Official Transcript of Proceedings ACRST-3169

NUCLEAR REGULATORY COMMISSION

ORIGINAL

Title: Advisory Committee on Reactor Safeguards
Plant License Renewall Subcommittee
Turkey Point Units 3 and 4 Application

PROCESS USING ADAMS
TEMPLATE: ACRS/ACNW-005

Docket Number: (not applicable)

Location: Rockville, Maryland

Date: Tuesday, September 25, 2001

Work Order No.: NRC-031 Pages 1-272

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1323 Rhode Island Avenue, N.W.
Washington, D.C. 20005
(202) 234-4433

TR04

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

PLANT LICENSE RENEWAL SUBCOMMITTEE MEETING

+ + + + +

TURKEY POINT UNITS 3 AND 4 APPLICATION

AND RELATED WESTINGHOUSE TOPICAL REPORTS

+ + + + +

TUESDAY

SEPTEMBER 25, 2001

+ + + + +

ROCKVILLE, MARYLAND

+ + + + +

The Subcommittee Meeting was called to order at the Nuclear Regulatory Commission, Two White Flint North, Room 2B3, 11545 Rockville Pike, at 8:31 a.m., Dr. Mario V. Bonaca, Chairman, presiding.

PRESENT:

DR. MARIO V. BONACA, Chairman

DR. STEPHEN L. ROSEN, Member

DR. WILLIAM J. SHACK, Member

DR. F. PETER FORD, Member

DR. NOEL F. DUDLEY, ACRS Staff Engineer

I N D E X

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

(8:31 a.m.)

CHAIRMAN BONACA: Good morning. The meeting will now come to order. This is a meeting of the ACRS Subcommittee on Plant License Renewal. I am Mario Bonaca, Chairman of the Subcommittee.

ACRS Members and consultants in attendance are Peter Ford, William Shack, and Stephen Rosen.

The purpose of this meeting is to discuss the staff's safety evaluation report, with open items, related to the application for the renewal of the operating licenses for Units 3 and 4 of the Turkey Point Nuclear Plant, and associated Westinghouse Topical Reports.

The Subcommittee will gather information, analyze relevant issues and facts, and formulate the proposed positions and actions, as appropriate, for deliberation by the full committee. Noel Dudley is the Cognizant ACRS Staff engineer 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 September 11th, 2001.

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 speak with sufficient clarity and volume so that they can be readily heard.

We have received no written comments or requests for time to make oral statements from members of the public regarding today's meeting.

We will now proceed with the meeting -- well, before we do that actually, I would like to make just a couple of brief announcements. One is that you all know that one of our members, Graham, had a heart attack, and he had a second one, I believe, on Friday.

He is in good shape, but certainly could not join us here. So I gave him our best, and I think we hope to have him back for the Hatch application. So, that is one issue.

The second one is John Barton could not make it. He had some problems with transportation and things of that kind. He sent us a number of good comments, and if the applicant and the NRC will be patient with us, we will try to do justice to his comments.

And as we walk through the presentations, we will go through them and where they seem to be significant, we will talk about them. That may force me to break the flow of the presentation and go back

to his comments, but I think that is the only way we can do justice to them.

So with that we will now proceed with the meeting, and I call upon the Florida Power and Light Company to begin.

MS. THOMPSON: Good morning. My name is Liz Thompson, and I am the project manager for Florida Power and Light. With me here today is Steve Hale, and he is the licensing and design basis leader for FPL as well.

We have prepared a presentation to go through the process that we used for generating the application, the IPE portion, or excuse me, the IPA and the TLAA portions, and Steve is going to lead us through that using the overhead projector.

MR. HALE: Good morning. Like Liz said, I am Steve Hale, and I am the licensing lead for FPL's nuclear plants and terms of license renewal. I will try to keep this as interesting as I can.

The topics identified by the ACRS Subcommittee that they were interested were to go through a background, and go through our scoping and screening process, go into how we performed our aging management reviews, and then talk about our time limited aging analyses.

In terms of background, FPL began strategic planning for license renewal of our nuclear plants around the 1992 time frame. This followed issue of the original version of the license renewal rule.

We have been active in the license renewal industry groups, like the Westinghouse Owners Group, the license renewal group, and the NEI task force and working groups since about 1993.

We began in earnest our IPA and TLAA efforts in 1999, and we submitted the application in September of 2000. The safety review requirements and guidance that we had available to us at that time were the 10 CFR Part 54, the revised version that was issue in the mid-1990s.

We had a draft standard review plan for license renewal, but that has changed drastically. We tried to keep up with the GALL report. We had technical reps on the groups at NEI that reviewed the mechanical, civil structure and electrical sections of GALL as it was going along.

We had a draft version of the Reg guide, and we also had available to us NRC position letters on certain particular issues like consumables and that sort of thing.

We were active participants on the development and issue of NEI 95-10, and we also had as part of the Westinghouse Owners' Group effort developed some guidelines on how to do an IPA, as well as review your TLAAs.

In terms of our work process itself, and namely that scoping, screening, aging management reