items that should be in scope are brought in scope when you have so many cases where you just go through the inspection and discrepancies and you were correct. You use the same guidance that they used and you find additional components within scope.

MR. BURTON: Okay, this is Butch Burton. I can't speak to any of the specifics right now but we will have all of the scoping reviewers here when we start our portion of the review. We can talk in general about how the reviewers approach the review. Then if there are any specific questions on particular components or particular systems we can answer those. We can give you a general overview.

CHAIRMAN BONACA: You're making a statement that you have reasonable confidence and we have to make a statement that we have reasonable confidence and so I would like to understand how you got the reasonable confidence.

MR. KUO: We understand that and during

our presentation, we'll address that.

CHAIRMAN BONACA: Thank you. I'm done.

MR. VAN SANT: The next topic I would like to cover is the functional realignment or regrouping of components that was used to prepare the scoping and screening analysis for the license application. When we looked at doing the scoping and screening process, we based the system reviews on the system component identification.

In other words, the tag numbers pretty much were assigned to the systems in the database. When we looked at that, we found there were some areas that needed to be realigned due to material properties, environment properties that fit better in other systems.

I want to make it clear that when we did this realignment it was following the scoping process that had already scoped the components in or out of the license renewal application. At that point we knew which components performed the intended function for the various systems before we ever moved a component from one system to another.

We also had checks and balances when it was moved from one system to another or to a commodity group to ensure that component was properly

transferred from one system to another. We also had controls on who was able to transfer components.

The reasons why we realigned these components or regrouped them into other systems were for the bullets identified up there. Basically we had commodity groups where we pulled components out of systems to place in commodities.

We had system interface components that for example may have lined up between two systems. While the one component may have been in safety injection for instance, it may have been in a different environment than what the normal safety injection environment of borated water. It could possible be in demin water type environment and therefore if it interfaced with the demin water system we would transfer it over to demin water. Those were the type of system interface issues that we addressed.

Also there were areas where in order to get the application more closely aligned with GALL, we transferred some components out of one system into another because that's how GALL treated them. Specifically if you look at the component cooling water heat exchanges, the GALL has the components identified in the system generating the heat source. Our tag numbers weren't aligned that way. However for

purposes of GALL alignment, we transferred those into the heat generating systems.

MR. LEITCH: Bernie, what you've discussed as I understand it is systems already in scope being transferred from one system to another system. Were there any situations here where systems not originally being in scope were added to the scope by virtue of this type of a review?

MR. VAN SANT: No, we used this to actually eliminate some systems. There were systems, for example plant compressed air, where the only component in that may be the containment isolation valves and the piping in the containment isolation valves. The only intended function for that system would have been containment isolation. We created a commodity group for those type of components, moved that containment isolation valve and piping out of there into the commodity group and then screened that system out from further consideration since there was no other intended function performed by it.

MR. LEITCH: But the part of the air system adjacent to the containment was scoped with the containment then. Is that it?

MR. VAN SANT: The seismic piping supports for that system related to that component are in

scope, yes.

MR. LEITCH: Okay.

MR. VAN SANT: Next slide. The next slide I wanted to talk about was the scoping and screening process for structures. I wanted to touch here just on the items for Fort Calhoun Station. They are somewhat unique or different.

The first item up there is the condenser circulating water discharge tunnel. That was brought into scope because our service water dumps into the circulating water discharge tunnel before it goes to the river.

Also we have an above-ground buried fire protection diesel fuel oil tank. That's somewhat unique in that we have a fire protection fuel oil tank on-grade but it has a masonry block wall built up around it with a concrete roof. Inside that structure, it's filled with sand. That's where you get the terminology above-ground buried tank. It's a tank on-grade surrounded by sand essentially.

The last one there is our safety injection refueling water tank. We bring that up because it's not really a tank. It's part of the ox-building structure. It's a reenforced room essentially that's lined and used for the refueling water storage.

MR. LEITCH: One of the things that's a little confusing to us as we go through this is some of these items show up as open items and in the intervening weeks and months have been resolved. That circulating water discharge tunnel I think is one of those where you originally perhaps had not had the discharge tunnel all the way out to its discharge to the river. You had stopped the scope at some other point and has not been resolved.

MR. VAN SANT: Yes, if you look at the design basis for the Station, it doesn't credit the discharge tunnel as a safety related or even credited for a regulating event for the discharge of that raw water. Based on that, we did not scope it in additionally as a structure that's below the surface of the water level in the river so it's continually flooded.

In going over the issue with the staff in the idea to follow on with what Sudesh said is it going forward in the 2033, we wanted to make sure we had this structure in proper condition just for the operation of the plant. We went ahead and included this in scope.

MR. LEITCH: Okay.

MR. VAN SANT: For the electrical system,

it's shown up there. We basically scoped in 20 systems for electrical. We identified passive components out of those systems, screened them into the commodity groups shown there for cable connectors, electrical bus bars and the containment penetrations for the electrical systems.

MR. LEITCH: I guess I have a similar question on fuse blocks. What's the status of that? There's an issue about fuse blocks, fuse clips. Could you just mention where we stand with that?

MR. VAN SANT: We're in compliance with the ISG on fuse blocks. We've had discussions with the staff members on that and we've come to resolution. We're implementing the ISG.

MR. LEITCH: Okay.

DR. GASPER: The fuse blocks were always in scope. The aging mechanism that came up with the ISG was incorporated as resolution at ISG proceeding.

MR. LEITCH: Okay, thanks Joe.

DR. RANSOM: This may a rather naive question but where did batteries fall? I never saw that mentioned anywhere.

MR. VAN SANT: Those are active components.

MR. BURTON: Let me be clear. I just want

to be clear about the terminology. That's true. The batteries are within the scope of license renewal but they are screened out as being active because they have a change in configuration or properties which is the criteria for whether something is subject to an AMR. So they are in scope but they are not subject to aging management review because they are active.

MR. VAN SANT: Just to briefly go over the aging management review process that we used. Joe had touched on it earlier. After we scoped and screened the components, we then went through and identified the material and environments, looked at the aging effects and identified aging effects through use of the EPRI tools for mechanical and structural.

We looked at the GALL lessons learned and identified aging effects there and also at industry and plant-specific operating experience. We then grouped those components into the aging management programs broken down as Joe had mentioned earlier between the compliance consistent with GALL, consistent with deviations or plant-specific programs.

To give you an idea of what we meant by consistent with GALL with deviations, we had some programs, for instance, our cooling water corrosion program. For the GALL program they included chemistry

requirements as part of that cooling water corrosion program. Our program broke it out between chemistry and cooling water corrosion as two programs. Based on that, we identified that as being consistent with GALL with some deviations. The requirements for both the chemistry and the cooling water corrosion program are a direct match for the GALL. When we say deviations, that's an example of what we mean by a deviation.

CHAIRMAN BONACA: I have a question regarding the thermal shield bolts. You had some history like other plants for the same generation of the loss of preload but you didn't have any experience of cracking of the thermal shield, do you?

MR. VAN SANT: No.

CHAIRMAN BONACA: You did not. And then you replaced a number of those bolts.

MR. VAN SANT: Yes.

DR. GASPER: Yes, we went in and did a thorough inspection and retorqued and replaced as necessary.

CHAIRMAN BONACA: And you do periodically inspect them again as part of the reactor vessel.

MR. VAN SANT: Reactor vessel.

CHAIRMAN BONACA: That is not part of your bolting program, is it?

MR. VAN SANT: No, that's part of the reactor vessel internals program.

CHAIRMAN BONACA: Okay.

DR. SHACK: One of the other unique features of your reactor vessel internals as you seem to be lucky enough to have some good analysis on the components is a flowskirt and I notice you talk about swelling and cracking of that. What data do you have to go on? You are doing fracture mechanics analysis based on fluence but is there any data on Alloy 600 and the radiation system stress corrosion factor fluence levels for susceptibility and behavior?

MR. VAN SANT: I don't have an answer for you on that. I'm sorry.

DR. SHACK: The other unique feature for Fort Calhoun are your 347 control rod drive housings and Palisades has some cracking and I think you had some cracking. How has that been addressed?

MR. VAN SANT: That's an ongoing issue for current license. We are looking at doing inspections weekly, inspections on the housings and last outage and we're doing more inspections on the housings this outage. One of the things that we've committed to the NRC to do is to develop a program right now in some Part 50 space to address this issue. We have a

commitment in the application that whatever comes out of our Part 50 space, resolution of this issue would be carried over in the license renewal.

MR. GAMBHIR: Just to answer that, we have been inspecting these housings for last several years now. What we do is we go in and inspect several housings. So far, we have not seen any degradation but that's something that we're monitoring really actively.

DR. SHACK: I hope you had some degradation once upon a time.

MR. GAMBHIR: We did have one. This was a particular housing that was a spare housing that was not vented. That's when we had a problem. Since that time, what we've been doing is we've inspecting these things. We do this two ways. Every outage we've doing it. So we have not seen anything since then. That is true we did have one.

Going back to your question about the Alloy 600 and probably the same thing applies to the corrosion question also, we do online monitoring. Basically it's a noise monitoring. That's how actually we had earlier detected problems with our thermal shield. So there will be indications and that will be monitored and in that case, it can be managed.

That's how we found the tunnel bolting issue.

DR. SHACK: Well, as I read the document though it says that what you're going to credit for the Alloy 600 flowskirt is a fracture mechanics analysis which means that you're going to do an analysis which means you need some data. I was just curious where the data is going to come from.

MR. VAN SANT: Westinghouse is doing studies for the Alloy 600 issue. They are going to drive that data for us.

DR. SHACK: Okay, is Alloy 600 part of the job or are people doing the radiations on it? I'm just not aware of any data on Alloy 600?

MR. VAN SANT: I don't think there has been any done at this time.

CHAIRMAN BONACA: I have a general question about your perspectives on the guidance for one time inspection. We have reviewed now many applications and we thought that it would be reasonably clear but that's a very important point. When you go to and propose one time inspection versus a program, I look at GALL AMP XI and 3.2 where there's a definition of that and it seems reasonably clear to me. I would like to get your sense. Do you feel that there is clear guidance right now available to

determine when you would go to and propose one time inspection versus a program?

MR. VAN SANT: I'm going to have Ken Henry address this. He's the program experts for the license application. Ken, step up to the mike if you don't mind.

MR. HENRY: I'm Ken Henry. The GALL does give a good description on the expectation for one time inspection. It lists fairly specific criteria for looking at worse case conditions identifying the areas that would be most susceptible. We committed to those standards that were identified in GALL so I feel we have a good understanding of what the expectation of the program is.

CHAIRMAN BONACA: So you think there is enough guidance or do you think that some inferring staff guidance just expanding on it could be helpful?

MR. HENRY: There was one issue that came up during the reviews. There was some additional guidance on the one time inspection for the small bore pipe. I don't remember the exact criteria but there was some additional guidance that we committed to. Do you remember what the exact thing was, Butch? It did come up during one of our audits, the aging management audit.

MR. BURTON: Again the one time inspection was one of the items in our presentation for section three that we were going to specifically talk about. As Ken is saying, one of the issues had to do with small bore piping and our reviewer who isn't here right now but he'll be here at that point of the presentation had to do with turbulent penetrations as well as the most susceptible locations, most susceptible turbulent penetration and one other aspect.

I can't remember exactly what it is but we did capture that because we recognized that in accordance with GALL and the one-time inspections, those one-time inspections have to look in the right places. Part of that was to make sure we laid out the criteria for where those locations should be. We'll talk more about that this afternoon.

DR. LEE: This is Sam Lee from License Renewal Section. Like Butch was saying, it depends on what the location is to look at like penetration areas or aging effect to look at stress corrosion cracking, thermal fatigue. We are actually developing a interim staff guidance to add in these guidance for the small bore piping in these one-time inspection program.

CHAIRMAN BONACA: All right. So you are

actually developing some additional guidance. That I think may be why because in this application what I've seen here in this application is a proper application of the actual guidance.

In other cases, we have seen some debate at times proposing one- time inspection in cases where you know that you're going to have some degradation so it doesn't make sense. It means that there is a misunderstanding of what the one-time inspection is about which is only to verify that we know there is without respect degradation or degradation would be so slow that one other fact is 60 years of alteration. Thank you.

MR. LEITCH: Sam, that ISG is beyond the set of ISGs that we've already seen. This is a new ISG.

DR. LEE: If you look at the status table that we presented to the Committee last month, it's one of the ISG that's under developed. It is an existing one.

MR. LEITCH: Thank you.

MR. VAN SANT: Next slide.

MR. LEITCH: Just one question about the aging management reviews, I think Fort Calhoun has experienced early on some buckling of the containment

liner plates. Did that drive you in any way to change your aging management review at that point?

MR. VAN SANT: We looked at the buckling that was identified. It appears to have happened either during construction or shortly thereafter. We performed a detailed fatigue analysis, finite element analysis on that and determined that we're within the stress allowables for that. We haven't done anything in the way of an aging management program to address that. We feel it's a design issue that's been analyzed.

MR. LEITCH: But the buckling as I understand it was more than what's predicted.

MR. VAN SANT: It was more than what the tolerance allowed and therefore it had to be analyzed as a deviation from the design standard. They went back in and for that particular area did a finite element analysis of it to ensure that it still met the design requirements.

MR. LEITCH: But it didn't in any way impact the integrity of the liner plate.

MR. VAN SANT: No.

MR. LEITCH: Okay.

MR. VAN SANT: To summarize the results of the aging management review, we have 24 aging

management programs that we credit in the application. Those are documented in Appendix B of the application. The application identifies which of those programs are consistent with GALL and which ones are plant-specific and also which ones have deviations.

It also summarizes the operating experience that we've had with those programs. For our application, we had plant-specific programs. We used the 10 criteria out of the SRP to evaluate those programs and ensure that they complied with the rule for aging management program. We bring this up because we're one of the first plants to come through and use the GALL. That's why we identify this slide. Next.

For Fort Calhoun Station, we had fourteen TLAAs total. Four of them were plant-specific TLAAs. The other ten were identified as part of the review of the SRP TLAAs. For Fort Calhoun, we had the environmental fatigue issue for the reactor coolant system piping. We have the TLAA for leak before break that was credited in resolution of USIA-2 for the reactor coolant system.

We also back in 2000 had a leak in a J-groove weld on the nozzle for our pressurizer that was repaired. That also was a TLAA for Fort Calhoun.

We have energy line break issues that became TLAA as a result of crediting usage factors for our main steam and feedwater piping for break selection on location criteria.

DR. SHACK: I had a question on your fatigue monitoring system which you are essentially using to repressurize your surge line where you have a very high computed usage factor. When you do the fatigue monitoring, you get presumably much more realistic cyclic histories but then you compute a usage factor from that which I assume are based on fairly realistic or ASME code stress levels. What kind of fatigue cycle curve do you use? Have you used a realistic cycle history and you're still using perhaps a non- conservative fatigue life curve or is everything realistic?

MR. VAN SANT: We're using the real life operational experience to develop the fatigue cycle count. Then we're doing the fatigue evaluation in accordance with the NUREG regulations for 62.60 if that answers your question. We have committed that as part of prior to going into the period of extended operation in which we're going to look at the surge line. We'll ever have to replace it, repair it.

If they have an inspection program

developed that allows for inspection and deposition of the fatigue usage greater than one prior to extended life, then we may credit that. Additionally we're changing out our pressurizer as part of our power upgrade program. At that time, we'll more than likely replace the line.

DR. SHACK: When you have the realistic cycle history, do you use essentially a life curve with environmental degradation or is it the code life curve?

MR. VAN SANT: No, we have the environmental fatigue correction factor applied to those.

DR. SHACK: Okay.

CHAIRMAN BONACA: I have a question about your Alloy 600 program. That's a new problem for license renewal, isn't it?

MR. VAN SANT: Excuse me.

CHAIRMAN BONACA: The Alloy 600.

MR. VAN SANT: The Alloy 600, yes.

CHAIRMAN BONACA: It contains a lot of the actions that you have to implement to this point to for example CRDM cracking and the inspections. The question I have is will you wait ten years before you implement this program. Are you waiting for license

renewal or are you going to implement it before? It seems to me that a lot of this stuff that is discussed there is needed today.

MR. VAN SANT: Right. We're in the process of implementing it right now and Ken can give you some more detail on that.

MR. HENRY: It's a new formal program as part of the license renewal but we have things going on with Alloy 600 as an industry. A lot of the activities are new per se but just the fact that it has been formalized into a specific identified program. Yes, it's ongoing and with the current industry events and stuff, we're maintaining that program ongoing.

CHAIRMAN BONACA: When I look at it, I feel that it would be great initiation irrespective of license renewal. That's really where license renewal is helpful in developing some programs that may be convenient to implement before you get to the license renewal period. That's a real improvement in the management of the inspections there.

MR. VAN SANT: Our intent for all our programs is to get them implemented as soon as feasible just because it's something that if you wait ten years and then go in and try to implement you've

lost a lot of the history and a lot of knowledge of why you are doing it. Our intent on all our programs is trying to get them implemented as soon as we can.

CHAIRMAN BONACA: Yes. Do you feel that you have enough documentation, guidance, etc. so that these commitments will not be forgotten. Some of these programs right now are just on paper. They are just promises that you will do this or you will do that.

MR. VAN SANT: Right.

CHAIRMAN BONACA: But you feel that there is enough guidance for the future generations to pick up and remember where the commitments came from.

MR. VAN SANT: Yes. We have a slide here further on that talks about commitments but I'll touch on it now just to say yes, we have them documented, tracked and our methodology ensures that we keep those commitments alive and store the basis for them.

MR. ROSEN: This discussion reenforces the discussion we had yesterday with the Region I staff about the bow wave we mentioned before. Here is a case where a licensee was already in fact implementing provisions of his license renewal and the staff in the regions needs to be cognizant of that and on top of that beginning effectively now. So the bow wave

begins today. It begins even before the license is renewed.

CHAIRMAN BONACA: You have a good point. We didn't sense that the region was really actively looking at license renewal yet. And yet they have a lot of plants that some of them already have obtained renewed licenses.

MR. LEITCH: Calvert Cliffs.

CHAIRMAN BONACA: So there has to be some awareness on the part of the region on what's coming to them particularly because now for example this application, a lot of GALL are not being inspected now. The reliance is going to be on the region to inspect before license renewal. Now I think I know what's coming to them.

MR. KUO: I believe most of the regions are aware of what's coming. We have had interface meetings between the region called the counterpart meeting. In the past, we had one in Region II and then Region III. We do convey the message of license renewal and how much they have picked up on this needs to be seen. But yes, they are aware of this.

CHAIRMAN BONACA: But isn't it true that now reliance on GALL increases their workload in the future?

MR. KUO: No.

CHAIRMAN BONACA: What you did for whatever the applicant said we are consistent with GALL you did some audit to verify that.

MR. KUO: Yes.

CHAIRMAN BONACA: And then the rest was left to prelicense renewal -- to verify. So there seems to me some additional work that you used to do that now is put off to the future and is being done by those inspections.

MR. KUO: Actually we haven't start I wouldn't call a new process but we proceduralized our process to have the headquarter people to do the audit early on.

CHAIRMAN BONACA: The headquarter people.

MR. KUO: Yes. The headquarter people early on.

CHAIRMAN BONACA: At some point in the future it would be good for us to understand how these activities are going to be.

MR. KUO: Yes, as soon as this procedure is formalized. Actually I would like to come before the Committee and give you an overview of our process so that you all know what we've been doing.

CHAIRMAN BONACA: Yes, we will be glad to

hear it.

MR. ROSEN: It may be useful, Mario and Graham, to make some comment in our letter about this point about the early implementation of the inspection of these activities. I don't think we've done that before. We've talked about the bow wave but always in the sense that it was quite a few years out in the future and it's a challenge for staff resources in the future. But it's not so. It's actually a challenge beginning now.

DR. LEE: This is Sam Lee. For the existing program that's consistent with GALL, when the region does the two inspections, three inspections, they also inspect those today. They do not wait until later.

MR. ROSEN: Not exactly consistent with what we heard in Region I yesterday.

DR. LEE: I guess when Wayne Walker comes up he can probably talk about the region inspection and what did it cover.

MR. KUO: Dr. Rosen, because of that there might be some deviations between regions and that's why we are right now proceduralizing this process. From now on, we, the headquarters, will be doing the audit. The whole process is evolving and as soon as

we are ready, we will come back to the Committee and give you an overview of all that.

MR. VAN SANT: The next slide we had up there was just some information to identify which of the ISGs that have been implemented have been incorporated into our application. I won't go into any detail on that. I know we're running a little late unless there are any questions.

CHAIRMAN BONACA: Yes, the SER actually, it's good. There are a lot of improvements and at least, the commitments in the back is very good. Just to the applicant, I have a question in general. You had an application that contained a lot of descriptions. Some of those elements have been changed because you have agreed to change it there. We are not going to go back and update the document. The document remains historic.

MR. VAN SANT: One of the things that we had as an open item was update of the Table threes in the MR review. A lot of what went into that table revision was things that came out to document these types of issues in the application.

CHAIRMAN BONACA: So you think if the whole staff now over the next ten years retires and you have a new staff coming, they will be able to

understand the logic behind all things or changes, the combination of the application and the SER.

MR. VAN SANT: Yes. The other thing that we had is an effort ongoing to update our plant documentation that was used in the development of the application. Once we get the plant engineering analysis updated that will reflect the current application as shown in the SER there will be a paper trail that will easily followed.

CHAIRMAN BONACA: Okay.

MR. VAN SANT: I wanted to talk here a little bit about the commitment listed in the SER. It consists of three different commitment types: program enhancements, new programs and TLAA evaluations. This is a little bit unique in that some of the previous plants didn't have these commitment lists included as part of the SER. We'll have them as part of the SER and also they'll be included in our Appendix A update to our USAR.

We have a commitment action tracking program for all licensing commitments that OPPD Fort Calhoun Station makes. These commitments will be treated the same as any of our other NRC commitments. What we do with the commitments once we've put them into our action tracking database is we go out and

annotate the procedures that actually implement that commitment. So that when you're in the field and you look at the procedure if there's a step in there, it annotated as to why that step is in there if it's there for a commitment. Someone going through and doing a procedure change wouldn't get rid of that procedural step without knowing that there's some licensing actions that would need to occur before they could do that.

Ken Henry can give a status on where we're at on implementation of these procedures. In interest of time, I don't know if we want to do that. It's up to ACRS.

CHAIRMAN BONACA: Any interest in that? I think we can move on.

MR. VAN SANT: Okay. Just to summarize the SER open items and confirmatory items, we have 11 open items, nine that required OPPD action with four confirmatory actions. OPPD has been up here in public meetings with the staff to discuss these open items. We have gone over our proposed resolution for all nine and I believe we have concurrence from the staff that the proposed resolution is acceptable. Given that, we'll go ahead and formally submit our resolution for the open items, our responses to the open items. We

expect that we'll all those closed out here in a very short period.

MR. LEITCH: I'm curious about the other two. How are they going to be closed? Is that staff actions?

MR. VAN SANT: Yes, staff actions. Next slide, Tom.

MR. SIEBER: The letter you sent in dated March 14, 2003, is that the resolution letter?

MR. VAN SANT: No. With this slide, I just wanted to finish up and go over what Sudesh had touched on earlier. If you look at our recent plant operating experience, we've had problem performance indicators from the NRC. Our NRC Problem Identification and Resolution Inspection was completed here back in May and showed no green or higher findings. We've been recognized by INPO as having excellent operation.

I did want to note one thing. Last year, in the spring of 2002, we made a decision to shut down early and replace our leaking fuel. It had been a problem that we had been dealing for several years. There were design problems in the manufacture of the fuel that we couldn't overcome. After dealing with that problem and not getting any resolution on the

design issue rather than run until the end of cycle, we elected to shut down early, get rid of the bad fuel, change fuel manufacturers and solve the problem. To date on this current run, we have no leaking fuel identified.

MR. LEITCH: You had a grid-to-rod fretting problem.

MR. VAN SANT: Yes.

MR. LEITCH: Now don't you still have some fuel still in service that has that same potential problem?

MR. VAN SANT: No, sir.

MR. LEITCH: It's all gone.

MR. VAN SANT: We have changed out that fuel. That was why we shut down earlier was to get rid of that fuel that had that potential problem.

CHAIRMAN BONACA: You still have 14 by 14 assembly design.

MR. VAN SANT: Yes.

MR. ROSEN: What do you run the peak burners on now?

MR. VAN SANT: Joe, do you know?

DR. GASPER: We are basically 1/3 batch 18 month cycles, pretty standard for CE type reactors. I can't give you a number. We're basically pretty

much running the standard CE reactor fuel to fuel design and fuel.

CHAIRMAN BONACA: So you have not transitioned to 24 month cycles.

DR. GASPER: No, we have not switched to 24 month cycles. We're 18 now.

MR. ROSEN: So when you are on 18 month cycles, you're loading cores that with energy content equivalent to something on the order of 500 effective full power days.

DR. GASPER: Yes. We fuel every 18 months. We're running about a 30 refueling outage and we're a capacity factor of about 90 percent. It's roughly 500 day cycle.

MR. VAN SANT: The next point I wanted to make is since 1998 we've had only one forced shutdown and that was due to the leak in the J groove weld on the pressurizer. That's also identified as one of the TLAA. Finally the last outage was when we performed a reactor vessel visual head inspection and identified that the top of the reactor head vessel was very clean. It had no leaks from any of the nozzles. We're also going to be performing that same inspection this coming outage in September. Then in 2006 we do plan on changing out the reactor vessel head.

MR. ROSEN: Have you looked at the bottom at any time?

MR. VAN SANT: No, we have not. We have no nozzle penetrations in the bottom head.

MR. LEITCH: I didn't quite hear. When do you plan to replace the head?

MR. VAN SANT: 2006.

MR. LEITCH: So you will have another inspection to do between now and then.

MR. VAN SANT: Yes.

MR. LEITCH: Do you expect to be able to fully comply with the NRC Order on that topic?

MR. VAN SANT: Yes, we do. We're going to do a full inspection on that, a volumetric.

DR. SHACK: Oh, it's going to be a volumetric.

MR. VAN SANT: In 2005, yes.

DR. SHACK: And how many effective degradation years do you have?

MR. VAN SANT: As of this outage, it'll be just under 12.

MR. ROSEN: And what's the temperature?

DR. SHACK: They have the EDY so that's at 12 at 600.

DR. GASPER: Head temperature is slightly

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

MR. LEITCH: Just one question about your operating experience. I read that a couple of weeks ago the unit came off in a planned fashion but evidently you found it necessary to file an event report because you predicted that the grid voltage would drop below that allowed in the tech specs. I guess that leads me to two question. Is that normal? It makes me think that maybe your power supply connection to the grid is perhaps more fragile than we're used to seeing. I was just wondering. Do you always get low grid voltage when you take the machine off or was it some unusual set of circumstances at that time?

DR. GASPER: Joe Gasper. Immediately we filed the report based on a computer program and identified that we would anticipate the voltage issue. However in talking to our distribution center, there was no physical indications that there was a problem on the grid.

Upon further investigation, we determined that it's a program that was run by a regional distribution council and determined that something was going on in the program. There were no indications on 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

offline, would we have enough voltage. We're still trying to learn the intelligence how you predict 5,000 points to make sure that you have enough voltage. There is no problem with the grid. As a matter of fact, there's a lot of investment made in the grid to improve the situation there.

MR. LEITCH: Okay. Thank you.

MR. GAMBHIR: If I could just sum this up here and I'll go back to your questions about the viability of Fort Calhoun Station. That question is a very good question that's been asked by many people. The answer always comes back because of the reasons I explained earlier. It's still a good investment for OPPD.

Just to add a couple of things here, we do have a contract in place to replace the steam generators in 2006. Since this is a small containment, we have to make a big hole in the containment to get the steam generators in there. Even though we have not seen any problem with our reactor vessel head, we thought this would be a prudent thing to go ahead and replace the reactor vessel head also. So we are doing that in 2006.

Bernie earlier alluded to the fact that we are also looking at replacing the pressurizer. Once

again we have not seen any problem but we recognize that there could be problems because of what's happening in the industry. So we have as a matter of fact in the very final negotiation of buying the new pressurizer if that happens, we`ll be one of the first to replace the pressurizer. It's not for a reason but just as a prudent thing.

We're also looking at several improvements on the BOP side. OPPD has made considerable investment in hiring new operators. We have a leadership academy that runs for four weeks and we've investigated a lot of time and resources in developing people. We'll have people to run the unit. All of that I would say is an indication that we have very good support from the corporation.

We also are very active in the industry. You probably will see somebody from OPPD somewhere, wherever we are. Part of this is fighting complacency because we don't wait to be complacent. We don't want to be isolated. So that's very well supported.

And with the questions earlier about what are we going to do with these commitments, someone who has worked on design basis reconstitution and tried to dig out information from the plant that was built, I have a personal commitment to make sure that these

commitments that we are making stay in our active document and that information and knowledge is turned over to the next generation. That's the vision that we have. I don't see a developing problem at Fort Calhoun Station. So the commitments we are making, Dr. Bonaca, those commitments will become institutionalized commitments in our process. Thank you.

MR. ROSEN: Coming back if I can to the question of this inspection by regions of activities that are actually caused by license renewal, in looking at the commitments table in A-5, almost all the commitments are to implement the program prior to the period of extended operation. That's all it says. Now for a licensing document, that seems perfectly appropriate to say that but in practice in reality, there is a more definitive schedule than that.

MR. VAN SANT: Right.

MR. ROSEN: It would seem to me that it would be useful for the Committee and certainly for the regions to have more information than that bold statement of prior to the period of extended operation.

MR. HENRY: Hi, Ken Henry. We're implementing stuff now, for instance like the Alloy

600 program. The program basis document has already been developed and is in place. There are recommendations in that program basis document that are still need to be implemented.

For example, we identified approximately 175 procedures that needed to be annotated. At this point, 106 of them have been approved and are in the books. We expect the rest of them to be implemented within the next months. Our goal really is to have most of everything in place by the end of the year. That's just a goal.

There are some activities for instance the one-time inspections. There are some that won't be done, like the reactor vessel, until the last 10-year ISI inspection which happened to occur the year before. Some of those type of activities will stretch out but the actual procedures, documentation type items, will be incorporated in the near future.

MR. ROSEN: There is a real world schedule for doing these things, not a licensing fiction.

MR. HENRY: Yes.

MR. ROSEN: And that real world schedule would be useful to the Committee and I'm sure to the region. For example, just to put a cap on this, you are going to perform dipaniger (PH) examinations on

two RCP thermal barriers some time before the period of extended operation. Clearly the region would want to witness that and be involved and set their own procedures for reviewing it. Yet with this information, they really have no indication whether that's going to start tomorrow or in ten years. I'm campaigning for more transparency of the actual scheduling and more coordination with regions.

MR. KUO: Mr. Rosen, I just want to make a remark here. As far as the license renewal really is concerned, we don't have any requirements for the applicants to implement their committed program for license renewal before year 40. As you said in reality if the applicant is willing voluntarily to implement the programs earlier and let us know, that would be great. I just want to point out that there really isn't the requirement. If we would want to require the applicant to do that, then it would be involving a real change in that sense.

MR. ROSEN: I'm not suggesting that.

CHAIRMAN BONACA: Okay. So any other questions for the applicant? If not, I think the next presentation is from the staff.

(Pause.)

MR. BURTON: Good. Thanks. Can everybody

hear me with the microphone? Good morning. My name is Butch Burton. I was the Staff's lead project manager for the review of the Fort Calhoun application.

A lot of my initial comments have already been addressed. As you know, Fort Calhoun was the first plant to fully implement the new GALL process. If you remember when you looked at St. Lucie, St. Lucie did implement certain aspects of GALL but Fort Calhoun is the first plant to full implement it.

First, just an overview, some general information. As the OPPD already mentioned, the application was submitted really by letters dated January 9 and April 5. The reason for the second submittal was because some of the information which they submitted in accordance with some of the lessons learned from the demonstration when some of the staff reviewers looked at the format of that, they had some real problems.

Initially there was a complete disconnect between the plant- specific structures and components identified in Section 2 and the generic GALL information in Section 3. When some of the reviewers took a look at that who actually had to do that work, they said "It's going to be really difficult for me to

meet the requirements of the rule" which says that they need to demonstrate that plant- specific structures and components are going to be adequately managed. If we are going to be crediting GALL programs to do that, we need to see the nexus between the two. As a result, we asked them to go back and provide some linkage between the two. That's what the April 5 submittal.

Again as you've already mentioned, it's a one-unit pressurizer water reactor. It has a megawatt thermal stop 1500, megawatts electric about 475 located in Nebraska about 19 miles north of Omaha. They are requesting a 20 year extension of the license which will put them to 2033.

Again, it's the first plant to fully utilize GALL. I wanted to identify some of the key correspondence that we had. We issued 214 RAIs. Unless I'm mistaken, this is the smallest number of RAIs that we have issued for any of the applications so far which we think is somewhat of an indicator of some of the efficiencies that were gained.

MR. LEITCH: It's not as much smaller as I thought it might though. Could you comment on that?

MR. BURTON: Sure.

MR. LEITCH: The other numbers I thought

were only incrementally higher than the 214 there.

MR. BURTON: I actually can explain that. Because it is the first GALL plant, even with the advanced work we've done and the demonstration project, not all of the reviewers had been part of the development process. So when they go the application, there was still a number of reviewers who were still not quite understanding what it was about and what they were supposed to do and whether they even had full confidence in the process.

MR. LEITCH: These RAIs were issued after the April application.

MR. BURTON: Yes.

MR. LEITCH: We didn't react to the January other than to say that you need to resubmit for April.

MR. BURTON: That's correct.

MR. LEITCH: So the RAIs were after the April application.

MR. BURTON: That's correct. The staff needs to be confident in the process also. So what we did was we gave them a little bit of leniency to say if you really want to try and test this new process and you want to ask some sample questions just to confirm that it's doing what it says it's doing, we'll

allow that. So we did a few RAIs that did that. We don't expect that to continue. We expect that as the staff gains confidence with GALL and the process and what they're supposed to do, we're going to see some further reductions in those RAIs. But it being the first one, we tried to give them some slack with some of that.

DR. LEE: This is Sam Lee. Mr. Leitch, you made the correct observation. For this, presently we are seeing between 200 and 300 RAIs. It's pretty typical. What we are looking at is we are asking ourselves the same questions. Why is this still happening? So Dr. Kuo just talked about, we are going to develop a new process which is more efficient using all this and more effectively use GALL. So we are going to work on that.

MR. BURTON: And later on, I'm going to be talking about some of the lessons learned which will touch on some of the things Sam said. So we issued 214 RAIs in mid October. OPPD responded to those RAIs in three different submittals in November and two in December.

In addition to those RAIs, we had another step in the process. Again because this was the first GALL plant, we wanted to exercise a little bit of

flexibility from what we normally do. We do not normally issue what I'm calling potential open items (POIs). I think we may have done that with one other plant. Actually I think it was Hatch which was the first BWR that went through license renewal. But we did issue another set of what we called potential open items in February. Those were responded to by letter dated March 14. Then finally our SER with open items was issued on April 21.

Now what you see here is in the SER there were 10 open items and four confirmatory items. This is the first that you all have heard of this. However, after the SER was issued, another open item was created. It has to do with that pressurizer nozzle J-groove weld that Bernie Van Sant talked about. So in your SER when you do your count, you'll see 10 open items and four confirmatory. There is one additional one. A good part of our discussion in Section 3 is to brief you on what that new open item is and how it came about, how we're addressing it and the current status.

We're going to talk about the inspections and audits in more detail a little bit later. However, just in general, as we normally do with the applications, we had a scoping and screening

methodology audit in July whose purpose was really just to look at the scoping and screening methodology. If we don't have confidence in the methodology, the results don't mean a whole lot. So one of the first things that we try to do as early in the review as possible is to get our arms around the methodology and how they did what they did. We did that in July.

We had the scoping and screening inspection in November. Out of that inspection, we identified four inspection open items, all of which right now are resolved. We did identify them there and we'll talk about that a little bit more when we talk about the scoping and the AMR inspection.

The AMR inspection and audit, we did for two weeks in January. During that, we actually looked at how they addressed the four inspection open items that were identified in the scoping inspection as well as the normal stuff that we do during the AMR inspection. We'll talk more about that later on.

MR. LEITCH: There's an optional third inspection that is sometimes done. Did you decide not to do that at Fort Calhoun?

MR. BURTON: I think Wayne can talk about that. I don't want to put words in his mouth but we don't see any telltale things hanging out there that

we feel we need to go back and look at. So right now, it doesn't look like we're going to have the option of the third inspection.

Going into the SER now starting in Section 2.1, Scoping and Screening Methodology, this actually describes the methodology that's used how they go about identifying structure, systems and components that are within the scope of the rule and subject to an AMR. I already mentioned we did the methodology audit in July.

The purpose of the audit was to make sure that they are doing things in accordance with the Rule and their own application. How they describe their methodology is what they actually do onsite. As a result of that, the audit team found that the applicant's implementation was satisfactory. They were doing it the way they described in the application and in accordance with the Rule.

CHAIRMAN BONACA: Did you address however all those exceptions that you have listed in the SER?

MR. BURTON: Yes. What I'm going to do is when I get into Section 2.3 because a lot of your questions like that I'm going to ask one of the scoping reviewers, Steve Jones, who actually handled a number of those RAIs that you looked at to come up.

Steve generated a lot of those. I'm going to ask him to come up and actually walk you through exactly what he looked at, how he came up with the questions and how they were ultimately resolved. I'm going to do that actually when I get to Section 2.3.

CHAIRMAN BONACA: I realize that more than what was resolved is why there is nothing else to be resolved.

MR. BURTON: Yes. What I'm going to do is I'm going to talk about that in general and then I'm going to have Steve talk about it because he actually implemented the process that I'm going to describe to you.

One of the issues that came up was the issue of functional realignment which we've talked a little bit about. When we did the methodology review and audit, we found that the methodology used to identify how they functionally realign components wasn't very well documented. So during the scoping and screening inspection, we actually sat down with them and had us walk through the methodology because it wasn't really clearly described in the application.

Subsequently, in response to an RAI, they gave us a full description of how they exactly did the functional realignment which Bernie shared with you

during the earlier discussion. We have all that documented now so it's clear. Once we understood it, we were okay with it.

These three items underneath that are basically the three items Bernie talked about. Their methodology functionally realigned components based on similar intended functions which you are all already familiar, containment isolation valves that are spread out across systems. They all have the same intended function so many applicants have actually created their own separate system for containment isolation.

Some of the components were commoditized. I give an example of bus bars and cables for electrical systems. They cut across a number of the electrical systems but they all have the function and do the same kinds of things. They commoditize them and group them together.

Some components were realigned based on similar materials or environment. Again Bernie spoke to this a little bit. A lot of this was generated as a result of GALL. Once they started doing their scoping and screening, they found that if they are going to follow GALL for certain components it's easier because they have similar materials and environments. Even though they are in a different

system, usually these are heat exchanger interfaces, things like that. It's easier to look at that component with the other interfacing system because it's going to share certain materials and environments. Those are some of the issues that were considered when they functionally realigned components.

I mentioned before that during the scoping inspection we identified four inspection open items. This was one of them. We actually have this as a confirmatory item. During the scoping inspection once we identified it, we kicked it back to the reviewers in headquarters to say "Look, this needs to be evaluated". This is something we brought up. So we generated a confirmatory item for the safety injection tank level and pressure indicators.

Initially they were not identified as being scope but they are needed to ensure a minimum level in the safety injection tank and pressure. So the indicators that they rely on to ensure that, we felt needed to be in scope. In fact, they did bring those indicators in scope. So the status of that confirmatory item is closed. We found when all was said and done the review and the methodology audit found that the applicant's scoping and screening

methodology satisfied the Rule.

MR. LEITCH: Like the battery example we were talking about before.

MR. BURTON: Yes.

MR. LEITCH: Those level and pressure indicators although in scope would likely have screened out as being active.

MR. BURTON: Absolutely right. Indicators by the Rule are considered active components. So they would be in scope but they would screen out and not being required for an aging management review.

MR. VAN SANT: Butch, can I clarify one thing on that? These are not the safety injection tank level indicators that are credited for tech spec. These essentially are used as backup for our tech spec credited safety injection tank level indicators. However the staff reviewers felt, and I think rightly so, our current tech specs don't have any LCO criteria if you go to operate on these backups. Therefore they got pulled in scope because essentially they could be relied on in lieu of the tech spec level indicators. I just wanted to clarify that.

MR. BURTON: Thanks, Bernie. So that was it for Section 2.1 on methodology. Going to Section 2.2 Plant Level Scoping Results, if you go to the

application the main thing in this section is a big table, Table 2.2-1 that basically lists all of the systems and structures and identifies whether they are in fact in scope or not. So one of the things we do is we go through that list of systems and structures and again our focus is not to dwell on things that the applicant has already identified as being in scope. What we're looking at are the things that they didn't identify as being in scope to see if any of them should be. So we're looking for omissions primarily.

In this section, I want to talk a little bit about the 54.4(a)(2) scoping criteria. As you all know, this really came up as an issue back with the hatch review when we started talking about seismic 2/1 and things like that.

Since that time, we actually issued two separate interim staff guidance documents, one in December that spoke specifically to how to identify and treatment seismic 2/1 SSCs and then a second one in March 2002 which dealt with the broader A2 issue. That instrumentation and control systems ("I&C") still has not issued formally. But we've had interactions with the industry and we're doing the final markups to get that issued. In the meantime, there is still an A2 scoping criterion that needs to be looked.

Now when we started the review and the scoping inspection, the applicant had not finished all of its evaluation of A2. They had not finished all of their identification. They did subsequently though finish it and put it in one of their what they call engineering analysis. It's a binder that actually gives all of the evaluation results. They have an engineering analysis ("EA") for this particular criterion. As result of that, these additional systems were brought into scope based on this scoping criterion.

When a system restructure or component is brought into scope, that's not the end of it. Along with that, they have to bring all of the aging management information for those things that are brought into scope. They did do that. They identified these as being in scope and brought the aging management information. Staff reviewed that aging management information and found it acceptable and as of now the open item that was initially generated with regard to A2 criterion is now resolved. We feel comfortable that all of the systems that meet the A2 criterion have been identified. Staff has looked at the associated aging management information and has found it acceptable.

Now when I give the status of opening and confirmatory items, I need to make this clear. There are actually three levels of status. There's open and open technically means that the staff and the applicant still have not reached resolution of the issue. Resolved means that we have reached resolution but that resolution has not yet formally been submitted to the staff but informally through meeting and telecons and stuff like that, we've agreed to answer.

When we get that official submittal in documenting that, then it goes closed. Right now, this is resolved when they submit their final open item submittal with the agreed-upon resolution. Then this will go closed.

MR. LEITCH: Out of things we are interested in is the efficiency of the process. I got the impression from reading some of the open items it appeared as though these items were brought in to scope at one point in time but later there needed to be another request to provide additional that is the aging management information associated with these items that were just brought into scope. Is that correct? Was there a two step process there?

MR. BURTON: I don't remember the details

specifically of this but that is certainly possible. I do know that there were instances where something was brought into scope and not necessarily all of the aging management information came with it. Therefore we had to make another request.

A similar situation is when there were perhaps changes made to aging management programs but the FSAR supplement, the general description of the program, wasn't submitted with those changes. Sometimes we would have to go back and ask for the actual summary description of the program. In both this area as well as the aging management programs, we did have a few instances of that kind of thing where we had to do a couple of rounds of discussion.

MR. LEITCH: And that accounts in the 214 RAIs? In other words, that would be an RAI.

MR. BURTON: Actually with that kind of situation, we would usually ask the RAI -- For instance, if it was true in this case, we may have asked the RAI having to do with A2 and they have submitted this information.

Then I mentioned before about the potential open items. A lot of those were follow-ons from an RAI response. So we may have had a potential open item that said "Okay, you gave us this but now

give us the associated aging management information." Do you see what I'm saying? There were several instances where you had two cycles of that kind of thing.

MR. ROSEN: There's a system on that list, Butch, that's a bit of a surprise to me. That's the potable water system. What is it about the potable water system that could fail a safety related system if it's failed? Is it a flooding concern?

MR. BURTON: Actually I need to turn it over to them. I don't know all the details.

MR. ROSEN: All right.

MR. VAN SANT: The way we approach the 2/1 was more or less as a spaces approach where we looked at areas where we had safety related equipment and we went in and identified all piping systems carrying water and included them in scope. We didn't go through and identify what portions or what systems actually had the potential for it. We simply captured them in scope and addressed them with an aging management program.

MR. ROSEN: Anything that had a pipe. There's no unique big tank or anything like that in the plant.

MR. VAN SANT: There's a large tank in our

steam penetration room but that doesn't set over or near any safety related equipment that it could affect, no.

MR. ROSEN: In your process at any time when there's fluid filled piping, is that going to be in the program?

MR. VAN SANT: Yes.

CHAIRMAN BONACA: Was that the driving force behind seismic 2/1 for inclusion on the most of the systems here?

MR. VAN SANT: Yes, on a spaces approach.

MR. BURTON: Yes, like I said, seismic 2/1 started this whole thing and then we had a separate draft ISG for the broader A2 question. In that and what you'll see in the final ISG is that we do differentiate between non-safety related systems that are physically connected to safety related systems and how to treat that and then we also have a separate discussion on non-safety related systems that aren't physically connected but there's a spacial relationship and some guidance on how to identify and treat those.

CHAIRMAN BONACA: Just on a separate note which is just be aware at some point the near future we want to take a break. So you choose the right

time.

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

CHAIRMAN BONACA: Yes.

MR. BURTON: Oh, man. Okay. You know me. I'll keep going. I'll tell you what. I'll do one more slide and then we'll take a break. That will be good.

CHAIRMAN BONACA: That's the second part of the scoping. Good. Before we do mechanical, we'll take a break.

MR. BURTON: All right. Fair enough. This was not an issue but I thought you all may have run across this and may have noticed this. Maybe not but some of the reviewers did. It had to do with the blowpipe system. What we found was there seemed to discrepancy between what we were seeing the description of this and in Section 3. In fact, what we found was we didn't see it in Section 3 but we did see it referenced as being in scope in Section 2. We identified an open item to resolve this discrepancy.

First of all, the purpose of the blowpipe system is it provides compressed air into the containment during integrated leak rate tests other than when they are doing that test. It's just a

section of penetration pipe. Other than that, it's just blanked off on both ends normally.

In Section 2, it was identified as being in scope and all that. But when you went to Section 3, you saw nothing about it. So we found this discrepancy. We identified that as an open item. As you can see, the open item is currently closed. Why? Because they came back and clarified for us that the components in the blowpipe are actually identified in Table 2.3.2.2-1 which is the table for the containment penetration and system interface system. Those components are actually part of that system. They are identified under bolting and primary containment penetrations. But there was nothing that said "These together make up the blowpipe." So we had that question and they resolved it.

MR. LEITCH: So the blowpipe system, when I first read that, I actually thought it was a typo because I never heard of a blowpipe system.

MR. BURTON: Yes.

MR. LEITCH: I thought it meant blowdown or something. But really it's just a blank spool piece in the containment which they can hook a compressor up to to pressurize a containment.

MR. BURTON: That's basically what it is.

What you said is exactly right. We had the same confusion about blowpipe versus blowdown because we had some other issues with the blowdown system which I'll talk about after the break. There was a little bit of confusion there which we had to try and sort that out.

CHAIRMAN BONACA: Let's take a break and let resume the meeting at 10:35 a.m. Off the record.

(Whereupon, the foregoing matter went off the record at 10:18 a.m. and went back on the record at 10:37 a.m.)

CHAIRMAN BONACA: On the record. You can proceed.

MR. BURTON: Okay. Thanks. Now we'll go into Section 2.3 which contained the results of the scoping and screening of mechanical systems. First of all, we're talking about mechanical systems including reactor systems. Reactor systems is a broad system group that actually contains three separate reactor systems that I'll talk about a little bit later.

There are two Engineered Safety Features ("ESF") systems. There are 20 auxiliary systems and four steam and power conversion systems. The reason why I said four instead of three is because of the next thing I'm going to talk about which is the steam

generator blowdown system. There is blowpipe and there's steam generator blowdown which people are more familiar with.

We found that when we looked at the description of the system in Section 2 there was a discrepancy between what we were seeing in Section 2 and Section 3. So we did ask an RAI requesting them to clarify the discrepancy. In fact what they came back with was "Yes, there is a blowdown system. Yes, it is in scope" but the components that make up the blowdown system are actually an assemblage of a components from other systems.

That wasn't clearly described in Section 2 so in their response they actually gave us the breakdown of the components that make up the blowdown system and where you can find them. The blowdown nozzles are actually in the RCS table in Section 2. Containment isolation valves are in the containment penetration and system interface system. The piping and valves did serve a pressure boundary function. This is actually one of the functional realignments. Those are actually in the sampling system 2.3.3.19.

Other pipes and valves are identified in the feedwater system. So in response to our RAI to clarify that discrepancy, they clarified and gave us

a breakdown of what the components are and where you can find them.

I mentioned that during the scoping inspection we had identified four inspection open items. This was one of them and we've talked about it a little bit already. The circ water discharge tunnel during our review and inspection we asked the question that because the raw water system actually discharges through that tunnel basically of a different system if that tunnel failed, could that block discharge flow. Obviously that would have an impact on the raw water system.

Again we had some discussions about that. They actually made an argument as to why flow would not be blocked. But as with many of our questions and open items, they made plausible arguments. However to be conservative, they said "Okay, you know what? That may be true but let's just bring it in scope and make sure we have it covered."

So this was one of those examples. Ultimately they brought it in scope. They actually made the tunnel which is going to be identified with the intake structure. So they brought the aging management information as part of the intake structure. Staff reviewed that information and found

it acceptable. Right now the status is that the open item is resolved.

MR. SIEBER: Was the grouping of including the discharge tunnel with the intake structure just a matter of convenience?

MR. BURTON: Yes.

MR. SIEBER: Or was there some other reason?

MR. BURTON: No, strictly a matter of convenience. I'm sorry. While I'm here, this is where I wanted to address your question about how the staff had a number of RAIs when they were looking at the drawing and questioning things that were initially identified as being omitted and brought into scope.

I do want to say that the RAIs that were generated that's actually a good thing because the staff was looking at the drawing, looking at the verbiage in the application, going through all the drawings. Again the emphasis is not so much what has already been identified as being in scope but looking at things that are out of scope and seeing whether that is justified. We did that with all of the mechanical systems. We went through all the drawings and we did identify instances of things that were questioned.

Now in response in some cases the applicant had an argument to say why they didn't have it in scope but again they would do a cost benefit - I don't know what you want to call it - but they said "Let's be conservative." That is one thing that we found which is when we raised these questions very often they took the conservative approach and said "Let's just bring it in scope and evaluate it as an AMR." So a number of those things fell into that category. I will say that the scoping and screening reviewers for the water systems, the ventilation systems, they all went through that process.

CHAIRMAN BONACA: In some cases, however, it seems more that in the implementation, they missed something and you guys had to find it and they agreed that it should have been in and they missed it. That was why I raised the question.

MR. BURTON: Right.

CHAIRMAN BONACA: I'm not worrying about where you have discrepancies, disagreements. Both of you understand the logic and did debate that. That's a good process.

MR. BURTON: Yes.

CHAIRMAN BONACA: I was more questioning whether or not you felt that while it is a good

methodology who had implementation problems. That was my question.

MR. BURTON: Okay. I can talk about it in general terms but what I wanted to do because a number of the RAIs that you saw were covered by actually one reviewer. We had several but one of our reviewers generated a number of those and I wanted him to come up and walk you through his process and what he looked at and how he got to the conclusions that he did. I'm going to ask Steve Jones to come up and speak to you.

MR. JONES: I'm Steve Jones, Senior Reactor System Engineering, Plant Systems Branch. I was the reviewer in the scoping and screening area for raw water, component cooling water, circulating water and spent fuel cooling at Fort Calhoun. I guess just for a perspective, I can go through one of the systems component.

CHAIRMAN BONACA: Spent fuel component.

MR. JONES: Okay.

CHAIRMAN BONACA: That was the first one that triggered my interest.

MR. JONES: That was a little simpler than some of the other systems in reviewing. I guess from experience I'm looking to see certain things are captured in scope as far as makeup water systems, the

integrity of the fuel pool and maintaining water inventory. Depending on the licensing basis, there may be additional systems brought in such as forced cooling or additional makeup lines.

In this case, there were some drawing discrepancies tracing back particularly with regard to the makeup system that related to the refueling water storage tank and embedded pipe that connected to the waste system because there's a strong interface there with refueling water and purification in addition to spent fuel for makeup.

With those drawing discrepancies, it was a matter of looking at for Fort Calhoun multiple versions of the same piping instrumentation drawing, one for the waste disposal system, one for the safety injection system and one for the spent fuel for cooling system for example. In ensuring that the drawings adequately encompassed pressure boundaries necessary to provide that spent fuel for makeup function, it involved making sure that those drawings were consistent between one another. I think that's pretty much the extent of the spent fuel for cooling.

CHAIRMAN BONACA: But you found that some components or some portions were not included.

MR. JONES: They were not identified on

the drawing or at least they were inconsistently identified between drawings. One drawing would indicate in scope and one would be out of scope. Systems where portions were out of scope included CCW and raw water.

CHAIRMAN BONACA: That's right.

MR. JONES: That was a more detailed evaluation because those systems go through the plant.

CHAIRMAN BONACA: So you concluded for yourself that the methodology had been properly implemented.

MR. JONES: Right, all the reviewers have some basic understanding of what to look for with each system. Then the more discrepancies you come up with the deeper you're looking especially with CCW that interfaced with the chemistry and volume control system, RHR, all these other systems. You take it to following all the flow paths to those extreme systems and then going a little bit over to verify that interface captures all the functions that are at the pressure boundaries that need to be maintained are identified.

CHAIRMAN BONACA: You found that in general this was thoroughly done and the component were in scope. There were exceptions here but you

feel --

MR. JONES: There were some exceptions, right but I believe we captured them between the scoping and screening review and the inspection.

CHAIRMAN BONACA: So there is reasonable assurance that the components have been captured.

MR. JONES: Definitely, yes.

CHAIRMAN BONACA: Thank you.

MR. ROSEN: But I think the meaty part of your question, Mario, was given that this was found in these cases, what was the extent of condition review. How much more broadly was the question asked and are we about to approve a recommended approval of an application where there was some sort of systemic inaccuracy in the database?

CHAIRMAN BONACA: I thought I had asked that question and you are giving me the answer but you may want to expand on that fact. You felt that at the end of the process.

MR. JONES: Well certainly as one discrepancy comes up, you look deeper for the second discrepancy. It ended up being at Fort Calhoun a full scope review tracing each and every flow path and identifying what functions they perform and should that be in scope or not with CCW in particular because

there's an inventory control issue with that system. If you lose too much water, the system function would fail. That extends that boundary out to essentially all piping.

MR. ROSEN: So you're saying that given that you found these discrepancies and resolved them in a few systems you then felt that necessary and you did expand that process to all the systems. Basically what we're being told and what I'm understanding is it was 100 percent de novo review of all of the P&I drawings to identify those components that needed to be in scope.

MR. JONES: I can speak for myself at least. On CCW, I looked at the CCW license renewal drawing. Then if there was an overlaying for instances in chemistry and volume control system drawing, there would be a parallel drawing for CCW. I would get that drawing and evaluate the interface with CCW there also.

MR. ROSEN: Well, that's a good answer but just from this one reviewer. How do we get the confidence that all the reviewers did the similar robust processing?

MR. BURTON: Yes, I guess I have to speak to that. I have two ways to do that. I could either

have each reviewer who would basically say the same thing that Steve did or I can say that as a matter of process, this is nothing that is unique to Fort Calhoun in the scoping and screening area. It's pretty much the way it has always been done. The GALL stuff is really more the aging management portion of the review that is new.

But Steve described to you in terms of his approach to the review, that is typically what we do for scoping and screening. I could get another reviewer who did the ventilation systems and he could come but he would describe to you the same thing. In this particular case, there were multiple drawings that had some overlap between the systems.

One of the things that came up over and over again is that when you saw portions of a system marked in red on one drawing and then you went to another drawing and saw the same system but it was not in red, it was actually more problematic if you didn't see it in red the first time. You know that it's a system that's in scope and it should be in red and it's not, then come back and say "Why is this not in scope?" Usually the response was "Okay, well you're looking at the wrong drawing. If you go to this drawing, this is the one that is really addressing the

intention functions for that system." It's shown on a different drawing but it's highlighted in red on the drawing where the intended function is being addressed. That's what came up a lot during the staff's review.

To really get everything captured, you had to look at multiple drawings all of which may have the same system on it, always marked in red on every drawing only on the drawing where the intended function of the system was.

CHAIRMAN BONACA: But when you find however a natural discrepancy, you are telling me that the process is such that it should request of your inspector to expand the review to assure in fact that components are attached the way we heard from this gentleman here.

MR. BURTON: Yes, absolutely. Does that answer your question?

CHAIRMAN BONACA: Yes.

MR. BURTON: Okay so for this particular item about the discharge tunnel was resolved. That's all I had for the mechanical systems for scoping and screening. There were no other issues or open items or interesting issues to be raised that I had identified to share with you.

The next one was structures and structural components. This is a list of the structures and structural components in Section 2.4. I think most of these are fairly self explanatory. Building piles are driven into the bedrock and the structure is on top of them. It included heavy loads here and component supports. Duct banks are the below ground vaults that are at the junctures carrying conduits and cables and stuff like that.

We didn't have any outstanding issues with structures other than to note that as I said before with bringing that circ water discharge tunnel into scope. It was brought in as part of the intake structure so I just made that note again there. But other than that, there were really no outstanding issues for structures.

Then we move on to electrical and I&C. There were actually 20 systems and commodity groups that were in scope. But because the vast majority of the components were active, they all screened out. So ultimately what was subject to AMR were only three commodity groups in electrical: cables and connectors, electrical penetration and bus bars. So out of the 20, that's really what came through as being subject to an AMR.

Then we come to the issue of station blackout ("SBO"). We've dealt with that ever since Turkey Point and so it came up again for us. In particular it came up about whether components are included in scope that are needed by the Station Blackout Rule to ensure a recovery path after following station blackout. In fact initially, those components were not in scope and we had some discussion.

MR. ROSEN: Which components? The recovery path components or all of them?

MR. BURTON: Yes. Components needed to ensure a recovery path following station blackout. I'm going to give you a before and after. This is not in your packet. This is a backup slide.

In black is what was initially in scope. As a result of our RAI to bring in additional components for station blackout, that's what you see in red. Basically it's the 161, 345 backfeeding through -- There's a disconnect here that's now shown on this one. You disconnect that and then you can backfeed through these transformers from 345 and then from the 161 through these two to step down to the 4160. So that's the additional scope of --

MR. ROSEN: When you say "relay housing in

the switchhouse" do you mean the structure of the relay house or the components in the relay house or what is that?

MR. BURTON: Go ahead. I don't think it's the structure but go ahead.

MR. DiBENEDETTO: Phil DiBenedetto with Omaha Public Power. What we indicated for this drawing's purposes the relay house, we're talking about your DC control power for breakers. It's the components and the cabling to go with it that were now included in the scope of license renewal.

MR. ROSEN: Is there more detail in the application about the switchyard relay house components?

MR. DiBENEDETTO: Yes. We identified those as part of our cabling and connector program as well as our breaker program. Breakers as you know are active components which screen out. All our cable is in our cable and connector program. We've identified those as the DC control power as part of the SBO recovery.

MR. ROSEN: All the way out into the switchyard relay.

MR. DiBENEDETTO: Yes.

MR. BURTON: Let me again show you a

backup slide. This isn't in your package. I have a little more detail about the exact components that were brought in as part of the recovery path, some cables, substation, some of the towers associated with the 161, 345. Those are some of the components. That stuff in red is this stuff.

DR. SHACK: Now SBO has been one where you see that in almost all of the license renewals. There's always a discussion.

MR. BURTON: Right.

DR. SHACK: Did they have the Interim Staff Guidance? Would that have solved the problem?

MR. BURTON: Yes. This is true with any interim staff guidance. When it's issued, there are always those applications that are in the queue that didn't have the chance to fully address it. This was one of those. As we get further along, you'll see these already addressed in the application but that's a problem with all the ISGs when they are issued. All right.

What I'm going to do now is that's it in terms of the headquarters staff's review of Section 2, Scoping and Screening stuff. The next thing is now to follow on confirmatory Scoping and Screening Inspection. I'm going to have Wayne Walker who was

our lead inspector to discuss the Scoping Inspection. He's going to talk to you about scoping and screening and also AMR.

MR. WALKER: Good morning. My name is Wayne Walker. I was the team leader for the Scoping and Screening Inspection. Our purpose for this inspection, we conducted it as you've heard earlier on November 4th through the 8th. It was a one week inspection. We examined the applicant's activities that supported the license renewal application. We were there to determine whether the scoping and screening process was successful in identifying those SSCs required to be considered for aging management.

On my team, we had a large team. I know you're familiar with the teams in the past which have been approximately five people. One of the reasons we had a larger team was because of this being the first plant to go through the GALL. We just determined early that we wanted some additional resources.

The unique part about this team was that Butch Burton was on the team being the project manager for NRR. Also we had the project manager for licensing from NRR who was on this team. We just felt like that was a good addition in view of the fact that this is the first GALL plant.

Also we had a very experienced team as far as knowing the Fort Calhoun Station plant. We had three former resident inspectors, two of them being seniors and also we had the current resident inspector assist us.

We examined procedures and representative records. We interviewed personnel regarding the scoping and screening process. We sampled 22 of the mechanical systems, 13 of the electrical systems and nine structures including two that were not identified as being within scope. I just would like to follow on with what Steve talked about earlier. Anytime we ran into some questions about the scoping or the screening, then we would go back to NRR for additional assistance in our review.

Much of our time which you would expect being an onsite inspection was spent looking at the boundary drawings, the piping and instrumentation diagram ("P&IDs") and actually going out into the plant and verifying those break points in the areas that were included within the scope and how the applicant screened those areas.

MR. LEITCH: Those two that were not in scope, did you confirm that it was appropriate that they not be in scope?

MR. WALKER: One of those was the switch yard and they brought that back into scope.

MR. LEITCH: What was the other one?

MR. WALKER: The other one was the condensate storage tank and we determined that it was not in scope.

MR. ROSEN: As long as you raised my favorite subject again, the switch yard, drawings in the switch yard and particularly drawings like ones that describe things in that switch yard house really has been typically not done by station staff. They are typically done by distribution or transmission division. Those drawings are not done in accordance with the provisions of Appendix B.

So I'm a little concerned. I'm not sure I can exactly verbalize it. I'm a little concerned that using them as part of this process doesn't have the same robustness that using a safety related drawing done under Appendix B might have. In fact, it can have components that could be components out in the relay house that are not shown on the drawing or components that are in the relay house that are showing or not connected just the way you think they are. What can you say about that?

MR. WALKER: I probably have to let NRR

speak to that because the extent of our inspection in the switch yard really went to the duct banks and how those were being controlled and how they were being drained. Other than that, we didn't do a lot actual onsite inspection in the switch yards.

MR. BURTON: When we did the scoping inspection, we were still in the process of all of this SBO stuff. But one of the things that we did was OPPD's representative, Phil DiBenedetto, who may want to speak to some of this, did take a small number of us out into the switch yard, showed us where they were in the process of identifying those switch yard components that were ultimately going to be coming into scope and how they were considering it. I'm sure he'll say "It wasn't just a paper review of these non-Appendix B drawings." There was a lot of actual go out and let's look. Let's look at records. I think Phil can probably speak to that a little bit more.

MR. DiBENEDETTO: Thanks, Butch. Let me address that. Including the SBO in the scope of review, the switch yard portion was a very extensive process for us. It was a very extensive review. You are absolutely right. A lot of the apparatus, the materials, the components are controlled by the P&ID

people.

But Omaha Public Power District has a T&D Engineering. They are still one company. They are very cooperative. We spent three weeks with the T&D people going through hundreds of drawings to ascertain which ones applies to the recovery path here and which equipment. Predominantly what we were looking for is not so much the breakers and the switches and things like that or the batteries, the active components because we knew they were screening out.

But we were looking more in fact for the cabling. We have a very extensive table database. We were able to trace back and we have the documentation contained in 47 three inch binders every purchase audit, every piece of cable used at that plant, switch yard in plant, out plant. It was all brought to the same quality standards.

Regardless of whether they in the switch yard call it a QA Level 1 Safety System or not, we have the pedigree of that cabling. That's what mostly we were interesting in because that's where you get into areas of aging management concerns. Does that address your concerns?

MR. ROSEN: Yes, part of it. In terms of the pedigree of the equipment but how can you validate

the configuration for those for us that it is as was scoped and screened in the application in that the components needed for the recovery path that need an aging management program?

MR. DiBENEDETTO: We physically did walkdowns of exactly what needed to be contained or included in our SBO switch yard engineering assessment. Originally when we had done our screening and scoping on electrical systems, we cut on the secondary side of the 161, 41.60. When the ISG in the staff's position in RAI came out to us and said "We have to go into recovery" and everything else, that's where we brought in the towers, the bolting associated with the towers, the concrete pallets and structural supports as well as the high voltage conductors, the isophase buses, the non- segregated buses, the bolting apparatus to go with that. We've identified all of those and put them into the appropriate commodity groups for aging management.

MR. ROSEN: And you have confidence that the drawings that you're working off in fact have walked down and proven to be accurate.

MR. DiBENEDETTO: Yes, sir, I was agreeing with him, Butch.

MR. GAMBHIR: Butch, if I could add to

that. Maybe this is something unique with us just because we are a vertical integrated company on this case. The switch yard at Fort Calhoun Station is actually controlled by Fort Calhoun staff. To get into that, you need access and not everybody can get in there.

MR. ROSEN: Well, the control is one thing. I think that's fairly difficult.

MR. GAMBHIR: Right.

MR. DiBENEDETTO: But actually design control.

MR. GAMBHIR: I'm going to get to that. We have a system that's assigned to that. We recently went through some upgrades and spent over $50 million upgrading the transmission system. We had two people assigned there because when we're doing the work when the plant was still online, we need to make sure that the drawings that we're using were accurate. They will go in there and all of the testing that was to be done was done by our own people.

We had two guys that worked in there full time, working with the switch yard people. The bottomline is I think there's real high degree of confidence that the drawings we have for our station are pretty accurate because we had people involved.

We learned out lessons in the past because people can come in there and do things and then the plant will have the consequences. I think Wayne is aware of the fact that we did have an event back in 1993/1994 timeframe.

MR. WALKER: I'm not going to spend much time on these. Butch has already discussed the open items. These were the four open items we identified from the inspection. The component cooling water, components used to cool the safety injection and leakage coolers. This was brought into scope by the applicant. The safety injection tank level, pressure indicators should have been within scope and they were brought within scope.

The discrepancy in the license renewal regarding the function of realignment, Butch talked a lot of that with blowdown system and how that was clarified. Then the warm water recirc path was another item that we identified and was brought within scope. All the inspections items are closed. We concluded that the scoping and screening was conducted as described in the license renewal application. The documents were auditable and retrievable as required by the Rule. That's all I had on scoping and screening.

CHAIRMAN BONACA: And there was no disagreement with the licensee on these issues. It was more simply just finding some discrepancies and correct it.

MR. WALKER: The one item that we had a lot of discussion about was the warm water recirc. It actually was discussed in their USARs. Anyway there was some disagreement on whether it was needed for preventing phrasolyse (PH) formation. We came on that issue as per what's been done in the past in license renewal, we threw into Part 50 space and the resident inspectors were following up on that.

The applicant or licensee has now taken some compensatory measures in regard to that. They also have several consultants who looked at this and they are in the process of making a decision on whether they need to do some additional things. That will be factored into the license renewal process when that determination is made.

CHAIRMAN BONACA: Should there be a guidance developed for something of this nature? It seems to me that wherever we have discrepancies that are occurring and they are resolved within the process, then there isn't any concern. Where you do have disagreements, often times it is a

misunderstanding or disagreements or philosophy behind the scoping. So you feel that you need to develop guidance for future applicants.

MR. BURTON: Let me speak to that in general first of all and then some particulars. The answer is yes and for any review not just for Calhoun, when we come up with issues that are generic in nature in terms of whatever the technical issue, we do work to develop the interim staff guidance and put those out. When we get to a technical issue and both sides just disagree, we have our appeals process.

As you recall, we have actually used that with Hatch. I don't think we've had to use that since then. That is still a vehicle to try in an orderly public way try to resolve some of those technical issues. So I'll say we do have the processes in place if we need to use them.

With regard to the warm water recirc, again this is not the first time where staff has raised issues and after discussion with the applicant, we said "This really has not been resolved in Part 50 space yet." It needs to be resolved there first. Once that resolution is in place, then they can bring it in scope if it is appropriate to do so if it involves an intended function that meets our scoping

criteria and so on.

That is our approach and warm water recirc is just that. In fact, we just got the latest status on this from the OPPD folks and I'm told that the license renewal folks are going to be getting together with the licensing people this week and discuss it. If it turns out that there are portions of this warm water recirculation path that need to be brought into scope, they're going to go on and follow that up and ultimately bring it in.

MR. KUO: Butch, if I can add to that. As a general matter, whenever we have a lesson learned, we will consider whether we should issue an ISG or not but the staff has to determine that this issue is of generic nature, not plant-specific. We don't want to issue and ISG for very plant-specific nature issues. If this is of a generic concern, yes, we will consider issuing an ISG.

CHAIRMAN BONACA: All right. Thank you.

MR. WALKER: The second region based inspections formed at the site had to do with the aging management review inspection and audit.

MR. BURTON: I'm sorry. Wayne has skipped ahead a number of slides so if you go to slide 41.

MR. WALKER: I just thought I'd combine

both of ours at once. This inspection required two weeks. We went in the week of January 6th and also the week of January 20th. We looked at the aging effects that were identified and we were there to verify that appropriate measures were taken to manage those aging effects. I think that was an earlier question.

We spent our time really focusing our time on the aging management programs for the inspection. The inspection team consisted of the same inspectors except we had one additional nuclear reactor interim and also one of the individuals was not able to come back. He was on an EDO rotation so we brought in another ex-senior resident for that position.

Again we looked at procedures and records and we interviewed many of the engineers at the site to discuss their aging management programs to get a feel for just their knowledge and their understanding of the program and what was going on. We also reviewed components in mechanical and electric systems and structures and fire protection.

Our conclusion was that the existing aging management activities are being conducted as described in the license renewal application. Plans for new aging management activities appear acceptable to

manage plant aging. Obviously I know you're aware from past briefing, there are programs that they have not developed yet.

I think that gets to Dr. Rosen's earlier question to maybe just talk about resources a little bit. That's an outstanding idea that we need to look at that resource question early on before we get to a point where many of the applicants are going to come in with these programs potentially all at once and the regions are going to be asked to do the review on those. That's going to need a huge resource to do that.

The other point just to give you a little insight into is we've had one plant previous to Fort Calhoun which was ANO and then we expect ANO II to come in probably in September 2004 when the actual regional inspection time will be done. Unlike Region 2, it's been more difficult in Region 4 because of a bigger training curve to do the license renewal inspections. You have to bring the group up to speed and with the distance between inspections, there is some difficulty in maintaining a group that are familiar with the license renewal process.

I was able to get one inspector who had done the ANO inspection from Region 4 but it's also

difficult to share resources across regions because Caudel is so busy in Region 2 with reviewing plants. Now it looks like Region 3 is going to become quite busy too. Maybe you already knew that but this is to give you some insight into as we try and staff these teams not that we don't have experienced inspectors but there is somewhat of a learning curve to get up to speed for the license renewal. That concludes my remarks.

CHAIRMAN BONACA: Thank you. Any questions?

MR. BURTON: Thanks, Wayne. That pretty much concludes Section 2. So just as a summary --

MR. LEITCH: I did have just one question before we move on. Was a significant portion of your activities at the site or was it largely a paper review? In other words, did you get out in the plant?

MR. WALKER: We did get out in the plant. In fact, the resident inspector I made a point of having him go out during an outage in the spring and had him go out and look at various systems because that was the only opportunity we would have had to do that. In addition, I would say my structural inspector spent 90 percent of his time out in the plant looking at the structures. I think we did a

good job in that respect. Obviously the prep time helps because otherwise if we hadn't had the prep time, you just get inundated with information while you are there and that hampers you from getting out in the plant. I think we did a good job.

MR. LEITCH: Can you give us any sense as to the material condition of the plant?

MR. WALKER: I think Sudesh made a good assessment. Fort Calhoun is in very good shape for a plant that has been operating almost 30 years now. When you go inside containment, you're not going to see a lot of corrosion problems like that. They have had some problems with CCW corrosion inside their steam generator areas inside the bioshield but that's something they are addressing. It's a program that they have on-going. This is on small bore piping.

They have an active painting program inside containment where they are refurbishing structures and equipment. Their liner they continue to take care of that.

MR. ROSEN: Is there a screen house at the river intake structure?

MR. WALKER: Yes.

MR. ROSEN: Did you go in that for the safety related portion of that?

MR. WALKER: Yes.

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

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

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

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

MR. BURTON: Yes, audits and inspections.

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

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

CHAIRMAN BONACA: I thought it was more because you had more people.

MR. BURTON: We had more people but what is also true is that in particular the AMR inspection the scope of the inspection was greater than what had been previously done. I'm actually going to talk about that when we start into Section 3 and talk a little bit about exactly what was done during the AMR inspection that was different from previous inspections. We needed more people because we did a lot more than we normally do.

CHAIRMAN BONACA: Good.

MR. BURTON: I'm ready to go into Section 3. I don't know if you wanted to break.

CHAIRMAN BONACA: Well this was the break but I think it's going to be early for lunch. So I would prefer that we just go ahead for a few minutes.

MR. SIEBER: The cafeteria closes at 1:00 p.m. today for the awards ceremony.

CHAIRMAN BONACA: That's tomorrow.

MR. BURTON: But there's a Commission all-hands meeting today.

CHAIRMAN BONACA: Why don't we just proceed for about 10 minutes. Then we'll take a break when we're scheduled at 11:30 a.m.

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

MR. ROSEN: There are some things you don't have to decide.

CHAIRMAN BONACA: You are the presenter. Before and after anyway, so we're not interrupting the flow.

MR. BURTON: That's true. Let me at least get started on Section 3. Section 3 is really where we start to see the impact of GALL on how we do business. GALL divides what I call six broad system or structural groups. These numbers in parentheses are important because those identify when you get into the Section 3 tables which systems group you're in. So you have reactor systems group, ESF, Aux systems, steam and power conversion, structures and structural components and electrical.

I'll talk in general about our review process and then we can probably break out after that. That would be a good point. First of all, what I tried to put in the SER was to actually give the reader an overview of how we review the stuff in this new GALL regime. That's actually in Section 3.0.2.

In general, the staff's review of Section 3 was in three phases. Phase 1 was a review of the aging management programs. When you look at the aging

management programs, they fall into three types. There are AMPs that the applicant claims to be consistent with the AMPs in GALL. There are AMPs that the applicant claims to be consistent with GALL but they have made some deviations from GALL. Then on the next slide, there are actually AMPs that were not addressed in GALL.

How did the staff perform its review given each one of these types of AMPs. For the AMPs where they claim to be consistent with GALL, we confirmed that consistency during the AMR inspection. When I told you that the scope of the inspection was expanded beyond what was done before, this is one of them. Because we didn't have GALL before, the inspectors didn't have to confirm any consistency with aging management programs.

CHAIRMAN BONACA: But that was done on an audit basis.

MR. BURTON: Yes, we did 19 out of 24 aging management programs.

CHAIRMAN BONACA: Okay, that's a significant audit.

MR. BURTON: I'm not sure of those five that we didn't do if any of them fell into this category. I can't remember but we did the vast

majority of them. I can definitely tell you that.

CHAIRMAN BONACA: Okay.

MR. BURTON: So that's what the inspectors did. Now back here in headquarters, the reviewers were still looking at Fort Calhoun. They don't call it a FSAR. They call it an USAR but there is still is a USAR supplement, a summary description of the program. So for the reviewers back here in headquarters, they had to review that summary description, the USAR supplement, and make sure that it was an adequate description of the program. That's what we did with this class of AMPs.

For this class of AMPs, the ones that are consistent --

MR. LEITCH: It sounds like you are saying that GALL may have actually increased your workload or perhaps shifted it from headquarters to the site.

MR. BURTON: Yes, and actually that was the -- I'm sorry. Did you want to speak to that?

MR. KUO: Yes, I heard Mr. Leitch. You said that GALL actually increased the workload. In a sense, I think the applicant will have to prepare their format according to GALL and make it easier for the inspectors to read. That's the additional workload that the applicant will have to assume.

However from the staff point of view, if their plant programs aren't consistent with GALL, then all we have to do is to really verify that it is indeed consistent with GALL. So there is not much amount of review by the headquarter staff doing the technical reviewing except verifying the boundary conditions that are there, the components in GALL, the involvement with the SER of systems with GALL. That's it.

Therefore what's left is only the verification part. That is what I said earlier this morning that we are thinking about a new process so that the headquarter staff would actually go to the site and do all this and verify the program there. That's what we are thinking of doing so that we can increase the efficiency.

It's just like Sam said earlier we are seeing the same thing. I'm a little hesitant to say that we are going to do it right away because this is evolving and we haven't informed our management yet. So when the timing is right, we will come to the Committee and give you a full review of the whole process.

MR. SIEBER: It seems to me that by using GALL, you're predeciding what is good enough to meet

the minimum requirement for an aging management program. So all this checking that goes on is more like a clerical function until you run into the exceptions.

MR. KUO: That is correct.

MR. SIEBER: And I would think a reviewer would have somewhat of a reduced workload because the decision-making has been made in advance.

MR. KUO: Exactly.

MR. BURTON: You bring up a very good point, Mr. Sieber. One of the lessons learned that we had was and some of the feedback we got from the reviewers is that when you take credit for GALL and everything is in accordance with GALL, perhaps the SER should not dwell so much on the stuff that we know is consistent but to put more of the focus on the exceptions and say here's where we deviate so the SER would focus more on that.

CHAIRMAN BONACA: I think that's what you did really also in this SER.

MR. BURTON: Yes. And there was probably a little more verbiage in this one because it was the first and because again like I told you before, some of the reviewers were still probing the process to see if it really works. So we had some questions and some

review that probably won't need to be done in the future. As the staff gets even more comfortable with this, you'll see some of those efficiencies. That's how we dealt with this class of AMPs.

MR. SIEBER: I think the proof of the pudding will come when you do the inspection and determine if the aging management program details that they've established actually satisfy what was intended by GALL report. The way the GALL report is written is sort of a summary description of what the program should be and doesn't have all the elements that are necessary to have an adequate program.

So there's going to have to be a lot of work between now and the actual date that you go into the 41st year. I think that's going to be a fairly large workload which is what Mr. Rosen's concerns have been for the last few days and actually for the last few months. Because that workload is there, everybody says they can do it and we'll do it when we get to it but there's going to have to be a fair amount of prethinking put into that.

MR. KUO: Well, we do a little more than that right now. What we are doing here is that the headquarter staff reviews the boundary conditions of the plant system program versus the GALL program.

Then we are asking the applicants to maintain the auditable documentation on how they judge why their program is consistent with GALL. So these programs are onsite.

What we have to do really is to basically trust them and then verify. We go to the site and look at their program documentation to say "Ah, okay, this judgement is correct. We agree with their judgement." So the program is consistent with GALL. That way we save a lot of our review time in headquarter and also this paper passing, come and go, conference calls and all that. We save right there. That efficiency is achieved by doing that.

MR. SIEBER: Well, that has the advantage of providing an auditable basis document.

MR. KUO: Right.

MR. BURTON: And in fact, because I'm saying we confirm consistency. Let me give you a little bit more detail about how exactly we did that. What they have at Fort Calhoun onsite is a series of engineering analyses as they mentioned before. Those are all documented in a series of binders. They have one EA for each aging management program.

What we did during the AMR inspection is we actually took those binders. In one of the

chapters where they are confirming consistency with GALL, what they have is a table. On the left-hand side, they've broken down the ten GALL attributes line by line. In the right column where they say "Here's the GALL item. Here is how we are meeting it." So they will identify procedures, processes, whatever it is to say "Here is what we have to meet that element."

What we did during the inspection is we said "Okay, you've have walkdown procedure SO whatever. Let's go look at that." So we would go and look at that. What we expected to see was one of several things. Either the procedure itself already has the things that it needs to have to meet the element.

If it doesn't, we expect to see a draft revision of the procedure that's going to implement redline, strikeout to have the issues in there. Or if they haven't gotten that far, we go to their commitment tracking system because we expect to see an element in there that says "Go revise this procedure and make sure it has these elements in it." As inspectors, that's what we were going to look at to confirm consistency with each one of the GALL elements. We wanted to see it's already there, if there's a draft that it's going to be there or there's

a commitment to make the revision to make sure it's there. That's the kind of thing we were doing to confirm consistency.

CHAIRMAN BONACA: That's what will have to be done before going to license renewal. During those inspections, they will have to verify that all of them are in the first category which for each commitment there is a process.

MR. BURTON: Exactly. Second group say they're consistent but they made some deviations. At Fort Calhoun, the deviations fell into three categories: enhancements; clarifications; and exceptions. Enhancements is they basically took the scope of the thing but they may have included some additional components.

Clarification is where if there was some area in GALL that was maybe not as clear as it should be, they said "Look here's what we're going to do to satisfy that particular fuzzy element in GALL." Then there were some exceptions where they just said "Look GALL says you should do this. Well we're not going to do that. Instead we're going to do something else."

So how did the staff handle that situation? In that particular case what the staff did was each of the deviations were reviewed with the

intent to determine whether that AMP given that deviation is still adequate to manage the aging for which it's being credited. Obviously if there's no deviation from GALL, you can presume whatever the aging effect is that the AMP is created with managing in accordance with GALL, okay, it's going to be done. But as soon as you start to deviate, you need some proof that it's still going to be adequate. So that's what we ultimately tried to do.

The portions that they say are consistent we did confirm the consistency during the inspection just like we did before. Again headquarter staff looks at the summary description of the program to make sure that it's adequate.

The three category are plant-specific AMPs that were not addressed in GALL. For that population of AMPs, we went back to the old way of doing things. It's reviewed against the 10 program attributes as we've always done with previous applications. Also we reviewed the USAR supplement.

I don't know that it's worth to do this but because I came and briefed you guys a couple of months ago and I showed you examples of AMPs in each of these categories. I don't know that I need to do that again. Okay. So in general for each of those,

that is how the staff pursued its review.

MR. LEITCH: Particularly in Category 2, where there are deviations related to enhancements, clarifications and exceptions, might that indicate that there is some generic issues there that should be considered in future revisions to GALL? Are you considering those types of things?

MR. BURTON: Yes, let me give you a good example. There's a steam generator program, GALL AMP. The steam generator program is really there to manage aging of steam generators tubes. When you read the GALL, that's what it's for. One of the things that this applicant did was they credited that same program with managing other steam generator components. In fact, we had a lot of discussion back and forth about that.

When you read the GALL AMP, it refers to guidance in NEI 97-06 but it also says "The staff has not approved that yet." So the question is what does that mean. How much confidence can we have in something that we haven't approved yet? There's a certain assumption made of what guidance is in there. But if it hasn't been approved yet, it could change.

We got into a lot of discussion about that. One of the take- aways is when we go back and

we do an update of GALL we need to revisit that first of all make sure we understand what is the status of that NEI guidance. Have we approved it by the time we do the update? If we haven't, maybe we need to better characterize how this can or should be addressed by an applicant if in fact we haven't approved it. Do you know what I mean? Things like that. We can up with a number of those and we have a laundry list of things we have to revisit with GALL and the SRP but that was just one example. Does that answer your question?

MR. LEITCH: Yes.

MR. BURTON: That's all I have on that one. That was Phase 1. First Phase 1 was to look at the aging management programs.

CHAIRMAN BONACA: Now we need to break.

MR. BURTON: I'm going to get through Phase 2 and 3 real quick.

CHAIRMAN BONACA: Yes, and then we break.

MR. BURTON: All right. Phase 2 was to review aging management review results. This is some of the stuff in the table. Again it falls into three categories. There are AMRs where the applicant claims to be consistent with the GALL AMRs. Again if that's true, the consistency is confirmed during the ARM inspection, another thing that increased scope of what

the ARM inspectors were doing.

Applicants where they claim to be consistent with GALL but there are some things where GALL says "You need to do some further evaluation." In that case, the part that's consistent we confirmed during the inspection. Back here in headquarters, those things that require further evaluation the staff here does that. The guidance is in the SRP to do the further review as to what exactly are we supposed to do and to determine whether everything was adequate.

Finally there are some aging management reviews that are - I shouldn't say - not consistent with GALL but GALL did not address. It's something completely new. I don't want you to mischaracterize what that means. In that case, AMR is reviewed to make sure it provides adequate aging.

CHAIRMAN BONACA: Let me just ask a question. For Category 1 where there is consistency with GALL, so you went in and you checked that there was in fact a procedure somewhere already developed. You looked in the procedure to see that it met the requirements of GALL. So partly, it's already been done. For those not developed yet, it will have to be done.

MR. BURTON: Right. I understand exactly

what you are saying. I thought I had a slide. Let me give you an example. This is another backup slide. It's not in your package. I pulled this out of the application. This is Table 3.2-1. 3.2 meaning that these are components in EFS systems. 3.2 was engineered safety feature systems. Dash one means that we are looking at a table that reflects GALL.

When we talked about links before, this is what links you from Section 2 to Section 3. This is an example where this line item in GALL requires some further evaluation. We would go into the SRP to see exactly what that evaluation should entail as opposed to here where you can be consistent with GALL and there is no further evaluation required.

In each case, they are saying they're consistent with GALL whether there's further evaluation required or not. What the inspection team did was they went through and as you can see here this is the aging management program at their plant that they are crediting for meeting all this stuff. So again part of it is we go into those binders, those engineering analyses, make sure that under the scope of that program these components are included. Do you see what I'm saying? Does that answer your question?

CHAIRMAN BONACA: Yes.

MR. BURTON: That's what we were doing during the inspection. That's how we did Phase 2 looking at the ARM results. Finally Phase 3, initially I don't think people really recognized that we had to do this but some of the reviewers came to us after we got started and said "You know just looking at the aging management programs and the ARM results all you're doing is just doing a programmatic comparison but what the Rule requires is that the applicant demonstrates that their components will be adequately managed." It doesn't say that they have to be consistent with GALL or any of that stuff. The Rule says they have to demonstrate that they will be adequately managed.

So we realized not right from the beginning of the review that the review really involves several -- We'd advance and then we'd say "Oh, we really need to do this." So we would have to back up, train up all the reviewers and then move on. Then we would say "Oh, we missed that." We would have to back up, train up the reviewers and move on. So in the beginning in particular, there was a lot of stops and starts. This was the first one where we said that there's more to it than just doing a programmatic review.

Once we are satisfied that everything is consistent, we have to go back into those Section 2 tables that list the individual structures and components and track that through the linkage into Section 3 and make sure that this component is being managed correctly. I always give an example.

If you have a structural component that's made of concrete, when you look at the plant's aging management programs compared to GALL for concrete, everything looks great. But if you do this last step and you're looking at a specific concrete component, tracking it through a link into Section 3 and you find that the aging management program that being credited it something for carbon steel, something is wrong. And just doing a programmatic comparison, you would completely miss that. This is really what's needed to actually meet the Rule. That was Phase 3 and really the most important phase. It's the phase that actually is required to meet the Rule.

One last slide and then I'll let you go. In this new GALL regime with everybody new to it and trying to get on board, we felt that it was important that we train everybody in a systematic way. For the Fort Calhoun reviewers for Section 3, we didn't start off that way. It was like one of the reviewers would

come and say "All of really need to do this." I'd send an e-mail out and I'd set up a meeting and say "Okay, you guys, we have to do this." Then they would go off and do it until the next one came up.

Obviously that was not going to work real well for us and it was not going to work real well for all of the reviewers who were going to be doing Robinson and Ginna and Summer. So we decided that we needed to have both informal and formal training sessions. We had several, not only for the reviewers but for the contractors because a lot of the work is now being done by contractors, for the inspectors and even for you all.

Back in September, we had a half day training session for the headquarters, reviewers and contractors. We actually videotaped that training so anybody who comes in later can look at it. That was real good. In October we actually went out to Region 4 before the inspections and had a training session for the inspectors.

We had Caudle Julian come from Region 2. We also had Marty Farber from Region 3. We didn't have Region 1. One of the things that you were mentioning before in the first session about your discussion with Region 1 and they seemed to have a

misunderstanding of some things. That may be part of it. I don't know. Certainly Regions 2, 3 and 4 were all involved in this training session. In fact, the Region 3 inspectors who are going to be doing Drisden Quad Cities, they are setting up a separate training session for their inspection team early July.

CHAIRMAN BONACA: July 1st and 2nd.

MR. ROSEN: Since this is transcribed, let's get it right. What our concern in Region 1 was that Region 1 didn't have a view as to the steepness and extent of the inspection requirements that would fall to them when the licensees in their regions who had renewal approved began implementing the commitments.

MR. BURTON: Oh, further down the road. I'm sorry. My apologies to Region 1.

CHAIRMAN BONACA: One more question I have is for any of the license renewal we already had in Region 1, were Region 1 inspectors used or only from headquarters.

MR. BURTON: For Region 1 inspection?

CHAIRMAN BONACA: Yes.

MR. BURTON: I'm not sure.

CHAIRMAN BONACA: For Region 1 inspection.

MR. KUO: For Calvert Cliffs actually,

Region 1 inspectors went there to do the inspection.

CHAIRMAN BONACA: So they already had some people assigned to it.

DR. LEE: They did Calvert Cliff and Peach Bottom.

MR. BURTON: They have not gotten their first GALL plant yet but when the time comes, we'll set up training sessions for them to make sure they're okay.

CHAIRMAN BONACA: Okay. Great.

MR. BURTON: Of course as you all know, I had a briefing of the full Committee back in March to try and get you all familiar with it.

CHAIRMAN BONACA: That was very helpful in fact.

MR. BURTON: Good, I'm glad to hear that. It's nice when something works. This is probably a good point to stop.

CHAIRMAN BONACA: To take a break. So we will reconvene at --

MR. KUO: Dr. Bonaca, before you break, can I just say one thing? Early on, you asked a question about spray head and we said we are going to have a staff reviewer to answer that question. I have the staff reviewer here. If you could give him a few

minutes, he probably can answer that question.

MR. RAZZAQUE: This is Muhammad Razzaque, Reactor Systems Branch. Basically the fire event requires 72 hours to get to cold shutdown condition. They indicated that they have three mains to get to there. One of course is the pressurizer itself, injecting water to the pressurizer and relying on the spray function. Another is the PORV and finally they always have the charging system, charging water and using steam generator rejecting heat by units of Ox feed water they get to the cold shutdown in 72 hours. The passive and long lived components, those systems are in scope.

CHAIRMAN BONACA: I understand that. I was asking about not all systems to get somewhere are created equal. Some of them are more relied on. I think actually during the previous break, one of the applicant's engineers here told me that they also demonstrated that in case the spray head is not functioning the efficiency of the spraying is reduced but it's still sufficient to come to a cooldown. Even without reliance of the systems, the approach of using the pressurized spray is adequate. To me that's more convincing.

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

add --

CHAIRMAN BONACA: Because I remember that's the way that we accepted it for the previous application when things were discussed.

MR. RAZZAQUE: Right. I was going to mention that because one of the previous applicants - I recall it was St. Lucie - we asked them to show that and they did some calculations and showed that it is possible. They lose efficiency but still the 72 hours is long enough time to get to full shutdown.

CHAIRMAN BONACA: The issue remains of a generic basis however. In other cases for example, with a reduce of efficiency which the spray head is gone and just injecting there from the top of the pressurizer, if you could not demonstrate that you can bring to cold shutdown in 72 hours, the question remains. Why is any other backup approach adequate?

Particularly I have to understand that it is generalized that is in fact as deemed as the most effective. These are additional demonstration points that need to be made. Again it does not apply now to pressurizer head spray because I remember now that that demonstration was made. If you are demonstrating for example, do you go back and check to see that in case you used the PORV or simply charging and

relieving on the second side that approach would be adequate?

MR. RAZZAQUE: Usually with those, we say that the pressurizer still can be used to get to cold shutdown.

CHAIRMAN BONACA: As I'm saying in this particular case, the backup were not used. We just used them it to the spray. We demonstrated that the spray head is not needed. The efficiency will be reduced but still you would be able to bring to cold shutdown in less than 72 hours. If that demonstration could not be supported, would you rely on these backup systems as being as good as the primary system? When would you require them to have the spray head in scope? I don't know.

MR. RAZZAQUE: We required one applicant to show some calculations and they did. I don't know whether we can use that as a generic or require every applicant to show that. Basically I used my previous experience to assume that this requirement would be applicable in this case too.

CHAIRMAN BONACA: Well SER speaks of the backup and the other ways of cooling and says you cannot do it with the pressurizer spray. Therefore you can do with simply charging it or leaving it on

the secondary side. That doesn't seem to me a very orthodox way of the pressurizing and cooling.

MR. RAZZAQUE: In the FSAR, there is a procedure laid out how step by step they can do it if they have to.

MR. BURTON: Let me try to --

CHAIRMAN BONACA: It would seem to me like a way to just get out of making a commitment about a component that is important. I think you have to reflect on what's acceptable.

MR. BURTON: Let me just in general because I'm not as familiar as Muhammad with this particular situation. The current licensing basis has to be maintained. Whether it's getting a cold shutdown in 72 hours or whatever it is, whatever is in the current licensing basis as being credited with making sure that it happens, that is an intended function. I assume this is a 50.48(a)(3) criterion kind of thing.

If that is what is credited and it's needed to meet in this case 50.48 or whatever, the license renewal or the Rule says "Those things should be in scope." It really is a function of what it is they are crediting in their current licensing basis. I've said this before with Hatch.

When you try to get your arms around the licensing basis related to fire, it varies from plant to plant. It's just very complex. So in that respect specifically for fire, it's a little more difficult to try and say that something is generic. It's very plant-specific when you look at licensing basis.

That's one of the reasons why we have the ISG on the scoping of fire protection which I think you all are familiar with. I think you've been briefed on that. We're developing that but part of the ISG is not so much to say what should be in scope related to fire but here is the process that the staff uses and the documentation we look at to get our arms around a plant-specific licensing basis. Rani Francovich has been the person who has done that. But I know in the case --

MR. ROSEN: Wait a minute. I think we're making this way too hard. It's simpler than you're making it. If the plant doesn't want a pressurizer spray head in this program, fine. All they have to do is show they can maintain licensing basis without it. But if you do that on Fort Calhoun, it's not adequate for the next plant.

MR. BURTON: That's true.

MR. ROSEN: Because it's the circumstances

and the thermohydraulics could be different.

DR. LEE: Let me just add to what Mr. Rosen and Dr. Bonaca said. Rani Francovich just reminded us when we were reviewing Catawba- McGuire we asked the same question about a pressurizer spray head. In that case, they could not show us an analysis that said they don't need the spray head. In that case, the spray head was in scope and they didn't manage it.

CHAIRMAN BONACA: I was talking about primary and secondary way or a backup way because the SER does not talk about the efficiency of the spray head. It talks about there are other ways of pressurizing and I wasn't sure that they were particularly charging and living on the secondary side was a very orthodox way of doing it that way. Is that really where you want to get? I'm not sure you want to get to that point.

DR. LEE: We need to go look at the SC again and see if we can prove that.

CHAIRMAN BONACA: That's the point I'm making. Now you are telling me that it's in the licensing basis of the plant as one way of the pressurizer. Well they can have maybe included bleed and feed. Do you really want to depend on bleed and

feed? Would you accept that as a means of cooling and the pressurizing? I'm not sure you would do that. You would say "Wait a minute now. Spray head is important." That was the point I was making was that the SER wasn't talking about induced efficiency and yet adequacy. It is talking about other ways of doing it and one of them didn't seem to be very orthodox to me.

DR. LEE: Emphasize that point.

MR. KUO: We will take a look at the SER and come back to you.

CHAIRMAN BONACA: With that, let's take a recess until 1:00 p.m. Off the record.

(Whereupon, at 11:58 a.m., the above-entitled matter recessed to reconvene at 1:01 p.m. the same day.)

A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

1:01 p.m.

CHAIRMAN BONACA: Okay. The meeting is called to order. You can continue with Section 3.

MR. BURTON: Okay. Everybody can hear me okay. All right, just before the break, I started to get into Section 3 and just talk a little bit in general terms about how the staff went about its review and some of the training that we did of the staff and some other folks as we went through the process.

Now we're going to start to get into some of the details of the SER. I'm going to start Section 3.0. There are four subsections here. 3.0.1 describes the new GALL format that aid the reader. 3.0.2 as I mentioned before describes the staff's review process which I've gone through. 3.0.3 evaluates the common aging management programs. I'll explain common versus unique.

You know there are ten program attributes. Three of the program attributes are related to quality assurance ("QA"): corrective actions, confirmation and administrative controls. Those cut across all of the aging management programs. So rather than evaluating those three for each program, the evaluation involves

the same thing each time. We evaluate those separately. We did that in Section 3.0.4.

In general with regard to these things, we're looking for 10 CFR Appendix B QA program that addresses the three attributes. We're looking for that Appendix B pedigree to apply to both safety and nonsafety-related SSCs. That's traditionally what's been going on with some of the applicants so that's what we looked for. All of that is laid out in Section 3.0.4.

Now it is in this section of the SER, we have an open item and this is the only open item that technically is still open. I mentioned to you before that we had sent out several what we call "potential open items". They responded to those potential open items in a submittal dated March 14th.

In addition to addressing those potential open items, they also provided to us a number of revisions that they made to the Section 2 and Section 3 tables. There were a fair number. Because it was submitted in mid-March, the staff did not have time to evaluate all of those revisions. So we had an open item more as a placeholder until we could finish reviewing the information that they provided. In OPPD's slide, you remember they said that there were

a couple of open items that were in our court. This was one of them.

Now we had a two day meeting a couple of weeks ago to go over all of those revisions. The revisions were made for three reasons. Some of the revisions were made in response to some of the RAIs that we asked. Some of the revisions were made in response to the potential open items that we issued. Then there were a number of revisions that they made on their own.

The staff had to go through and make sure that all of those revisions that they made were actually okay. We've gone through probably 95 percent of them and found them acceptable but there's still a few that we've actually discussed and they've made revisions based on our discussions. However the staff has been so busy, they haven't had a chance to go back and follow up on that.

Technically it's still open but as a practical matter if these last revisions are consistent with the discussions that we've had, we expect that once the staff can get away from the other license renewal reviews that they are doing and can take a look at this, this will go to resolved. We expect to have that done in the next couple of weeks.

Technically it's open but as a practical matter, we really think it's resolved.

Next we're going to go into the aging management programs. There are 14 what I call common aging management programs. Now what do I mean by common? These are they. Common aging management programs are programs that are credited with managing aging and components across system groups.

Chemistry. Chemistry is credited with managing aging and components in reactor systems, in EFS systems, in auxiliary systems. It cuts across system groups. All of these do that so that's why we call them common aging management programs.

There are other programs which I'll talk about in a minute that are unique to just one system group like reactor vessel internals inspection. That only is addressed for components in the reactor systems groups.

So these are the 14 common aging management programs. Five of them they claim to be consistent with GALL. Seven of them are consistent with GALL with some deviation. Two of them are non-GALL AMPs. We documented the review of all of these in Section 3.0.3 as I mentioned before.

I did want to discuss a couple of them

because I think they had some interesting things to share. One is the general corrosion of external surfaces program. We had a confirmatory item come out of this. During the AMR inspection, we found that the heat exchanges in the spent fuel pool cooling systems which are made of carbon steel and so the management of the external surfaces was really going to be done by this program.

But when you looked at the scope associated with this particular program, spent fuel pool cooling wasn't in there. We discussed it with them and they agreed that it should be. We had a confirmatory item until they actually revised the scope of the program to include this system. They did that and it's resolved.

One-time inspection, we talked about that a fair amount this morning. As you mentioned before, when you do use a one-time inspection. It used to confirm that aging effects either aren't present or they are progressing so slowly as to not be an issue.

At Fort Calhoun, this program has not yet been developed. From a review and inspection point of view, what we were looking for was to identify where this program was going to be credited and to make sure that we had commitments to make sure that when they do

create this program, all those areas are covered. If you go to Appendix A, the commitment table, you'll find the ones that involve the one- time inspection. There is a fairly long list of items that they've committed to cover in this program.

CHAIRMAN BONACA: Why would you have a one-time inspection program? In previous applications, there wasn't a program that says one-time inspection program. Simply, there were commitment to one-time inspections which varied depending on the type of system or component you are going to look at.

MR. BURTON: That's true.

CHAIRMAN BONACA: The fact that each one of them could convert itself into a program should in fact the one-time inspection show that you do have an aging mechanism.

MR. BURTON: Actually Ken wanted to address that.

MR. HENRY: Ken Henry. We identified it as a program because it's identified in GALL as a program. It gives us the place as a program document to collect all the data so all the evaluations will be collected there. It'll be a place where all the records will be kept and you'll be able in the future

to see it as one thing. But it is credited as a program in GALL.

MR. BURTON: So from our point of view during the AMR inspection, again as I told you before first of all we're looking to see if the program exists and covers what it needs to cover. In this case, it didn't. Second thing were looking for is to see if there was a program that had some mark-ups or something like that. Again, not there because it hasn't been developed.

So we had to go to their commitment tracking system. Each of the issues that are going to be covered in the one-time inspection they have what they call action requests. In their commitment tracking system, what you see is a whole list of action requests ("ARs") that cover each issue that ultimately is going to be covered in the one-time inspection. So during the inspection, we actually went and saw that they do have the things in place to do that. Then in course on our end, we have it all covered in Appendix A.

CHAIRMAN BONACA: For example, you could have a one-time inspection on void swelling.

MR. BURTON: For instances, I don't know if that is the case but yes for instances that's true.

CHAIRMAN BONACA: I'm just making an example. Now you go in and you find that you have a void swelling that's beyond what you expected and therefore you have to inspect again. Would you keep it as a one-time inspection or would you just move it to reactor vessel internal?

MR. HENRY: And that's identified as part of the GALL program. If you find something unexpected even such as corrosion in another system, then you have to address it. It would somehow get incorporated into some other program.

MR. BURTON: Right. I think this is true not just for Fort Calhoun but in general. If something is not what you assumed in the one-time inspection, it gets kicked into their corrective action program, goes through all of that, and ultimately if it is something that's beyond a one-time, it will get incorporated into a already existing program. Or if they have to develop a new program they would do that. That's how that works.

I just talked about the common aging management programs. Now I'm going to give a quick talk about the ones which I call unique. They are associated with a specific system or structural group. In the reactor systems group, there are five aging

management programs: vessel integrity, internals inspections, steam generator, Alloy 600 and thermal embrittlement of cast. All of those are credited for the managing components in the reactor systems group and no other group.

What you see in parenthesis is these are the sections in the SER where you can find the staff's evaluation. The common aging management programs were all evaluated in Section 3.0.3 of the SER. For the system specific AMPs, they are evaluated within the system group in the SER where it's discussed.

For auxiliary system, we have three of them: fuel monitoring and storage, load handling and buried surfaces and then under structures, we had containment leak rate. Actually I think there is one more. Yes, in electrical, we have the non-EQ cable aging management.

A little bit of statistics. Out of that group of system-specific AMPs, four of them were consistent and six were consistent with GALL with some type of deviation. There were no non-GALL AMPs. That should say non-GALL as opposed to not consistent with GALL. As I said, the staff's evaluation for each of those is in the specific SER section for the system or structural group.

MR. LEITCH: There's a comment. I think it's in the SER. I didn't write down the reference. There's a comment that non-EQ cable aging management program was not adequately described.

MR. BURTON: Right.

MR. LEITCH: Now has that been resolved?

MR. BURTON: Yes, and in fact the answer is yes. It's been resolved. I was going to talk about that when we got to the electrical portion.

MR. LEITCH: Okay.

MR. BURTON: But just to say briefly, the initial aging management program that was submitted in the application was not a GALL program. Since then though, we do have a non-EQ cable AMP in GALL, E1, E2 and E3. There's actually three of them. They have since gone back and now have submitted an aging management program that is consistent with those three GALL programs but I was going to talk about that a little bit later on.

MR. LEITCH: Okay.

MR. BURTON: So that issue has been resolved. What I call Fort Calhoun Station AMP statistics. Total number of AMPs is 24. Total number of non-GALL AMPs initially it was three including that non- EQ AMP that I just mentioned. Now that it has

now been redone to be consistent with GALL, now we only have two non-GALL AMPs. Number of AMPS that are consistent with GALL was 21. Now with that revised non-EQ AMP, it's 22.

Number of AMPs that have some sort of deviation from the GALL AMPs is 13. Of those 13, remember I told you there were three types of deviations. Four of these 13 have clarifications. Six have some sort of exception and ten have enhancements. Of course, some of them have more than one of these types of deviations.

What this is I looked at the AMPs and are crediting a GALL AMP claiming to be consistent with a GALL AMP and wrote down all those GALL AMPs. There were 30 of them initially. Now there are 33. Does everybody understand what I'm saying there?

MR. LEITCH: No, you missed me on that.

MR. BURTON: Okay, I'm not sure I said it clearly. The difference between these two is E1, E2 and E3. Those are three additional GALL AMPs. There are 33 GALL AMPs that Fort Calhoun is claiming consistency with. Does that make sense?

MR. LEITCH: Yes.

DR. RANSOM: Why is the total number still 24?

MR. BURTON: Because in some of the Fort Calhoun AMPs, one AMP may say "We're consistent with GALL AMP X and GALL AMP Y." Do you know what I'm saying? So Fort Calhoun AMP can be consistent with more than one GALL AMP.

Getting into the system groups, the first one is SER Section 3.1, Reactor Systems. This system group consists of three systems: reactor vessel internals, the reactor coolant system ("RCS") and the reactor vessel. Now remember what I said before. What the staff is trying to do, our bottomline, is we want to make sure that the AMRs that they claim to be consistent with GALL are in fact consistent; that the issues where GALL required further evaluation that we've done that evaluation and found it acceptable; and ultimately when we do that we can say that we find that the components are or will be adequately managed for the extended period. The bottomline for Section 3.1 for reactor systems is we reach those three conclusions.

But I do have some issues that I wanted to bring up. The first was the Alloy 600 program. We talked a little bit about that this morning. As you know, this whole thing with Summer and Davis- Bessie and the cracking and the hole and all that is still in

flux and we're still trying to reach resolutions on that. We issued bulletins and orders. So it was difficult for the staff. The staff could say "Let's evaluate them at this snapshot in time with where we are with regard to the development and resolutions of these things or let's just get a commitment from them" to say "Look when all this is said and done and we've reached our final resolutions, let's get a commitment from them that they'll implement whatever comes out when all is said and done." That's what we got from them. That's how we handled all that stuff with the cracking and the wastage and all that.

This next one I already talked about orders and generic communications. Anything that comes up, the staff will address them for the current operating term and then carry it into the renewal term.

MR. LEITCH: I'm a little confused though. Phil, didn't you say earlier that Fort Calhoun had some Alloy 600 in non-typical locations?

DR. SHACK: Right.

MR. LEITCH: That is locations that may not be described by the bulletins and orders. So I'm thinking back now to how was that question answered. In other words, what are they doing with inspecting

the Alloy 600 in other locations?

MR. BURTON: Did you want me to speak to that? I can speak to it in general.

DR. SHACK: They told us what they were going to do. Do you want to hear from the staff if they found that acceptable and why?

MR. BURTON: Okay. Let me back up because from our point of view because everything is in flux --

DR. SHACK: No, the particular one was the Alloy 600 that was susceptible to the IASCC and the void swelling. It was the Alloy 600 in the internals. The V.C. Summer and the head problems, there addressed by what you've done. The pressurizer. Almost all the Alloy 600 is taken care except for this flow skirt which I don't even know what it is.

MR. BURTON: Okay.

DR. SHACK: But it's there. It's a irradiated apparently. They say it's going to have void swelling. Their proposal was to do a fracture mechanics analysis or a loose parts detection.

MR. GAMBHIR: You're talking about --

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

MR. BURTON: Flow skirt was fracturing Ls.

MR. KUO: Mr. Barry address that.

MR. ELLIOTT: I think SER says you can do a one-time inspection of those.

DR. GASPER: Yes.

MR. ELLIOTT: That's how we resolved this issue that they would look at the critical location in this component and do a one-time inspection. That's what I think RCR says. That's what we agreed to.

DR. GASPER: Yes, and I believe the analysis was to look at the fluence to these various Alloy 600.

MR. ELLIOTT: Yes, fluence and stresses and pick the critical location.

DR. GASPER: Right.

MR. ELLIOTT: Then do a one-time inspection of that location.

DR. GASPER: That is correct.

DR. SHACK: The license renewal program says "The fluence and stress analysis will be performed to identify criteria location. A fracture mechanics analysis for critical location will be determined with full acceptance criteria and resolution required to detect flaws. Appropriate inspection techniques will be implemented based on analyses." Even if you don't know what the critical fluence is if you're looking at the worse location and

you monitor that, then you've bounded all of the rest of this stuff.

MR. ELLIOTT: Right and that's what we've planned to do with the one-time inspection.

DR. GASPER: That's what you've found acceptable and that's reasonable enough.

MR. BURTON: Thank you, Barry. The next interesting area under reactor systems, I actually have spoken to this a little bit before. The steam generator program is a GALL program but the GALL program manages aging in the steam generator tubes. What Fort Calhoun did was they credited this program for managing aging in other steam generator components. These are some of them here.

From our point of view, we had to really understand how exactly are you going to do that. We had a whole series of discussions, RAIs and potential open items to really understand how they are going to do this. Ultimately we got some satisfactory answers. There's a lot more guidance on managing the tubes as opposed to some of these other things.

On the secondary side of the steam generator, the robustness of the management, the inspections stuff, is of somewhat less. There was some issue as to what's the appropriate level of

inspections and things like that and what should be the qualification of the inspector. Do they need to be VT-3 qualified or VT-1 qualified? I can't remember which one it is. Was that necessary when inspecting these components? We went through a lot of that and ultimately we reached an agreement on what was the appropriate level. Bottomline when all that was done, we feel that the way they're going to implement this aging management program is going to be appropriate for these components.

DR. RANSOM: Just as an example, could you give me a few examples of what they would actually inspect and how often would they do that in an aging management program say for a component like this?

MR. BURTON: Okay. What I'm going to do is turn it over to the reviewer Cheryl Kahn who can answer those questions.

MS. KAHN: They broke the different components depending on where they were and what the material was. They broke them down into a couple different categories. I can give you just one of the examples. They included secondary shell, the handholds, the head, the manway, the transitional cone all into one grouping. They said that basically there were some more materials, similar environments.

They visually inspect at least one of those components every outage when they open up the steam generators. Frequently it tends to be the handholds because they have easiest access to it. They believe that's representative of the rest of the components. However they also do crawl-throughs of the steam generator secondary side during the outage and they're just visually inspecting as they go various different components.

DR. RANSOM: What do they look for?

MS. KAHN: They are looking for rust, corrosion. In this particular case, it is a loss of material or corrosion that they are looking for. In that case, they're just looking for anything that's out of the norm from what they typically expect to see.

DR. RANSOM: Does they take measurements?

MS. KAHN: For that particular one, give me one moment.

DR. RANSOM: I guess we heard they're replacing the steam generators.

MS. KAHN: Right.

DR. RANSOM: Is that a part of the aging management program?

MS. KAHN: No, that's not part of the

aging management program. I have to look but I know that for a number of these inspections what they referenced were site cleanliness standards in terms of what their acceptance criteria was and that was in sizes. It's like a square inch area of corrosion or rust or degradation that was acceptable. If it was anything beyond that, then they had to flag it.

What a lot of the discussions that we had indicated was that the folks that performed those inspections they tend to be vendors or contractors. They are going from plant to plant to plant. They know what they're typically seeing at all these plants. If they see something beyond those site cleanliness standards or if they see something that's out of the ordinary, they would flag that, issue a corrective action document and then they get into further evaluation from there depending on what was found.

DR. RANSOM: Thank you.

MS. KAHN: You're welcome.

MR. BURTON: I think that's all I wanted to say on that one. Going into Section 3.2, Engineered Safety Feature systems, there are basically two ESF systems in this system group. Safety injection and containment spray, that's one system but

they grouped everything for license renewal. That consists of high-pressure safety injection ("HPSI"), low-pressure safety injection ("LPSI") as well as containment spray.

Then the second system is containment penetration and system interface components for non-CQE systems. That's the name of the system. That is the one that catches the containment isolation valves, again similar intended function including the piping between the penetration and the isolation valves.

Demineralized water heat exchangers, those are needed to maintain the pressure boundary for the component cooling water. That's actually captured in here as a component in one system but they're crediting in another system because it's needed to maintain the pressure boundary. Then the mechanical portions of the electrical penetrations. Those are the kind of components that are within this system. Basically those are the two engineered safety feature systems.

We didn't find any outstanding issues here. So again the three things that we were looking for during our review where they claimed consistency with GALL, we found that to be okay. For the issues

that required further evaluation from GALL, we evaluated those and found those to be acceptable. As a result, we found the components in the ESF systems are or will be adequately managed.

Going into Section 3.3, Auxiliary Systems. There are 20 auxiliary systems and you know they range from wall water, component cooling water, ventilation, diesel generator support systems. It's a catch-all, a lot of systems in there of very different kinds. Again bottomline is we found that where they said they were consistent with GALL was okay. Issues that required further evaluation, we looked at those and found them acceptable.

There was an issue that came up as an open item and it had to do with the tubes in the regenerative heat exchanger. Those heat exchanger tubes are not going to be subject to aging management. So the issue came up with the staff that "Okay, we need to understand the licensing basis for the chemical and volume control system ("CVCS") and where and if it's credited in terms of accidents and things like that."

So we went through that as a scoping issue and then said "What are the consequences if you had a letdown line break or charging line break? What

normally happens and then what is the impact if you do not have the tubes to maintain the boundary between the letdown and the charging?"

What they clarified for us is that basically if you get a break like that, the letdown line gets isolated and bottled up. You just have dead head there. In terms of if you need any charging inventory into the RCS because the letdown line is dead headed, you're not doing any inventory bypass so it will all get in there.

MR. LEITCH: Butch, so I just that I understand this, in other words, they had reviewed this from a pressure retaining standpoint in the shell but what they had not done was the consideration of tube side to shell side leakage. So they didn't have an aging management program for the tubing.

MR. BURTON: Right.

MR. LEITCH: And you concluded that one was not needed.

MR. BURTON: Right because the consequences to the tubes and losing that barrier between the letdown and the charging like during an accident, it didn't adversely impact on the ability to charge and maintain RCS inventory.

MR. LEITCH: Is an accident the only

situation that we need to consider? Wouldn't that play some significant role in normal operations?

MR. BURTON: I'm going to swing this over to the reviewer because they did get into all that both normal and accident situations. I'm going to let Stu Bailey address that one specifically.

MR. BAILEY: Hi, this is Stu Bailey. For clarification, this really did become a scoping issue. I'm actually the system engineer who took a look at this. The background on this is initially the LRA led us to believe that the tubes were going to be managed. It was actually identified during the AMR inspection that no, they don't actually manage the tubes at this heat exchanger because it's all-welded stainless steel construction. They can't really do any inspection on them.

So they came back with the argument that we really don't need these. They do not have a license renewal intended function. Then it became more of a scoping issue. We pursued it from the scoping perspective. It was a potential open item and the written up as an open item in the SER. Since then, I believe we've come to resolution.

There was a lot of discussion about the use of the CVCS both during their Chapter 14 analysis

and during the regulated events. Also the potential for this to be a design feature to isolate breaks and the CVCS itself and through walking through the operation of the isolation valves that are built into this system and the redundancy that they have there, the staff has come to the conclusion that the pressure boundary is not needed for a license renewal intended function.

In terms of an operational issue, they do have a discussion of that. I don't think that is reflected in the SER. They have considered that. It could potentially be an operational issue if you had significant degradation.

I think the pressure difference across the tubes is normally very small in normal operation. You would probably need some degree of degradation to notice a significant leakage there. But they would start to have trouble maintaining temperature differences and possibly RCS chemistry. In looking at that operational issue, it would probably drive them to identify that they were having some degradation in these tubes.

MR. LEITCH: It sounds a little like because we can't do -- In other words, we don't know how to inspect these tubes, therefore they're screened

out.

MR. BAILEY: I think they are arguing that it didn't go in that direction. From our perspective, the GALL has a few errors in this area that we have corrective actions to fix. So the GALL and the SRP have some inconsistencies. I think that they have some over- reliance on these tubes. From looking at the paper trail, it looked to us as though they were going to do inspection of this tube and when questioned, they decided no. I believe they are saying otherwise. So there might have been some inconsistency in the LRA or the LRA might not have --

MR. VAN SANT: This is Bernie Van Sant. No, we had never credited any type of an inspection for these tubes. It was identified when we performed our engineering analysis that went into the application that we would not be doing an inspection of these tubes and had the justification defined then that it was as Stu has said that these don't perform an intended function. As far as operationally, we would have to come down to fix this if we had a leak that would impact our ability to maintain chemistry or impact temperature on our letdown side.

MR. BAILEY: Okay, that's possible. The one link in GALL covers region heat exchanger and

letdown heat exchanger. In going to this GALL format, there is occasionally some ambiguity in the AMR.

MR. LEITCH: Okay. Thank you.

MR. SIEBER: If you have a tube leak in these heat exchangers though, you are bypassing some injection flow, are you not?

MR. BAILEY: Not following an event because the letdown phase and therefore it's going against dead head. You could be bypassing some of your system function during normal operation.

MR. SIEBER: On the other hand, if you had the leak in the letdown system, an intersystem leak or something like that, you'd be impacted there if that's analyzed and bounded, right?

MR. BAILEY: There are enough isolation valves that the normal operation of this system would isolate that.

MR. SIEBER: Okay.

MR. BURTON: Thanks, Stu.

MR. SIEBER: I guess you have an automatic isolation on high temperature in letdown so you don't melt the resin.

MR. BAILEY: Yes. That would be after the letdown heat exchanger. I think we were focused mostly on upstream of the letdown.

MR. SIEBER: Okay.

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

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

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

MR. SIEBER: Blowdown is not safety

related though, right?

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

MR. SIEBER: You don't need it for anything other than maintaining chemistry on the secondary side.

MR. BURTON: Correct.

MR. SIEBER: So why would it be in scope? Is it 2 over 1 deal or something like that?

MR. BURTON: I don't know.

MR. VAN SANT: This is Bernie Van Sant. The portions for blowdown that are in scope are the containment isolation portion. The portion between containment isolation and the generators is a Class 2 safety related.

MR. SIEBER: Thank you.

DR. SHACK: Just to go back to heat exchanger, is that something that's going to be plant-specific as to whether it can be isolated or will that system disappear from GALL now or it's a plant by plant thing so you leave it there and they have defend leaving it out?

MR. BAILEY: Well, the intention is to correct GALL. That's the action that we have taken. I'm pretty confident that will all the CE designs there is sufficient isolation. I have not looked

enough at the Westinghouse designs to know whether you can just carte blanche write this off. That will be part of our GALL revision to look into that.

MR. SIEBER: But the failure history of those is virtually no failure, right? I can't recall of anybody that had a failure like that.

MR. BAILEY: I think that's true. I don't think they normally see the accident conditions and they are not frequently inspected.

MR. SIEBER: The services are not hard.

MR. BURTON: The next one I wanted to go to was Structures, Section 3.5. I already gave you a list in Section 2 of the actual structures and structural components. No major issues came up with the review of the aging management review stuff so again we found that they are consistent with the guidance in GALL. Where GALL recommended further evaluation, we looked at that and found it to be acceptable. Again based on that, we found that the structures and structural components are or will be adequately managed.

MR. LEITCH: Did you agree with Fort Calhoun's position that there was nothing unusual other than GALL as necessary because of the buckling that they had experienced in the containment liner?

MR. BURTON: Actually the buckling issue is part of Section 4, TLAA.

MR. LEITCH: Oh, it's a TLAA.

MR. BURTON: I'm actually going to talk about that a little bit later.

MR. LEITCH: Good.

DR. RANSOM: I'm curious on this. What would an aging management program for building piles consist of?

MR. BURTON: Did you want to speak to that? I don't know how you wanted to do this.

MR. VAN SANT: There is no aging management program for the building piles.

MR. JENG: I'm David Jeng. There's no requirement of aging management program on piles but there's management aging about how the pile behaved when they are staying down there in the virgin soil for many years. If the pile is driven to an undisturbed virgin soil, the knowledge tells us that there's no appreciable degradation corrosion or erosion over the material.

However if the pile is driven into a partially disturbed foundation, there could be minor or localized degradation happening in part of the piles. But our main basis is over the couple hundred

years we have been building piles in the high-risk buildings in various areas so they are functioning over some years. So the consensus is there are no effective aging of the pilings based on our past experience.

DR. RANSOM: So there isn't an aging program. It's just that you have accepted that the pilings are good for 200 hundred years.

MR. JENG: Yes, based on our experience and the technology of the construction industry.

DR. RANSOM: Unless of course it becomes like the Leaning Tower of Pisa or something.

MR. ROSEN: What were the piles in the Leaning Tower of Pisa?

MR. BURTON: Not good.

MR. LEITCH: That's why it's leaning.

MR. BURTON: Thanks, Dave. I appreciate that. Moving into Electrical, Section 3.6. As I had mentioned before, there were actually 20 electrical systems that were in scope but the components associated with all but three of them were screened out as active. These were the only commodities that were subject to an AMR. I mentioned all that before.

There are three GALL AMPs that address cables and connections. I've summarized. The third

one is on the other slide. There are non-EQ cables. The XI.E1, this is where cables are exposed to adverse environments caused by heat, radiation or moisture. Again non-EQ cables used in instrumentation circuits. The issue is reduction and isolation resistance upon exposure to heat, radiation or moisture.

MR. SIEBER: For the EQ cables, you're relying on qualified life.

MR. BURTON: Yes, for the EQ cables, that's a TLAA. So we have the EQ program and they are going to continue to maintain that in the extended term. That's all we really were concerned about with the non-EQ. On the next slide, continuing on, E3 had to do with inaccessible medium voltage non-EQ cables exposed to local adverse environment caused by moisture and voltage exposure. Those are the three GALL AMPs.

As I said before, initially the non-EQ cable AMP that OPPD submitted was not consistent with these three. I think part of it was when they were developing their applications this still hadn't been fully developed. That was part of the issue. So once all this was done, we came back and said "Okay, we have a GALL AMP and you should probably go on and make your non-EQ AMP consistent with the GALL" which is

what they did.

So they develop a new AMP that is consistent with GALL AMPs but in our review we identified four open items. The first one which was a fallout from this is that the USAR Supplement that was originally submitted was a description of the non-GALL program. So we had an open item to say you need to go back and redo the USAR Supplement to describe the new AMP that's consistent with GALL. They went back and did that. That's resolved.

The second one, we brought up the issue of aging in bus bars. Initially we said that you need to develop a program to manage aging in the bus bars. We have some generic communications and some operating experience that describes aging degradation. They came back and said "We don't need a new program. We can actually perform the management of those bus bars as part of one of our current programs" which is the periodic surveillance and preventive maintenance program. That particular program is a non-GALL AMP. So they went back and did a revision to make sure that these bus bars are within the scope of this AMP and they can do all the management they need to do. That is resolved.

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

of that issue? Was it just bus bars? I thought bus ducts were also a part of that issue.

MR. SIEBER: I think I read that too.

MR. BURTON: Yes, I think that's right but let me just have Paul Gill speak to that.

MR. GILL: I'm Paul Gill from Electric Engineering. Bus bar in the license application was used more generically but they do mean bus ducts, non-segregated and isophase bus as well. So the bus bar they originally had in scope were the switchgear buses which is not required by the Rule because they are active components. We sorted that out and basically focused on the bus ducts and bus bars that are found in nonsegregated phase bus or isophase bus or even segregated phase bus. But they don't seem to have segregated phase bus.

MR. LEITCH: So where you're saying bus bars, it also included bus ducts.

MR. GILL: That's right. They still carry the generic term but if you look at our SER, we specifically talk about nonsegregated phase bus and isophase bus which are the two in scope essentially in the SBO recovery path.

MR. LEITCH: Okay, thank you.

MR. BURTON: Thanks, Paul. So that was

the second open item electrical open item and that's resolved. The third open item was asked to provide an AMP to manage aging in the high-voltage conductors or they have an option if they can justify why one is not needed. It turns out that they provided an adequate justification why they didn't need to do that. So we were able to close that one out.

MR. LEITCH: I was confused why that issue. It seemed to me that what we're talking about here is aerial conductors where there is aluminum with a steel shank running through them. Was that the issue? I really didn't understand what we were talking about.

MR. BURTON: Paul's coming back.

MR. GILL: Again I'm Paul Gill. I shouldn't have left. I think what we are talking about here is essentially what you just described. These are the conductors that come from the switchyard to the primary site off the auxiliary transformers. They are basically overhead and they are aluminum core steel reinforced conductors. There are no aging effects on that.

MR. LEITCH: Now we had agreed that there was no aging effects on the aluminum conductors. But I thought we had a question about whether there was

aging effect on the steel. What I'm saying, Paul, is you were satisfied that was no aging management required in that area also?

MR. GILL: That's correct.

MR. BURTON: Okay?

MR. SIEBER: It seems to me it was my experience that those things are bolted together and there are clamps on them and the clamps would come loose.

MR. GILL: We didn't get into that detail. Maybe the license --

MR. SIEBER: Especially with the aluminum and copper, it didn't do it but the aluminum ones did.

MR. DiBENEDETTO: Phil DiBenedetto.

MR. LEITCH: Especially with these clamps on the round solid aluminum bus stop. I don't remember it on the stranded. I guess you're talking about stranded.

MR. SIEBER: Yes.

MR. SIEBER: Yes.

MR. GILL: Again they are from switch yard to the primary site of the auxiliary transformers so there's as long of runs. It depends how far the switch yards are.

MR. SIEBER: It's the bottom of the

insulators and so forth which is basically a support. It's not a conductor.

MR. GILL: Right.

MR. SIEBER: So you don't need to worry about the resistance there.

MR. LEITCH: Most places have a thermal imaging that looks for high resistence connections.

MR. SIEBER: Yes, but it's a support. It's not a electrical conductor.

MR. LEITCH: It's not a conductor. I see what you mean.

MR. SIEBER: The only place where that would show up is at the pothead where it goes into the wiring of the transformer itself.

MR. LEITCH: Thank you.

MR. BURTON: Good. Thanks, Paul. Don't. Just hand on there.

MR. SIEBER: Are transformers active or passive?

MR. GILL: Yes, the transformers are active. So are the circuit breakers and all the relays. I heard earlier this morning there was a question about the relay house. The passive components through the relay house are essentially the control cables that are associated with the relays.

MR. SIEBER: And the connectors.

MR. GILL: And the breaker control schemes. They were already in the scope and they have an AMP for that.

MR. ROSEN: So all the rest of the stuff in the relay house is active.

MR. GILL: Active components and they basically are in scope but screened out.

MR. ROSEN: Yes, things like that are easy.

MR. SIEBER: That's active. See a transformers doesn't change state if I look at the real definition.

MR. GILL: But it's an energy transformation device so if there is any degradation it will manifest itself readily. Whatever maintenance programs they have in place for the normal electrical equipment it will be captured in there.

MR. SIEBER: Right.

MR. GILL: So under GALL, these devices are considered active and therefore do not require an AMP.

MR. ROSEN: What about fuses themselves?

MR. GILL: A fuse by itself is active. However the holders are passive devices and they are

already captured and we have an ISG on that.

MR. BURTON: Which is what I have up here right now.

MR. SIEBER: Yes, it depends on where it is. If it's part of a piece of switch gear or in an enclosure, then it's active. If it's not and it's a standalone, then it's passive.

MR. GILL: You're right. Exactly that's how the Rule defines it. Any fuses that are put in the switchgear assemblies are active components. Fuses that are standalone fuses in fuseholders are -- The holder is passive. The fuses are active but they are in scope and therefore need an AMP for that.

MR. SIEBER: Right.

MR. BURTON: Good and for anybody who may not be aware, this last discussion is exactly what was in our RSG 5. It lays out everything that was just discussed here. Basically with regard to the fuseholders, they have committed to managing them in accordance with that ISG. So that issue is resolved. Okay. I think it's okay now.

MR. SIEBER: I'll wait until he sits down before I ask my question.

MR. BURTON: You're a hard man. The next couple of slides were the ARM inspection but Wayne

already went through that. So that was it for Section 3. I'll go into Section 4, the Time Limited Aging.

CHAIRMAN BONACA: Why don't we take a break now? We'll take a break until 2:10 p.m. Off the record.

(Whereupon, the foregoing matter went off the record at 1:54 p.m. and went back on the record at 2:10 p.m.)

CHAIRMAN BONACA: On the record. Let's resume the meeting. We're anxious to hear about the TLAAs.

MR. LEITCH: Just before we get into TLAAs, I just had a couple of other questions regarding aging management activities. I guess I'm looking at page B-37 of the license renewal application. It's speaking about the PWSCC failure at V.C. Summer and also the pressurized instrument nozzle leak at Fort Calhoun. It indicates that fabrication issues or fabrication rework was a problem in both of these situations. I'm wondering. Have you reviewed other situations at Fort Calhoun is see whether there were other fabrication problems other than this one particular failure that occurred?

MR. VAN SANT: This is Bernie Van Sant. Yes, we've gone ahead and looked at the other Alloy

600 nozzles that we have on both the reactor vessel head and in the pressurizer to identify if there is any other fabrication issues and have not identified any that would lead to this type of crack.

MR. LEITCH: Okay. The other question I had related to page B-39 where we're talking about the buried surfaces external corrosion program. It talks about an opportunistic visual inspection of buried components. It's not clear to me. If an opportunity does not present itself, will certain inspections be done prior to entering the period of extended operation? Obviously you have to dig up something and look at it before 40 years. That's fine. But the question is suppose that opportunity does not present itself.

MR. VAN SANT: This is Bernie Van Sant. Just to respond to your question directly, no, the GALL doesn't require that but Ken can give you some information on what the frequency is that we dig it up for routine maintenance activities.

MR. HENRY: We do have two components actually. Our diesel fuel tanks are buried and they're on a set frequency. There's a PM task. So they would be dug up on a set frequency. The other components we looked into is we've been digging some

type of buried components up about once every two to three years. That's been our history over the last several years. That gave us some confidence that there would be opportunities to continue to inspect buried components.

MR. LEITCH: Does that include fire lines?

MR. HENRY: Yes, that does. Particularly it seemed that it's usually more some problem with the valve either hand linkage or valve leakage. That seems typically the reason we're digging something up.

MR. LEITCH: And you're a long way from an ocean so I assume groundwater is not very --

MR. HENRY: Not caustic, yes.

MR. BURTON: Let me just say to follow along with that. Our reviewer from that isn't here. She's feeling a little under the weather. But during the staff's review, we did get into that question and we had an RAI where we asked them "What is some of your operating history in terms of when you have dug those things up?"

The intention was to try and get a sense if they were not going to be doing on a regular basis, what's been the history in terms of the frequency that they've actually dug things up to try to get a sense of how often that might happen. Of course like Ken

said, he's given you some periodicity to looking at that stuff but the staff was aware of that and did try to understand a little bit better how that might go in terms of digging stuff up.

MR. LEITCH: This is the last question. Then on page B-40, General Corrosion of External Surfaces, you credit visual observation for detecting fluid leakage. Has the staff accepted that position that it's an acceptable way to go? When you see it leaking, then you know you have a problem.

MR. BURTON: Yes. Again I'm going to say yes but the reviewer is not here and I don't want to say too much.

MR. HENRY: I can address some of that, Butch. I think this caused some confusion because we have RAIs on this. The intention of this wording was that leakage would be a precursor if they saw leakage. But our inspections are for corrosion. That's what we were really trying to address that "Yeah, it wasn't the intention that if it got to leakage then we would do something about it" because typically the leakage would be from packing or something like that. That would just be an indicator.

If you let that continue then you would probably be seeing corrosion on other surfaces. That

was more just to address those precursors. The actual inspections are looking for corrosion and actual degradation. That did cause some confusion that the intent isn't to let it corrode to the point where the piping itself is actually leaking.

MR. BURTON: Thanks, Ken. I forgot about that. You're absolutely right. Good. Moving into Section 4, Time-Limited Aging Analysis, these are the TLAAs that we looked at for Fort Calhoun. I'll go through all of them but I do want to spend time on this one. This was this new open item that came up after the SER was issued. This is really your first opportunity to learn about this. So I want to spend some time discussing that.

Actually that's going to be the first thing coming up. We have Barry Elliot here the reviewer who actually dealt with this. All this slide does is gives you a little bit of history of how we got to the technical issue. They did a weld repair on the pressurizer liquid space temperature element. During a hydrostatic test, they found there was some leakage from the annulus between the sleeve and shell. They shut down and repaired it. They made the repair but they left the flaw in.

They did some evaluation in accordance

with some of the guidance that you see here. Now recently in April 2002, they found that the flaw remaining in service wasn't evaluated in accordance with some other guidance that gives you guidance on what to do if you leave the flaw in which is what some of these are. They had already identified that and so we had to open up a new open item. Currently it is resolved and Barry will go through where we are with that.

DR. FORD: Is this the same as a similar question that came up in St. Lucie?

MR. BURTON: Yes, very similar.

MR. ELLIOTT: What this is about is the licensee has made a half- nozzle repair. I don't know if you are familiar with that. That's where they take out a piece of the nozzle for the Alloy 600 problem. They had a leaking Alloy 600 nozzle in the pressurizer and they made the half-nozzle repair where they pull out half the nozzle. They changed the pressure boundary from the inside to the outside surface.

The half of the nozzle they leave in is the half that is cracked. So the question is how do you know the crack is okay for 40 years or how do you know for 60 years. That's what this issue is. The actual half-nozzle repair is being reviewed on a case

by case basis. But the actual flaw evaluation for the flaw that they leave in service is done in accordance with the ASME code.

That's where they are. They have to do that evaluation for the first 40 years and then they have to expand for the 60 years. That's why it's an open issue. How we will resolve that since they haven't done it yet for the first 40 years is we will work with them to establish what they are going to do for the evaluation and what the acceptance criteria will be for both the corrosion part of the analysis and for the fatigue part of the analysis.

In essence they've set up a procedure for evaluating the flaw which follows the guidance in NEI 95-10 which we've accepted. That procedure is based upon the license renewal rule where if you have a TLAA there are three things you can do. You can do the analysis. You can show that the previous analysis was bounded. Or you can set up a management program. That's what they are doing here. They are setting up a management program which we've accepted through the actual analysis.

DR. SHACK: Can you give me a picture of what this through-wall crack in the bottom half of the tube looks like?

MR. ELLIOTT: It's a J-weld. It's a penetration. It's your typical Alloy 600 penetration where you have a J-weld. And the crack either went through the J-weld or it went through the tube. So now the primary coolant leaked out in the space between the penetration and the shell of the pressurizer.

MR. SIEBER: And the pressurizer shell is ferritic.

MR. ELLIOTT: Yes, it's carbon steel.

MR. SIEBER: Right, and so the boric acid which you won't know the chemistry in the crack there.

MR. ELLIOTT: In this case, they put a seal on the outside so the pressure boundary has changed. So the boric solution that is in the annulus region between the pressurizer shell and the stainless steel penetration is going to be there because they didn't seal up.

MR. SIEBER: That's right.

MR. ELLIOTT: That concentration isn't going to be highly concentrated. It's just going to be the concentration of the boric acid in the primary coolant which is less than one percent when they start operation and then slowly it reduced to zero percent. That is not going to cause a significant amount of

corrosion in an annulus region. It only becomes a problem if it escapes to the air and the air evaporates the water and makes a highly concentrated solution. That's when you get the Davis-Bessie problem. This is a different concentration than that so it won't be as significant a problem.

MR. ROSEN: And is this a horizontal penetration or a vertical?

MR. ELLIOTT: I don't know its orientation.

MR. VAN SANT: It's vertical.

MR. SIEBER: It's in the liquid phase so it would be horizontal.

MR. ROSEN: Does that matter? All the time we've talked about this kind of problem, we've even gotten a very good description of it. Does it matter what the orientation is?

MR. ELLIOTT: Because the boric solution is only a very low concentration of boric acid.

MR. ROSEN: It could be in any orientation.

MR. ELLIOTT: It doesn't matter the orientation. It only becomes a significant problem when you get high concentrations and if you have a vertical penetration, it acts as a place where you can

keep evaporating the fluid and concentrate the amount of boric acid and get a highly-concentrated solution against the ferritic material.

DR. FORD: Barry, you undoubtedly heard about all the questions we had about St. Lucie and the repair that was done on the pressurizer there. Those questions, the uncertainties and crack growth rates and use of 690, etc., how much did those questions bear on how you analyzed this particular problem in terms of the uncertainties of the progression of cracking?

MR. ELLIOTT: There are two issues here, a fatigue issue and a corrosion issue.

DR. FORD: Right.

MR. ELLIOTT: Right now, we think we have a pretty good handle on both of those. In fact, fatigue we're just following the Code. For corrosion, there is a research that has been done that shows how much corrosion you get depending upon the amount of oxygen and the amount of temperature. We have data there.

But that is not a fully resolved issue yet. I have to admit that. So that's why although they are going to be doing the analysis, we've only allowed plants to operate on a cycle by cycle as part

of Part 50. That's one of the issues that we need to fully resolve before we resolve this issue entirely. That's where we are. There is uncertainty on the corrosion and we are still working on that.

MR. SIEBER: I don't want to get too far afield but it seems to me the indication that South Texas is amenable to is a repair like this.

MR. ELLIOTT: It is amenable. That's the reason they are doing a half-nozzle repair.

MR. SIEBER: And it also seems to me that my memory of the ASME code is probably not as sharp as it should be that that's a code acceptable method of repair as I understand it. But the real question is space for the Agency to approve that kind of a repair.

MR. ELLIOTT: Let me explain to you. The Code has changed over time. The latest versions of the Code would be an acceptable code but a lot of these plants aren't using that code. They are using an older code so that those plants who are using the older code would have to get a relief request.

MR. SIEBER: Okay.

MR. ELLIOTT: In the future when we endorse those revisions, it won't need a relief request.

MR. SIEBER: Would you typically for a RCS

pressure boundary repair like this require a periodic augmented inspection?

MR. ELLIOTT: That's one of the issue that we're discussing now. Right now, the only requirement would be for the new pressure boundary is that you do that ISI requirements for Section 11. And the question is do we need more. That's one of the issues that we're going through right now trying to decide.

MR. SIEBER: That would be an VT though, right?

MR. ELLIOTT: Yes, but the problem is that if you have corrosion on that annulus region, you're going to have to do something else. You're not going to see that by visual.

MR. SIEBER: I'm not sure for example in a heavy section of steel with a small nozzle how you would do volumetric of the indication because you wouldn't be able to shoot all the way through.

MR. ELLIOTT: For the indication that were remained in the vessel, we require them to do a bounding analysis if we assume that the crack will go right through the entire size of the Inconel 600 weld. And then it hits the carbon steel. The carbon steel is not receptable to primary water stress corrosion cracking.

MR. SIEBER: That's right.

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

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

MR. ELLIOTT: Right.

MR. SIEBER: Okay, that answers the question.

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

MR. SIEBER: Okay.

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

MR. ELLIOTT: Yes.

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

MR. SIEBER: There's no reason to believe

that the concentration would be much different than the bulk fluid.

MR. ELLIOTT: Right, exactly. That's what we think so far.

MR. SIEBER: There are places where cladding is missing on various vessels. It's exposed and it's approved.

MR. ELLIOTT: This is a present day issue that we're still looking at.

MR. SIEBER: Okay. Thank you very much.

MR. ROSEN: It comes up on this application is what we're talking about.

MR. ELLIOTT: This is a new issue that came up in this application.

MR. ROSEN: Yes.

MR. SIEBER: But it's common.

MR. ELLIOTT: It was not in the application. When we discussed what kind of Alloy 600 repairs they had made in the past, this issue came up.

MR. ROSEN: Well, I'm referring to this application. If there's a half-nozzle repair and a horizontal orientation where the boric acid in the primary system will be able to make contact with the ferritic material or the pressurizer. But because there is no mechanism to concentrate it, the amount of

corrosion on the ferritic material is expected to be very low.

MR. ELLIOTT: That's clearly our position, yes.

MR. SIEBER: And I think there's a fair amount of experience that bears that out.

MR. ELLIOTT: That's true. First, we've been making these repairs since the early 1990's here. This is not a new type of repair.

DR. SHACK: But new sensitivity.

MR. ELLIOTT: Right.

MR. SIEBER: Something to talk about. Thank you.

MR. BURTON: Thanks, Barry. The last thing I will say about that. This is a new issue. It wasn't in the SER. We're going to have a new SER section for 4.7.4 that will document all of the issue and the staff's resolution of it and everything.

Section 4.2, Reactor Vessel Neutron Embrittlement, anything out of the ordinary that we needed to bring up but I didn't want to just be silent on this. So basically the embrittlement issues fell into four general categories. Two of them were plant heatup/cooldown curves and LTOP PORV setpoints. It extended beyond the current term but not until the of

the extended operating period. The LTOP limits are considered in part of the pressure/temperature curves. Applicant uses staff-approved methodology to project the P/T and LTOP limits to the end of the operating period and determined that the vessel is okay. Tech specs will continue to be updated as required by Appendix G or H to ensure that the operational limits remain valid and projected fluence levels. This is all Barry's stuff. So basically we went through all that and found everything was going to be okay. That's two of the four issues associated with neutron embrittlement.

The other two are pressurized thermal shock and upper shelf energy. Beltline base metal materials will be adequate as long as the PTS reference temperature is less than 270. For beltline circumferential weld materials, they will be adequate as long as that reference temperature stays below 300. They projected all this out to the end of the current term, found that everything meets the PTS screening material and everything looked okay.

For upper shelf energy, we used our Reg Guide 1.99 Rev 2 and found that the beltline materials projected to have an upper shelf energy above the minimum 50 foot-pounds at the end of the extended

operating period. It meets the screening criteria and everything is okay.

MR. SIEBER: What is your reference temperature now?

MR. BURTON: What is it now?

MR. ELLIOTT: Excuse me. What's the question?

MR. SIEBER: What's the reference temperature now?

MR. BURTON: We say "As long as it's below the ..."

MR. ELLIOTT: I don't know what it is now. All we do is project. We use the neutron --

MR. SIEBER: You don't calculate now what it is now. You just approve the projection.

MR. ELLIOTT: No, I don't calculate. I just project for what it is at the end of the license and then calculate that value.

MR. LEITCH: On the upper shelf energy, there seems to be quite a bit of discussion about what position I guess was the term that was used. There was a 2.2 versus a 1.2. A lot of confusion in the discussion about the fact that Fort Calhoun had apparently used an incorrect approach initially. Then they changed. I guess I had the impression that when

they changed to the correct approach they found an even more conservative number like up around 56 foot-pounds or something like that. Is that correct or can somebody explain it to me? What was the confusion there and what was the difference between the two positions?

MR. BURTON: I remember that.

MR. ELLIOTT: They took the position so they can answer it but I can explain. In the Reg Guide there are two ways to calculate the drop in upper shelf energy. You can either do it based upon the chemistry and fluence of the material or you can do it based upon surveillance data. That's the second alternative.

When they originally put in the application, they made some adjustments based upon the surveillance data. When we talked to them about it, they thought they were doing it to the Reg Guide and they really weren't. They were doing something else. So they had to go back and do it to using what the chemistry was. That's why they had to go back to use a different position in the guide which is to use based upon the chemistry.

But we also asked them. It's okay to do it with the chemistry but you also have to look at

this actual surveillance to see if it's predicting what the guidance is in the Guide. That's one of the other things that we asked them to do. So they changed the methodology and then we asked them to confirm that the surveillance data that they were using would satisfy the guidance in the Guide.

MR. LEITCH: There's a whole lot of other plants listed there that evidently they would base it on. In other words, they don't have direct surveillance data -

MR. ELLIOTT: That have six different weld materials in their beltline. Unfortunately their surveillance weld material has nothing to do with any of those six welds. But there are other plants that have surveillance material that are equivalent to theirs. I thought this was the most important issue in this whole area not only because I did it. But because it was an important issue in the license renewal.

In fact, I think they thought it was the most important issue too because before they even put in this application, they came to us two or three years before this to discuss this issue of how they should do the evaluation for PTS and what surveillance material should be used to evaluate it.

We spent over a year or maybe two years discussing this with them where we worked out two things. We worked out a methodology for evaluating surveillance material and also a methodology for evaluating neutron fluence. They actually did this before they put their application in because they figured that this was going to be problem.

So we got all the methodology straightened out before they ever put an application in. When it came time for the application, they instituted the methodologies and all they had to do was arithmetic for the PTS Rule.

Now for the upper shelf energy, they didn't do the same thing. They waited until they actually put in the application before they did the evaluation of the upper shelf energy. That's why they started going back and forth. They could answer what they did.

MR. LEITCH: I guess I had the impression that Fort Calhoun was going to be very close to the 50 foot-pounds.

MR. ELLIOTT: They are pretty close. Fifty-four foot-pounds is pretty close. It could be 51 also but it's 54.

MR. ROSEN: We've had this discussion

before. That's a screening number, right?

MR. ELLIOTT: Right, that's just a screening number.

MR. ROSEN: That's just a number at which you begin to ask questions if you are on the right side of that number, there are no questions.

MR. ELLIOTT: I would just like to point out that there's a difference between this screening criteria for the upper shelf energy and for the PTS. The upper shelf energy, we have a lot of plants that are below the screening criteria for the upper shelf energy. There are a lot of plants who have done analysis and shows you can go down to 40 or 35 foot-pounds and still meet acceptable criteria.

We've never had a plant that went above the screening criteria for the PTS Rule and showed that they were acceptable. For the PTS Rule if you're getting close to that limit, the only thing you can really do is start cutting down the neutron fluence and that's what plants do. They start putting in all kinds of fluence reducer, methodologies so that they can stay below that. That's an entirely different screening criteria than the upper shelf screening criteria.

MR. ROSEN: That's not exactly consistent

with what we've heard. I'm not saying what you're saying is wrong but I think what we heard before and I'm willing to stand corrected if I am wrong is that the 270 degrees was a screening criteria.

MR. SIEBER: It is.

MR. ROSEN: If you were at 269.9, don't worry about it.

MR. ELLIOTT: It is. That's true.

DR. SHACK: If you're at 271, you have a problem, right?

MR. SIEBER: There's margin but the rule says 270.

DR. SHACK: -- include analyses.

MR. ELLIOTT: The screening criteria has margin in it. If you're 271, you probably could do things to be okay but nobody's ever done it. What people do is they do things to the core so that they can reduce the neutron fluence that is hitting the beltline. While in the case of upper shelf energy, a lot of people have done the evaluations below the 50 foot-pound and shows that there is plenty of margin.

MR. SIEBER: Nobody's had to reevaluate for the PTS.

MR. ROSEN: And you see what happened there.

MR. ELLIOTT: There was one client that tried.

MR. SIEBER: Okay.

MR. LEITCH: So I guess just to cut through it though, the two positions and all that, you're satisfied with what they used.

MR. ELLIOTT: Right. We even looked at it our own way if you read the SER and we came up with that it was okay. We did our own evaluation, different than theirs for the surveillance material and we came out okay.

MR. LEITCH: Okay. Thanks, Barry.

MR. BURTON: Thanks, Barry. Going into Section 4.3, Metal Fatigue, you know with this one there's a big on-going issue which is environmentally assisted fatigue ("EAF"). We had a confirmatory item that came out of this. I think we actually talked about this this morning, about the surge line welds. The inspection results, they'll determine exactly how to proceed depending on what happens with the inspection.

They're going to use on or more of these four options which is all fine, normal kind of stuff. If they use option four and that's part of the confirmatory item, they'll submit an aging management

program to give us the details of exactly how they're going to manage these aging effects. We had a confirmatory item. To submit in the license amendment, they said "Yeah, that's fine." So this issue is resolved.

MR. ROSEN: And what we heard this morning just to make sure I'm on the right page here is that they are going to replace it.

MR. BURTON: Oh.

MR. ROSEN: Right?

MR. VAN SANT: We did not commit to that.

MR. BURTON: I didn't remember that.

DR. SHACK: It's the pressurizer maybe.

MR. ROSEN: But not the surge line?

MR. BURTON: It's a possibility.

MR. VAN SANT: There's on-going evaluation. The commitment we made is to the program but there are on-going evaluations. Our decisions have not been made on that.

MR. ROSEN: But one possible maybe I heard is that you are going to replace the reactor vessel heads, steam generators, pressurizer and surge lines.

MR. VAN SANT: That is a possibility.

MR. ROSEN: All right. I wasn't hearing wrong.

MR. BURTON: Replace, repair, sharpen the pencil, manage. All those things are possible and they'll evaluate it once they do those inspections but basically that was their commitment. We found that satisfactory so that issue is closed.

The other issue that came up here had to do with the sampling system. We had a confirmatory item from there too.

DR. SHACK: While we're on that issue, do we have interim staff guidance yet on what is an acceptable fatigue program?

MR. KUO: That is being worked on right now.

DR. SHACK: I know you had some suggestions.

MR. KUO: Well, the NEI made another submittal to the staff. The staff is reviewing that and we have committed to reassure NEI in July. However we now just had a conversation with NEI that we are trying to arrange a meeting with them and with all our experts together and trying to make sure that the data that everybody uses are the same, consistent and the way we're using data are the same and consistent. So we are waiting to have this meeting to happen. Hopefully we can still meet our commitment in

July to issue the RAI.

MR. FAIR: This is John Fair. I think if I understood correctly Dr. Shack's questioning involved the option four what was an acceptable inspection program. The reason that it is not resolved is that the Section 11 has a non-mandatory appendix which addresses this issue. We have some technical concerns with that non- mandatory appendix.

Currently they are reviewing whether they should make some changes to that appendix which we may find acceptable. If we do get an acceptable Appendix L, that will resolve that number four option. But until that time on each license renewal review, we're asking applicants to make the same four commitments on the ones that they can show are good for 60 years with the environmental fatigue evaluation.

DR. SHACK: If you don't like the ASME Appendix L, you could write your own.

MR. FAIR: I could, yes. But I haven't chosen to do that.

MR. KUO: But the bottomline is that we are working on that issue.

MR. ROSEN: I'd be careful about writing your own appendix.

MR. BURTON: That was one issue that came

up in Section 4.3. The other one had to do with the sampling system. There is some guidance. USAS B31.1 has a limit of 7000 equivalent full-range thermal cycles and if it's exceeded during the extended period, the cycles for the affected portions are going to tracked in the fatigue monitoring program ("FMP").

As part of that, sampling piping is going to be analyzed and the stress calculation done to determine the thermal stress range. We developed a confirmatory item to make sure that all these analysis results are going to meet the guidance in the B31.1.

MR. SIEBER: That's the code of record for that point.

MR. BURTON: Yes. And they said "Yes, fine, no problem" so we have that confirmatory items resolved.

DR. SHACK: John, roughly what fraction of the plants is B31.1 on and the other ASME groups.

MR. FAIR: I think it's somewhere closer about half and half. I don't recall it off the top of my head. There was a second paper that was issued a few years back that discussed codes and standards for the different paths and they do have a listing of which plants were which code.

MR. BURTON: All right. That was all we

had for metal fatigue. Going to Environmental Qualification, that is a TLAA. Applicant has an equipment environmental qualification ("EEQ") program that's consistent with our GALL EQ program. We found everything to be okay there.

GSI-168, what I have just found out is that I'm behind the curve here. I thought that GSI-168 was still an open generic issue. I have found out that in fact we have resolved this and RIS has been issued as of May 2nd. So actually if you like, I have Paul Shemanski here who can give you a brief summary of what's in that risk and where we stand with that. Did you want to do that, Paul?

MR. SHEMANSKI: If they want me to.

MR. BURTON: Do you all want to get a brief summary of that?

MR. SIEBER: We already heard this.

MR. BURTON: You did. Okay, so you don't.

MR. SHEMANSKI: Well, actually. Paul Shemanski. Prior to issuing the RIS, it was sent to the Committee for review.

MR. BURTON: Okay.

MR. SHEMANSKI: No comments were received and the RIS was issued on May 2nd so the issue is now complete. The technical assessment is complete and

the issue is considered to be resolved.

MR. SIEBER: Right.

MR. BURTON: Why am I always the last to know?

MR. SIEBER: Come visit us. We're just like John Paul Jones. "I've not yet begun to fight."

MR. BURTON: So now we're all up to speed on that. Next was Section 4.5, Concrete Containment Prestress, this is going to managed by the containment in-service inspection program. Surveillance is performed in accordance with Subsection IWL. The tendon inspections are one, three and five years and then every five years after the initial pre-tensioning. This is their regulation that requires trend lines. The staff actually looked at the recent trend lines for the tendons and found the applicant to approach to managing the tendons acceptable. No particular issues came up out of that.

MR. SIEBER: Maybe I could ask how many tendons are out of service? Do you have any out of service?

DR. GASPER: No.

MR. SIEBER: Usually, there's margin. You have more tendons than you need.

DR. GASPER: Are these all available for

setting your pre-steps?

MR. SIEBER: Well to test them I think you have to take one out of service.

MR. VAN SANT: Yes, you have to remove the strand periodically but you put it back into service.

MR. BURTON: All right. Here we go. Containment liner plate and penetration sleeve fatigue, liner and penetration sleeves designed in accordance with ASME. Fatigue loadings assumed in the design. Cycling from these factors assume a one time loss of coolant accident, 40 cycles from variation and outdoor temperatures, 500 cycles of internal temperature between shutdown and operating condition. Liner experienced some buckling. The effect on the liner fatigue was evaluated and found acceptable for the extended period so we did look at that and found that what they did was okay. There weren't going to be any long term adverse impacts from that.

MR. ROSEN: Can you characterize this buckling for me and what it looked like, where it was observed and the extent of it somehow?

DR. FORD: And why did it buckle?

MR. BURTON: Why did it buckle? Do you want to get the story first and then all reaction to it?

MR. ROSEN: I'd like to know what it was. Start with that.

MR. BURTON: Okay. Anybody? Your side.

MR. VAN SANT: Bernie Van Sant. This buckling was part of the original fabrication of the concrete containment. It was identified as part of an inspection process. What exactly caused it -

MR. ROSEN: You still haven't characterized it. How much is it? Where was it? The extent? The circumferential extent? Was it vertical? Horizontal? Give me the details.

MR. VAN SANT: It was basically a bulge in the liner plate but my recollection is it was approximately six inches to 12 inches in diameter. It fell outside the half inch tolerance for containment.

MR. ROSEN: A bulge inward the liner plate.

MR. VAN SANT: Yes.

MR. ROSEN: From inside --

MR. VAN SANT: My guess is that you had it occur during the pour for containment that pulled that piece of the liner out slightly. John, I don't know if you remember how much. It wasn't a lot. We're talking a matter of inches.

MR. LEITCH: I read someplace in the

application it read as much as three-quarters of an inch. About an eighth of an inch had been predicted but in this area it was three-quarters of an inch, I believe.

MR. SIEBER: And that's been profiled so you can do the stress calculation?

MR. VAN SANT: The stress calculations were done for it. Basically this issue had to be addressed as part of current license basis.

MR. SIEBER: Usually you profile it so you can get the curvature. That's typical for that.

MR. FAIR: This is John Fair. I was reviewer on this and what they did was they redid the original evaluation of it with a buckle that was assumed a little bit greater than what they actually measured and did a fatigue evaluation and did determine whether that had any adverse fatigue effects on the liner plate and determined that they were well below the fatigue usage factor limit.

MR. BURTON: Section 4.7, these are the TLAAs. The SRP talks specifically about the ones that we've done up until now. Then in SRP that we take into account for other plant-specific TLAAs, this is what came up for Fort Calhoun: the reactor coolant pump flywheel fatigue; leak before break; high energy

line break and then this is the new pressurizer J-groove weld repair that we talked about before. In the final SER, we want to create a new section 4.7.4 to discuss that. That's all there is there.

MR. LEITCH: I had a question about leak before break. On page 4-30 of the SER, it says that "The applicant committed to perform a plant-specific leak before break analysis prior to entering the period of extended operation." Then later on it says "The applicant commitment does not appear to meet 10 CFR 54.21(C)(1) which requires that..."

Then it lists three things but the second one is that "The analysis has been projected to the end of the period of extended operation." It sounds like that's exactly what they committed to do. I don't understand what the problem was with it. I guess the problem has since been resolved but I just don't understand. It sounds like they committed to do option 2.

MR. BURTON: You are absolutely right. We can give you a little bit of background with that. Did you want to speak? As we were putting this together, the question came up "How are we going to issue a renewed license if they haven't given us the analysis that the Rule requires them to give us?"

Just promising to give it to us didn't seem to be appropriate.

What we did was we went back and looked through our guidance documents and I have a backup slide here. It's not in your package. What we found is staff has approved industry document NEI 95-10.

There is a section in NEI 95-10, Section 5.1.4 that gives guidance that allows for a deferral of the submittal of an analysis. It can be deferred but it gives guidance and says if the submittal is now going to be deferred, there is some information that are going to have to provide and it's these four things. In this case for the leak before break evaluation --

Wait a minute. I have the wrong slide up there. Hold on a second. I apologize. This is the one specifically for leak before break but I think I had more generic.

CHAIRMAN BONACA: You do. I believe it's two slides after -- In your normal package, you have it.

MR. BURTON: Is it?

CHAIRMAN BONACA: On page 57.

MR. BURTON: Fifty-seven. I have my slides all screwed up now. I've been flying through

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

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

MR. BURTON: Actually this is it. I'm trying to think more generically. What it requires is that:

1) They explain the methodology that they're going to use for the analysis;

2) They have to provide what is going to be the acceptance criteria to decide whether or not the analysis is adequate;

3) They are going to have to identify what the corrective actions they are going to be prepared to take if the analysis does not show what they expect it to show; and

4) Finally, they have to tell us when they're actually going to submit the analysis. In general terms, that's what that NEI 95-10 guidance says.

What I have here is their answer to those four things. In terms of methodology, leak before break evaluation will whatever the latest criteria, incorporate effects from all this stuff. So in terms of methodology, this is how their analysis when they submit it is going to be done.

The acceptance criteria that they're going

to use is going to be consistent with the leak before break evaluation procedures in the SRP. Corrective actions will include Tech Spec 2.1.4 which is RCS Leak Rate Program. Finally when are they actually going to submit the analysis? They are saying no later than December 2006.

These answers satisfy the four criteria that are in NEI 95-10 if you defer the submittal of an analysis. I had another slide that talked about that in general. That's what it is. So based on that guidance, they provided the information that we were looking for and we found that acceptable.

MR. LEITCH: Okay. I understand. Thank you.

CHAIRMAN BONACA: And then it will have to be reviewed and approved by the staff.

MR. BURTON: Yes.

CHAIRMAN BONACA: At some point in the future.

MR. BURTON: That's right. When we get this analysis, we're still going to have to go through and do what we'd like to do now but we'll have to do it then.

CHAIRMAN BONACA: One of the many things that like you said will come later.

MR. ROSEN: This one involves NRR though and not the regions but there's enough work for everybody.

MR. BURTON: I actually skipped ahead a little bit. I don't know how that happened. Oh, no, because we had a question about leak before break.

MR. ROSEN: Got you off your game plan.

MR. BURTON: That's all right. Let me back up a little bit to 4.7.1, Reactor Coolant Pump Flywheel Fatigue. Again no issues came up with this. They have two types of reactor coolant pumps. They have GE as well as ABB. So they gave us the information on the fatigue flywheel for both pumps. The reviewer who is not here today did do confirmatory evaluation of the fatigue and found it to be acceptable. In accordance with Option 1 for TLAAs, the current analysis is good for the entire 60 years. That was one.

The next one was the leak before break which we already talked about. The next one was high energy line break. No issues of consequence came up here. It was performed in accordance for the B31.11 Class I portions of main steam and feed outside containment. The 0.1 CUF criterion for the postulated pipe breaks. Existing pipe breaks are bound to Class

I sections for everything except the main steam connections to the isolation valves. For those, the CUFs at those locations they demonstrated will not exceed 0.1 during the period of extended operation. So basically there were no issues that came up here.

All right. That's pretty much it in terms of the staff's review. The next thing I want to talk about since this was the first GALL plant we went through a lot of this stuff. I wanted to talk a little bit about some of the Lessons Learned.

New LRA format reflects the new GALL process but we found pretty much from the very beginning that the format could use some improvement. I mentioned to you before that when the application was submitted in January and we gave it to the reviewers, they said "No, we have some problems here." It necessitated them to go back and make some revisions. They provided that in April.

Concurrent with that, we went back to the industry and we had some meetings with the industry to look ways to improve the format. As you know, Bill Watson is going to be talking about some of those format changes as soon as I'm done. So we saw that there were areas of improvements.

Most of these lessons learned, you are

going to really see them starting with the class of 2003, starting with Farley which is going to be submitted in September. But some of this stuff again because Robinson, Ginna, Summer, Dresden, Quad Cities were right in behind Fort Calhoun, you may not see all of this reflected in their applications because they were caught in the backdraft there. But we recognize that there were areas of improvements which we'll share with you.

This was not an issue for Fort Calhoun I should say but one of the issues we found was there didn't seem to be a common understanding of what is meant by "consistent with GALL". In fact when I was here and briefed the full Committee, I gave you the example that some applicants actually felt that it was appropriate to use engineering judgement when saying whether something was consistent with GALL.

Our understanding is if you have a component that was evaluated in GALL that has the same material, same environment, same plausible aging effects and managed the same way, that's consistent. What we found and a lot of times we found this one when some of the applicants came in to give the staff an initial overview of their application. We would ask "What do you mean by consistent?"

I think the worse case is we had one applicant that actually said "Consistent means we have the same component." That's it. It may have a different material. It may be exposed to a different environment. It may have completely different aging effects. But yet in their engineering judgement, they're consistent. We recognized right away we had a problem here.

Again we had some discussions with the industry. I think we're all now on the same page. You will definitely see that starting with Farley in 2003 that this issue has been resolved. But you may see with some of the applicants after Fort Calhoun some RAIs and stuff trying to better understand what consistent with GALL means.

One of the things that we tried to do was to more consistently document the staff's review. So one of the things that we did was we developed an SER template. As the reviewers started working with that, in general they found it helpful but again there were a lot of areas where they found that it could be improved. As part of our update, you're going to see changes to the template.

Basically what the template is is we tried to standardized some of the introductory language and

some of the concluding language because it's pretty much standard in terms of what our bottomline findings ought to be. So there is no need to reinvent the wheel.

Throughout this presentation we mentioned that we found areas where the GALL report and the SRP could be improved. We've identified that. The bottomline found that using the GALL format has results in some efficiencies in terms of the review. We've been able to accomplish that while still maintaining our safety focus. As I mentioned before, you're going to see most of these lessons and most of these improvement reflected in the Class of 2003 applications.

Also to mention, we had a workshop with the industry and part of that workshop we talked about some of the lessons learned that we had learned to date. Since then we've had some more but the ideas that we are a constantly improving organization and you'll see that in the coming months.

DR. POWERS: You want to say "a learning" organization. That's the appropriate buzzword in this group.

MR. BURTON: Okay, "learning."

DR. FORD: Butch, we've asked this

question before but I forgot the answer. Can you give us some idea when the revision of GALL is going to come out?

MR. BURTON: I will turn to P.T. for that.

MR. KUO: We plan to have a revision of these guidance documents including SRP, reg guide and GALL in September 2004.

DR. FORD: FY 2004.

MR. BURTON: Okay. Just as a summary. I'm sorry. Go ahead.

CHAIRMAN BONACA: Complete your presentation.

MR. BURTON: In summary, we've identified 11 open items, 10 which were identified in the SER, the one additional one with the pressurizer weld and four confirmatory items. Right now, all the open items are resolved with the exception of the big table revisions. We still have a few things that the reviewers just have to find the time to review.

CHAIRMAN BONACA: That's your review. There is no disagreement.

MR. BURTON: Exactly. We have reached agreement. We just need to make sure that they've actually implemented that. So basically everything except that one is resolved for the open items. For

the confirmatory items, all of them have been resolved. The bottomline is with our experience with the Fort Calhoun review we found that the use of GALL has made the task review more effective and efficient although there are areas where we can improve. We've identified those areas, factored them into a schedule for improvement of the guidance documents and I think you'll see things get even better in the future.

CHAIRMAN BONACA: A little more than a year ago, we used to have applications where we still had for example large numbers of appeals for changes. Now on this application, this is the first one with GALL and I found that there were no contentious issues. They were pretty much more a question of communications than anything else had to be resolved. Change is good I would say.

MR. BURTON: I would agree with that. I think where license renewal has advanced to the point where most of the issues have been identified now but more things can happen. In some cases, there was some contentiousness where we had to go to appeal. However, what we've done through the ISG process and well as more informal processes is that we have reached resolution industry-wide to say "Here's how we are going to deal with this situation" not only

technically but administratively too. We really are starting to see some of the benefits to that now.

CHAIRMAN BONACA: So this gives you the opportunity probably to do what Mr. Kuo was mentioning before by looking at a different approach to make it even more expeditious as far as the review which means when there is agreement with GALL, a quick review up front and focusing then the rest of the SER all those issues which are different from GALL.

MR. BURTON: Exactly.

CHAIRMAN BONACA: And hopefully licensee will tend to stay as far as they can with GALL because that simplifies the application.

CHAIRMAN BONACA: Absolutely. That's exactly what we're seeing and anticipating. Any other questions? Okay. Thank you. I appreciate it.

CHAIRMAN BONACA: I believe we have Mr. Emerson from NEI.

MR. EMERSON: This is Fred Emerson. Bill Watson from Dominion will be giving the presentation on standard format for NEI.

MR. BURTON: Dr. Bonaca, I think we need a couple of minutes. They're going to be doing a PowerPoint. They need some time to set that up.

CHAIRMAN BONACA: All right. Why don't we

take a 10 minute break. Off the record.

(Whereupon, the foregoing matter went off the record at 3:11 p.m. and went back on the record at 3:21 p.m.)

CHAIRMAN BONACA: Okay. Let's resume the meeting now. We have a presentation from Mr. Watson of Dominion regarding the Standard License Renewal Application Format.

MR. WATSON: Good morning. As already said, my name is Bill Watson. I'm from Dominion but I'm here on behalf of the industry to make a presentation to you on the Standard License Renewal Application Format.

Just one point of clarification, you heard today about the Omaha License Renewal Application Format and we're talking about standardization there. Largely the standardization focus was using the standard guidance of GALL and the SRP. What you're going to be getting a presentation on now is the Standard License Renewal Application Format that the Class of 2003 worked on. You will not have seen any applications under this format until September of this year when Farley submits.

CHAIRMAN BONACA: Do you mean that we have to have another training now?

MR. ROSEN: And also the implication is now we get one of these for each class. We get a new format.

MR. WATSON: I hope that's not the implication. What we'll see here -- Beyond convergence, exactly. We want this and expect this to be the last standard format to use. It does incorporate a lot of the lessons learned along the way. All of them that we could think of are incorporated at this point in time.

Just a brief history slide to get us talking about what got us here, the initial guidance that we know was 95-10 and a draft of the standard review plan for license renewal. That's what Calvert Cliffs and Oconee submitted under. It was realized of course that more improvements were needed in this area for the reviewers to get the information that they needed in order to made an accurate determination for reasonable assurance.

I should say this as well. GALL was issued and a standard review plan was issued. As plants and applicants started to use the GALL and started to use the standard review plan, it became quickly apparent that we were going to have to do some more work in trying to standardize how the information

was presented. Yes, we had standard documents to use for guidance on what goes into the application but how the application looked was really up to the applicant. We were starting to get a lot of questions from reviewers and so forth on how to interpret that data and where to find that data.

So the Plant X and Y demonstrate project was born in early 2001. Fort Calhoun was the Plant X pilot plant and St. Lucie was the Plant Y pilot plant. The NRC stated their preference to the industry that plants use the Plant X approach. As Butch said on his Lessons Learned slide and a couple of other times throughout his presentation, we realized that more improvements were yet needed because we were getting there in this evolving process but we weren't quite where we needed to be.

In July 2002, the Class of 2003, those applicants that plan to submit their license renewal applications in 2003 and early 2004, got together and under the coordination of NEI worked with the NRC staff and reviewers which we think was an important point of the participation by the reviewers to develop a standard license renewal application format for future applicants to use. That would improve both the format and content of the applications.

The Plant X and Y demonstration project concentrated largely on the tables in Section 3 but one of the lesson we learned was that's not enough. You need to be able to get from Section 2 to Section 3, from Section 3 to Appendix B, back and forward in a fairly smooth and innovative fashion. What we did with the Standard License Renewal Application Format project was we concentrated on Section 3 and developing the tables to present the data the way the reviewers needed to have that data presented. Then we went on to supplement Section 2 and Appendix B so that we would have that smooth transition.

Going forward from September of this year on, the industry expects to use this license renewal application format and urges the staff also to go with this format and not make any special requests for changes to that format. We would like to use this format and see how it works and get down the line before we start doing any kind of changes that are necessary.

As I mentioned, we first looked on Section 3 on the tables and then worked on Section 2 and supplemented as necessary to support Section 3 and Appendix B. But since that's the first section of the application you come to after Section 1, I'm going to

talk about that first.

Notice I titled this slide "Major Items". This is not everything we did but these are the biggest bang for the buck items. In the interest of time, I'm just going to cover those items today.

First of all, we included an intended functions, abbreviations and definitions table so that when we used intended functions throughout the application and we used their abbreviations in the tables, it would be clear understanding on the part of the reviewer what we meant by the original intended functions. If you go to your next slide in your package, you'll just a clip of one of the intended functions tables.

I would like to stress that for all of the examples for the Standard License Renewal Application Format, the format is what we concentrated on. The type of content we put in there so there's an illustration of what goes into the tables and what goes into the blanks within the application. The actual technical content is not something we focused on. So if you're looking through these tables and examples and say "I have one question on this particular technical issue", we didn't spend a lot of time on that.

I would say that each plant will have this table and it will be in the same section. So when you go from application to application and move forward, you will always find this table in the same spot. The content of the table will be different depending on the applicant's needs.

Going back to Slide 3, you'll see I bounces around a little bit just for the interest of saving paper again. The next item was a discussion of the applicant's approach to the ISGs tight up front. The reviewers told us that Ginna had done that and they found that to be very beneficial.

So we incorporated that into the standard license renewal application Format. You will see in Section 2.1 a section discussing the applicant's approach to ISG right up front. Then you'll see it also individually talked about in the programs for the scoping and screening where those ISGs have their largest impact.

MR. LEITCH: As I understand it, ISGs are going to go away. Is that right? A temporary thing.

MR. KUO: After we revise the GALL SRP documents, the ISGs will be incorporated into those documents.

MR. WATSON: Right. At that point in

time, this section will just be empty basically because it's not needed. But for now it is needed and we want to standardize where the reviewers find it. What we think would be helpful is if the reviewer does an application and then they go on another application or even the project managers can help with this, they will know where to look for things because each application will have the same content in the same location. That's what we're striving for.

The third major item for Section 2 is we enhanced the system descriptions to identify which specific criteria of the Rule required the system to be in scope. That's 54.4(a)(1), (2) or (3). That also included system evaluation boundary descriptions. So you can look at the drawings but also it's clear in terms in a verbal description where the boundaries of this particular evaluation or AMR really are located.

Then we included a table. This is not new. I put that in parentheses. Applicants in some way, shape or form had a component subject to AMR table but we put it in a very specific section, Section 2. It lists the components that are subject to AMR and their intended function. This is the key to connecting Sections 2 to 3.

If you look on the next sheet on page 5 in

your handout, you'll see a clipping from one of those tables. It's our example that we use because of the data that we had readily available to us at that time was actually an engineered safety feature system not an RCS system. It was an engineered safety feature system and we used containment spray for that. That's what you'll see for data throughout the examples of the standard unless it's a new application format.

Just to point out that, you can see on the left column that you have component type and on the right you have intended function. Heat exchangers, piping, pipe casing. I'm pointing that out now because when I get to Section 3 you'll see the tie between Section 2 and Section 3 which is readily available data.

To get back to Slide 6, we also included a results table usage and description and reference to those tables. I'm sorry. I jumped ahead of myself a little bit there. So that was Section 2 and those are the major items at week two of the Standard License Renewal Application Format.

Then we went on to Section 3 and that's what this slide number 6 addresses. The first thing we did was we included an internal and external environments table. We found out that there was

confusion sometimes external air or gas and what do you mean by all of that. So we decided to include in the application a definition of the internal environments and the external environments. If you go on to slide 7, you'll see an example of the internal environments and what do we mean by internal air, gas, lubricating oil, raw water, sea water. On the next slide, you'll see an example of equipping from the external environments table, borated water leakage, soil, external air. That's all included.

Again you will not see identical information in tables from application to application but you will see in both of these tables in the applications going forward for Standard License Renewal Application. That clarifies what we're talking about with the environments and helps eliminate a number of the questions that we've been getting on those.

Back to slide 6, the next piece we put in was a results table usage description. What we ended up with which you'll see at the bottom of the slide two tables. I know Fort Calhoun talked about three tables. In fact, it's interesting. When we were developing the tables for the Standard License Renewal Application Format, we agreed that table 1 which

looked like NUREG-1801, Volume 1 would be reasonable.

Then the staff members and the utility folks went off and developed what they thought the actual AMR results table should look like. Then we came together. When we came together, the tables were remarkably similar. So it was very easy to combine those two into the final table that you see as table 2 in this section. What that tells me is that we were both listening to each other pretty well about what was really needed, what the reviewers needed and what we needed to provide.

What was asked for by the staff was if we could at least for the first few applications put in a description of how these tables are to be used so we put it in the Standard License Renewal Application Format. Where does the data come from? How do the tables work with each other? How do you cross reference back to GALL? So we did. We put it standard section. It takes up a few pages but they thought that would be beneficial to future reviewers and also beneficial to the public when they look at our applications and they don't know how to interpret these tables. Now there is a section in there in pretty good detail on how you use these tables. What do they mean? What does the data mean?

MR. ROSEN: You only need to write once well.

MR. WATSON: Right.

MR. ROSEN: So that's it.

MR. WATSON: That's right. Then what you find is the next major section in Section 3. It's AMR results divided into the six SRP "Super Groups". When I say "Super Groups" that means of course RCS, ESF, auxiliary system, steam power, conversion, so on and so forth.

So the AMR results are divided into six Super Groups and then into their individual systems, structure and commodity subgroupings. For the case of the standard, we had EFS as our Super Group that we used for the example. Containment spray system was the individual subgroup that we used in our example.

For each subgroup, we were asked to do this also by the staff and the reviewers to assist them in getting a good characterization of the individual subgroups and also in getting the information that they need for the SER brought into one location. So for each subgroup, you're going to see as you see on the fourth bullet a roll-up section of the materials, environments, aging effects requiring management and aging management programs.

Notice I said programs are by name but they are also hyperlinks. They can go right out to the program for each one of these subgroups. Then that can be taken and placed into the SER for use by the reviewer.

Then of course the real heart of Section 3, the aging management review results tables. There are two tables. Table 1 is a NUREG- 1801, Volume 1 style table. Table 2 is a plant-specific AMR results. I would like to go and talk about both in just a bit more detail.

Table 1 is based on NUREG-1801 table. In fact, it really is GALL Volume 1 table with just a couple of modifications to it. You see down below that there is an item number column which is an added column. When you look at this table, it really is the table right out of GALL. Components from Section 2 are rolled up using the same SLP table format to provide a leakage to or exception to the SRP. So wherever there's something in the GALL Volume 1 table or the SRP table, you will see a match when there's alignment of any sort in this table 1 of Section 3.

The item number column we added just to facilitate cross- referencing between Chapter 3 tables. I'll make that more apparent what that really means in another couple slides. Then we added a

discussion column for clarifications and explanations regarding the alignment with GALL. So this is really a summary table. It's not the individual results of virtually everything but it's a summary table of how we align with GALL in a sense.

If you will go on to slide 10, you'll see a picture of that table. Item number is all the way over to the left. That was just a tracking number again. It allows reference from table 2 to table 1. Obviously it has the table number 3.2.1 and then the first item is .01. The second item's .02. The third item's .03.

For the Standard License Renewal Application Format project, we used PWR data. So when there's BWR in order to keep alignment with the GALL Volume 1 table, we would put BWR only when we had no data for PWR. So that's why you see that in this table. But really the reviewer could take the GALL Volume 1 table, take our table 1 in Section 3 and just go down line by line and make a comparison. They are aligned that way.

Like I said, we have the component listings, the aging effect/mechanism, aging management programs, further evaluation required if there is further evaluation required as is stated right in GALL

Volume 1 and then a discussion column. The discussion column lists first of all further evaluation required information. I'm going to talk a little bit more about that later. In other words, how we addressed the further evaluation required as was talked about for Fort Calhoun? Then any other discussion about how we align with GALL. That's a summary table.

Then we go on to Table 2 which is your next slide where the actual plant-specific AMR results are contained. This table 2 provides AMR results divided into the six Super Groups as you expect and then into the individual systems, structural or commodity subgroups.

It contains nine columns so we went from five or six columns up to nine but that should make sense. Obviously if we were having problems with a five or six column format tables getting all the data that was needed, we were going to need something else. That's how we ended up with nine columns.

It provides a means to cross-reference to table 1 that you just saw of our application, to cross-reference to GALL Volume 1 and Volume 2 tables and also to LAR Section 2 and to Appendix B. So these tables integrate basically all the data either by a reference or with the data that's directly contained

within the table.

It also contains a "Notes" column for referencing. There's not actually notes contained in that column. That's why the wording is like this. It's a letter or number designator. I'll talk about that in a little bit because obviously a lot of information could be contained in that column and these tables could blow up pretty big. I'm going to talk a little bit more about the Notes later. The Notes explain how you align with GALL. You're either completely consistent or you're have exceptions and here are the exceptions.

If you go on to slide 12, you'll see the table. I'm going to through the nine columns very quickly here but the first one here being component type, heat exchangers (shell). Remember I said "We were linked to Section 2." This column links us to Section 2. If you go back to slide 5, you see heat exchangers (shell) is the component type. Then when you look at this table here, you see that as the actual component. So there's direct linkage between Section 2 and Section 3 through this table.

Of course, the intended function even listed on the last slide that I showed you is pressure boundary. There's the abbreviation for it. Material

in this case for the example is carbon steel. You see the environments are listed. Again effects requiring management, aging management programs. In those aging management programs, that magenta indicates a hyperlink so with the reviewers doing the electronic reviewing of the application they can go right to the aging management programs. So any time you see magenta, it indicates a hyperlink.

Then there's the NUREG-1801 Volume 2 item. What this indicates in this very first row is we have a correspondence between GALL and the data you see from the plant-specific row here. Then Table 1 item column and then a Notes column. The Total number item column is how you reference back to table 1. If you click on the 3.2.1- 10, that table item on that very first item, it would bring you back to table 1. If you are doing a manual version, you could just go look that back up. But you see that in table 2, it's heat exchangers in component, pressure boundary. The material's carbon steel. The environment's air. The aging effect requiring management is loss of material. The aging management programs is system walkdown. If I go back to table 1 using that item number reference, you will see the 3.2.1-10 right there up at the top, the very first row. It is external surface of carbon

steel components, loss of material due to general corrosion. Loss of material is the Aging Effect. The aging management program is plant-specific. Further evaluation is required.

Notice in the discussion column it identified what the plant- specific program was, system walkdown, which also corresponds with table 2. The further evaluation required section were hyperlinked to as well to talk about how we address that further information that might be needed by the reviewer to do that further evaluation. You can see the tables are fully integrated.

Then the Notes column, it just has letters or numbers in it. The letters indicate industry standard notes. The applicants are not required to use industry standard notes but we recognized as we were putting this together that obviously there would be a number of repeats from applicant to applicant when you start describing how consistent you are with GALL.

If the aging effect, the environment, the aging management program and material was all consistent, then you'd obviously be consistent with GALL. So every one is going to have a note like that. You might be consistent with GALL on everything but

the aging management program might take an exception to GALL so there would be a standard note there. If you see letters in the Notes column, that indicates to you that it's an industry standard note. If you see numbers, that means that the plants themselves had to come up with some additional clarification on how they align with GALL.

The threshold holds very well on this alignment with GALL when we talk about that. I know it was talked about earlier today too. Even to the point where if you do a different revision to a document that was put in GALL if GALL evaluated that document and that document was an earlier revision when GALL evaluated it, we're not saying we're consistent. We'll say that program is consistent with exceptions. And we'll say we're using a later version of that document.

We're not going to mislead any reviewers at all. The threshold is low. If you are not just like GALL, then you're not consistent. If you have some kind of exception, you have to explain that. That's what the staff told us they needed and that's what we put in the standard.

If we move on to slide 14 continuing with the rest of the major modifications we made to Section

3, there's a Further Evaluation Recommended section. The GALL Volume 1 says "Further Evaluation Recommended" and the SRP also has that same column since those tables are nearly identical. We understood that the reviewer would need to have some information in order to do that further evaluation. So what we did was anytime the GALL or SRP table said "Further Evaluation Required" yes for a matching item, we have this section back in Section 3 that talks about that Further Evaluation item and identifies what we feel is all the data that's necessary for that reviewer to make their evaluation on that.

You will notice that there's a second bullet. If it's a TLAA you get referenced out to Section 4 of the application to look at that TLAA if that's the only further evaluation that was required.

I would also mention just to make things even easiest, we ended up using a numbering scheme in the Standard License Renewal Application such that if the reviewer had the SLP open and was going down the SLP table and there was a further evaluation column yes and it referred you to a section of the SLP, it's a numbering scheme that's identical to the section of the SLP. So you will find the same numbering scheme and the reviewer knows they have direct match between

the SLP and our explanation for that further evaluation required. That just makes it even easier to see the correlation.

There's a time limited aging analysis section.

DR. FORD: Could I ask a question before you get away from the AMPs?

MR. WATSON: Sure.

DR. FORD: I take it the GALL is the bible, is correct. Yet in recent license renewal application, you had questions. For instance, David brought a question of phosphate on concrete. I brought up a question of validity of one-time inspections for instances for corrosion. How compliant is this approach looking forward to take into account differences in opinion as to the validity of how you're attacking what is in GALL?

MR. WATSON: I think the best way to answer this and I'll call on my colleagues to help if I don't answer it completely is that I think each applicant looks at the issue in front of them and describes what their approach is to that particular issue. Then the reviewer or evaluator can make their assessment as to whether that meets their requirements in terms of what was intended by GALL or whatever the

case may be.

DR. FORD: But the licensee will not take the initiative if you like in making sure that their application is fully technically correct. You will just take GALL as the lowest common denominator. Is that correct?

MR. WATSON: Go ahead, John. I know you want to say something.

DR. FORD: Do you understand what I'm saying that this is an evolving issue?

MR. RYCYNA: I'm John Rycyna. Any applicant preparing a license renewal application is going to do an aging management review and come to their conclusions regardless of what GALL says. If you match GALL and you agree with the GALL conclusions, then you're going to document it as Bill described in table 1. If you disagree with GALL, you're going to document those conclusions.

DR. FORD: But I have the impression you may disagree with what - - you put in a chrome-containing alloy steel. Therefore the fact will go down across the corrosion. So you are getting relief when you say you give them exemption when you go down the way. Your examination should be more rigid, more complete.

MR. RYCYNA: The applicant's engineers are going to come to their conclusions. They are not going to accept a conclusion as valid just because it's in GALL.

MR. WATSON: Right, I think I heard you say unless I misinterpret it that if GALL says something more minimal than we think is even needed and we feel you need something more, we would be obligated to put that in as part of the program.

DR. FORD: Okay. So you would be obligated to take the initiative.

MR. WATSON: If we thought we needed it for aging management.

There's a time limit aging analysis section which identifies the TLAAs associated with the Super Group and then references you out to Section 4 for further information associated with that. Then there's just a general conclusion section about the ability of the programs to manage the effects of aging for the period of extended operation. So that's Section 3 and the major changes we made to Section 3.

Now I'd like to talk about Appendix B. Appendix B is actually divided into four sections. I didn't put that on this slide but you will see as we go through that there's an introduction section, aging

management program section, TLAA aging management program section also called data support and a reference section.

The introduction section which is included on this slide has an overview component which just gives you kind of a road map for how you get through Appendix B. There's a method of discussion subsection. I will talk about that in more detail because there's a point of clarification we need to bring out. Butch alluded to it a little bit earlier this morning and I'm going to expound on that in just a bit. Notice that it's with reference to what we mean by consistent with GALL, consistent with exception or plant-specific. I'll talk about that in just a few minutes.

Quality assurance program and administrative controls description section. It was mentioned earlier also by Butch that what Fort Calhoun did was put up front a description of our quality assurance approach to license renewal if I understood this correctly. This is what the Standard License Renewal Application does for sure.

Administrative control is an approach to license renewal as in GALL. Within that under the quality assurance are a corrective actions piece. So

that we don't have to repeat it in virtually every program, the same thing over and over again if you look at GALL, pretty much that's the way it goes. Corrective actions is corrective actions in administrative controls. We accepted that and put that up front.

Then there's an operating experience section. What we use this for is just to really focus a little bit with the aging management review. Extrapolating experience and plant-specific operating experience was used to do the innovative plant assessment.

Here we like to focus the operating experience on the programs to show if the programs are working. What enhancements are needed to the programs based on operating experience? What you're going to see is more of a program focus to this operating experience. That's what we believe was intended by GALL when we read the operating experience. We set that up front.

Then there's the aging management programs list. It identifies which programs are new for license renewal and what one were already existing at the plant. It's listed in the alphabetical order just for the reviewer to reference more easily.

Continuing on to the next slide, there is a TLAA management programs list that follows the regular aging management programs. Then there's the list of aging management programs correlated to GALL. It's in the area of GALL so in the left-hand column it lists the GALL programs in the order of GALL. In the right-hand column, it lists the plant-specific match-up so that helps the reviewer see if they are reviewing programs how we aligned with GALL and what programs satisfy which GALL programs. Then after that you would see of course just the plant-specific where there is no alignment to GALL so first is the alignment and then the no alignment.

Then the aging management programs section gives you your aging management programs descriptions and includes the TLAA aging management programs with the three that are hitting GALL basically under that.

I just want to spend another couple minutes talking about this method of discussion section. What the method of discussion section does is it defines for the reviewer what they can expect to see when they're reviewing the programs when they look at the data that's in Appendix B of the application. Remember there are three conditions we talked about: that the aging management program is consistent with

GALL; that the aging management programs is consistent with exception to GALL; or that the aging management programs is just a plant-specific program.

If the engineering program is consistent with GALL or even consistent with exception, it will have the following subsections. There's a program description which you'll see even in plant specific programs. There's a NUREG-1801 consistency statement which in the case of where it's consistent with GALL it's just going to say it's consistent. We were trying to standardize this outline format for Appendix B. Exceptions to NUREG-1801 are defined. In the case of being consistent with GALL, there would be none. There is enhancements again, operating experience and conclusion.

That's what you'd expect to see when the aging management program is consistent with GALL. There would not be element descriptions when a program is consistent with GALL because all we'd be doing is saying the same that GALL says wasting a lot of paper and not benefitting anybody.

DR. SHACK: I wouldn't expect to see exceptions to 1801.

MR. WATSON: Under this particular one, we just wanted to standardize our approach whether we

took exception or not just so the sections are the same so we wouldn't confuse the reviewers. You're absolutely right. There would be no exceptions when you're consistent with GALL. I understand that could be confusing.

CHAIRMAN BONACA: Would you have enhancements?

MR. WATSON: You could have enhancements.

MR. ROSEN: What does that mean like better than GALL?

MR. WATSON: No, not necessarily. There could be cases where you did something a little bit different than GALL just to make it a little bit better. But more often than not, you might say "In order to be consistent with GALL, I'm going to need to make these changes to my program and then I'd be consistent with GALL." Those would go into your commitments. That would be an enhancement to your program.

If the aging management programs have some exceptions that's described to the one that's described in 1801, you're going to have the same sections as above. But what's really important and I think this is the real benefit of this change in format is if you're not consistent you will stay where

you are not consistent exactly and then what exceptions you're taking to GALL if you're taking any. But that's not enough.

What we've done is we've actually stated that in terms of the program elements affected. We figured that when GALL was developed these ten elements or attributes which ever document you're referring to were used to evaluate the programs. We are using those exact same elements to evaluate these programs when we're not exactly consistent with GALL so that the reviewer can say "Okay, there's a change in the confirmation process. There's a change in the detection of aging effects." So we describe what the exception is and then we provide the element descriptions so that the reviewer can make an assessment of whether they feel this is adequate or not.

It's the same with enhancements. We don't just describe an enhancement. We describe an enhancement in terms of the program elements that are affected by these enhancements. Then there would be the operating experience and conclusion sections.

We wanted to make sure that was clear because that's going to look different than what you've seen today. It's going to be more than some of

the applications that you've seen up to this point in time but it will not be ten elements for every program regardless of whether they are consistent or not because that's just wasteful.

If the aging management program is plant-specific on the other hand, then you will see the program descriptions as I mentioned and all ten program elements will be described. Any enhancements that are even being made to the plant-specific program in order to be adequate for the period of extended operation will also be expressed in terms of program elements affected. Notice there's not an operating experience section here because that is one of the ten elements that you find if you did the evaluation that way.

Then there is a conclusion about the ability of the program to manage the effects of aging for the period of extended operation. We believe this type of approach in Appendix will really help to take maximum advantage of GALL and approve efficiency for the reviewer and get them all of the information that they need.

In summary, we believe that the proposed standard format is intended to promote review efficiency with a systematic integrated across

sections presentation of system, structure and component aging management review data. In addition, the information that can be directly used to develop the SER is consolidated in specific locations within the application just to make that easier for the reviewer.

In short, we took all these lessons learned that we heard from the reviewers and put them into this standard application. We believe there's going to be some real advantages to this. It's a real efficient document.

CHAIRMAN BONACA: Good. Anything that can simplify the process, that's great.

MR. WATSON: Questions.

MR. LEITCH: My question is really for the staff. What is your impression of this? Do you have to review this or do you just encourage it or what's your regulatory position?

MR. KUO: Actually, I was just going to make a remark. This is no longer the proposed standard format. The staff has completed this review and endorses it.

CHAIRMAN BONACA: And we have already received training. Right now. I think it was somewhat different from what we've seen for Fort

Calhoun but I can see how it builds on that. It's a further step towards a standard format.

MR. WATSON: Thank you.

CHAIRMAN BONACA: Now just before we adjourn, I would like to just go around the table and see if members have any specific comments regarding the Fort Calhoun application. I will start with you, Vic.

DR. RANSOM: This is one of my first introductions to license extension. I think most of the issues that I had a concern with were answered in the discussion. Generally it seems like this whole process is one of a qualitative examination of a plant for license extension to more or less assure that it meets somewhere close to the original design basis.

I still have a little bit of concern that I think was expressed by some of the staff here earlier that what has happened to the original safety margin. That margin was presumably selected to result in a 40 year life time. It would seem that there are some situations where the margins of safety must be less than what it was intended to be originally. It would be nice to see some way of quantitatively addressing that. I don't know if that's possible.

CHAIRMAN BONACA: The regulatory margin is

not supposed to be reduced.

MR. KUO: The first principle of the license renewal rule is that the current licensing basis is adequate to maintain the safe operation of the plant with the exception of detrimental effect of aging.

Then the second principle is that this current licensing basis shall be maintained throughout the extended period of operation. Depending on how you define a margin in terms of safety of the plant, the current licensing basis that defines it. The licensee is obligated to meet the current licensing basis.

CHAIRMAN BONACA: Graham.

MR. LEITCH: Yes, I guess I had one question that I forgot to ask earlier. License conditions, are there any other than the standard license conditions that you foresee in this at the moment?

MR. KUO: I think recently we added one more license condition. We have asked all the new applicants to provide us a list of commitments. We now include that list in our SER. They are including the list in their FSAR supplement. Then we also include that list in the Inspection Procedure 71003.

So the new license condition is that when they finish any items on the commitment list they will let the NRC staff know so that the NRC staff can go out and perform the inspection. This raises the question of how do we know 10 or 20 years after the renewal license is issued and it potentially could happen that nobody remembers it.

MR. ROSEN: The way you said that was great. It just seems to me that there is one nuance that could even improve it. You said "You now have a requirement for them to let you know when they've completed the commitment."

MR. KUO: Correct.

MR. ROSEN: Wouldn't it be better to have a requirement for them to let you know when they were going to complete it, for instances, if they were going to do a test in six months or three months? That way you could prepare yourself, headquarters and the regions to be participants rather than finding after.

MR. KUO: This has to go to the bureaucratic language versus the regulatory requirement. We don't have such a regulatory requirement.

MR. ROSEN: That's just my thought. It

would be better to participate than be advised after the fact that a commitment has been made.

MR. KUO: Yes. Understood.

MR. LEITCH: I guess generally I had a number of questions but I think they were all satisfactorily answered between the staff and the licensee. I appreciate their presentations. I guess I expected to see a little more improvement in the efficiency of the process with the first GALL. I thought there might be a step change I guess is what I'm saying.

I think we're gradually improving the process. Some of the benefits that we'll see from GALL are yet future. I didn't see a whole lot of efficiency, quality. I'm talking about efficiency of the process. I didn't see a great improvement in the efficiency of the process yet. I see a lot of places where there will be improvement in efficiency. This standardized format that we talked about will be another significant improvement. I guess I had perhaps over optimistically thought we would walk in here and see a major step change of the efficiency of the process.

One of the things that I guess we have to decide at this point is whether an interim letter is

appropriate. I for one see no reason for an interim letter. That's about it.

CHAIRMAN BONACA: Thank you. Steve.

MR. ROSEN: I don't have anything to add.

CHAIRMAN BONACA: Okay. Tom.

DR. KRESS: Well once again we serve as an audit function to see if the staff is doing a good comprehensive job. My impression was this was another fine comprehensive job and I see no disagreements I have with what the staff findings are with the one possible exception of your issue with the spray nozzle. I haven't made up my mind on that one but we'll hear from that one later.

I think it was a good job. I do some efficiencies by following the GALL format. I thought the input from the industry was significant on the standard review plan. Both of those will make for this a more efficient process. I'm really encouraged. The license renewal process is on a good track. I agree with the staff with after they close the open items that this particular extension should be granted without any problems.

CHAIRMAN BONACA: Yes, the spray by the way there was a separate conversation and I was told that the licensee will update documentation. With

staff, we recognize that they are still relying on the spray function. It can be accomplished without a spray head to provide the cooldown necessary in 72 hours which I believe is possible.

That still remains however as a mission of the staff and they should really reflect on and give us some views of are all systems created equal. You have means that you can credit at times but they're not necessarily the optimal one. Should any one of those means be used to justify not replacing or monitoring a component? That's an important issue.

MR. KUO: That's part of the staff review. During the break time that Muhammad told you that we have talked to them already. For the future review, certainly we will look at all the options that's available. For this particular one, we're going to incorporate whatever the information we received from the applicant into the full issue.

CHAIRMAN BONACA: But at some point I would like to see if you on a couple of items would send guidance on what you would do. You may have still again some backup approaches for doing some of these kinds. It may not be really the one that you want to see affected in a plant that is supposed to meet all the licensing phases.

DR. KRESS: I agree with Graham that I see no reason for interim letter.

CHAIRMAN BONACA: Dana.

DR. POWERS: Of course the license renewal process has been put together very well. I hate it miserably because I can't harass Butch about anything. He did too good of a job.

MR. SIEBER: He makes stuff up.

DR. POWERS: There's no question about it. It's still an extraordinarily labor intensive process. So the challenge this Committee needs to start thinking about is are there technologies that are available now or will be available in the future or anticipated to be available in the future that will ever get rid of this labor intensiveness.

The staff is just about milked as much out of it as it can through formalism and process and guidance. Undoubtedly you can keep refining it a little bit here and there but you're not going to make the big leaks and bounds in the labor intensiveness. Then that's something that the Agency has to look at.

DR. KRESS: I think it's self-correcting. We'll run out of plants to extend the license to.

DR. POWERS: That is true but we may get to the last one just as it happens.

CHAIRMAN BONACA: That's a very good point.

DR. POWERS: We have to inject some more fun into these things.

MR. ROSEN: This is where you were headed. I really did think you were headed towards asking the question. What can ACRS do to limit our man hours?

DR. POWERS: It is clear that the ACRS has invested heavily in the license renewal area. It has been for at least four years. But we're kind of stuck because it's a statutory function for us so we had to do it. Now it's been a pleasant exercise in the sense that it was very well organized from the start and it's shown a continuous improvement.

But I think we've gotten to the end of our string here. I just don't see anything in the offing that gives us great strides here in the next couple of years on this stuff. Maybe it would be kind to sometime get together with the staff in a more collegial sense and just kick around "Is there any new technology with a little bit research to be brought into this thing that would make it better"and perhaps even talking with NEI and people like that. Are there things that we can do that are radically thinking out of the box because this refinement we've taken it just

about as far as we can.

CHAIRMAN BONACA: Some thoughts. There are some classes of more recent plants, such as Westinghouse four-loop PWR with 3400 megawatt thermals. There are so many similarities. If that's true however you always get defeated when you get to the balance supplied.

DR. POWERS: If we're claiming to be risk-informed if the one thing we've learned from risk analysis is I don't care how similar the plants are, the risk is always dominated by the differences and the unique plant-specific features. So saying that's risk- informant I don't think buys us any here. I think we've pushed that just as far as we're going to.

CHAIRMAN BONACA: By the way as far as the ACRS is concerned, I think this new format at least in the beginning was even more challenging because they had to go back to GALL.

DR. POWERS: Your old dogs and you're hard to teach new tricks. That's all there is to it.

CHAIRMAN BONACA: On an application, we had all the information there.

MR. SIEBER: Now you have more binders.

DR. POWERS: We talked about that and I think Vic here hit it on the head. License renewal

has become a discipline in itself. You have to get a four year college degree to be all the background information just to read the application nowadays. That's absolutely and that's probably a good thing. It keeps Butch employed and off the streets at night. It's an investment that the Agency probably just can't keep. It's not that they can't do it. It would nice if we could find a way to do it in a more efficient manner. I just don't see anything on the horizon right now. This is worth brainstorming a bit about.

MR. ROSEN: For both the staff and the Agency.

DR. POWERS: Oh, yeah. Everybody has this cost. The licensee has this cost. We've done about as much as we can.

CHAIRMAN BONACA: And the industry has made a major effort.

MR. ROSEN: You tell me it's statutory. That means we have to go and get the Atomic Energy Act changed to something. I'm not sure that's right. I just wonder if we don't have more flexibility than that.

DR. POWERS: It's because you're young and inexperienced.

MR. ROSEN: The latter, true.

CHAIRMAN BONACA: Peter.

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

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

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

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

DR. FORD: When, where and why.

CHAIRMAN BONACA: Jack.

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

which I think is pretty good.

I agree we don't need an interim letter. There isn't anything that we could say that won't appear on the record here anyway. There were a couple of noteworthy things. As you read through the application and the SER obviously to each of us comes questions to mind about various issues that are identified. I found that the resolution of those questions was clearer in this SER than perhaps some previous ones.

When I was done, I had a shorter list of things that I didn't understand. The only thing that I truly was buffaloed on was the blowpipe which we used to call spare penetration. So I scratched the few hairs that I have left trying to figure out what that was.

I would like to look at a little bit the efficiency aspect. I'm selfish enough that I never even thought of how hard the staff works or the licensee works and I concentrated only on how hard I worked. We fill out timesheets so I looked at the timesheet on this one compared to the timesheet for some previous plants and either I'm getting smarter or the process is getting more organized or the SER and the application were better written. But I actually

spent maybe 20 percent less time on this one or 30 percent maybe than I did on for example the Hatch plant which to me was the most challenging one for me to do.

So I would say that things are getting more efficient from our internal ACRS viewpoint but perhaps not the staff because they're inventing process as they go along. On the other hand, I think that they are more complete now than they were previously. To me that's an improvement in the program. I think the whole thing was very professionally done. I have no open issues to identify to you.

CHAIRMAN BONACA: Okay. And from my perspective I can only echo what you said. I felt that the application was clear. I think more than anything else to me it has conveyed a real effort on the part of the applicant to meet the requirements and to close the issues. That was positive because that's going to set the stage on whether or not applications are going to be approved more promptly.

You may remember a year or a year and a half ago there was a lot of contentious issues. The relevance to that is when you have all those contentious issues you just need a lot of effort to

converge. This converged well.

So far as the open issues, many of them actually had to do purely with a need for the staff to review them yet not necessarily a disagreement on the closure. I found the SER very well written and I must really compliment Butch for his level of knowledge in the presentation. It was very informative. It didn't put any of us to sleep which was something to be said.

I heard from Mr. Kuo that they're attempting to see another step change in the efficiency of the process. So as Dana said, we're looking forward to any efficiency you can bring to the process.

MR. KUO: That's what we've been doing but we haven't really completed yet. We are an organization to tell the truth and we constantly think of ways to improve our efficiency in the process. Now especially we thought that we were going to cap the number of applications and given time at eight. But it looks like it's not a go. We actually are looking at a budget for capping to 10 or capping to 12. As long as we are getting more applications, we have to think of smarter ways to handle this type of application now.

CHAIRMAN BONACA: But I would like to say

one thing. Much of what we are spending time in the past year and a half reviewing is always the same issues, fans and housing and cooling houses and 2/1. They are the same debates and issues raised again. To the degree to which these issues are converging and people are agreeing from the applicant, I see much less substantive issues. That's comforting. It's going in the right direction.

MR. KUO: It's my dream, maybe it is a dream, that a couple of years down the road all the applications will be at least 90 percent consistent GALL. Then the process will really improve there. We will spend relatively little time in reviewing the applications.

CHAIRMAN BONACA: That will help. With that, unless there are additional comments.

MR. LEITCH: Just one quick comment. One of the things that we sometimes try to do is give the applicant some guidance as to what would be of interest to us when you come to the full committee meeting. I'm not sure what the date of that is. A couple of months in the future, I guess.

One of the things that I like to hear about at those meeting is what the plant's position is as far as how to maintain these commitments. How they

are going to be scheduled and tracked? In other words, when you get the license renewal, that's really not the end of the game. It's the beginning of a long process. Over time the plant will be modified. How are those modifications factored into the program? How is the program maintained current? How are these various commitments going to be implemented?

Just perhaps a word or two about the staffing. Is there someone whose mission in life is to see that this program follows through from now until the end of the 40 year period and beyond? That kind of what I'll call the "implementation" after license renewal is granted, that kind of issue would be interesting for me to hear at least at the full Committee presentation.

CHAIRMAN BONACA: Any other comments.

MR. GAMBHIR: I certainly very much appreciate the positive comments that you made about the application and the SER. I do want to take a minute here to thank Butch. I think he is the one who worked very hard in driving us to the standards to make sure that we got to this point here where you saw the ownership from the reviewers when they were talking about it because I'm aware of the discussions that took place earlier but today they had the

ownership. Our job was to provide that information.

Also in putting together the application, the help we got from a very experienced staff that we have here from Fort Calhoun as well as CNS and I'll also say the NEI staff that worked very well with us on this thing, all of this has helped us in bringing a quality application to you.

With respect to implementation, I do have an action item defined for the plant. That's how I think because this is an implementation. This is the beginning. This is not the end. You got a piece of paper. That's only a license to keep going.

Mr. Kuo and other being on the license renewal they have been extremely helpful. We're certainly look forward to the full Committee meeting. Hopefully you get that scheduled in October so we can get the license renewed. The time is not scheduled. We certainly appreciate your help in delivering this too. Thank you.

CHAIRMAN BONACA: Thank you for your exaltations and any other comments.

DR. POWERS: Well, just one. People keep saying good things about Butch. He's going to get a big head and we're not going to be able to live with him.

CHAIRMAN BONACA: I know.

DR. POWERS: Just wait until the full Committee meeting comes.

MR. BURTON: You're relentless. Do you know that?

CHAIRMAN BONACA: With that, the meeting is adjourned. Thank you.

(Whereupon, the above-entitled matter was concluded at 4:27 p.m.)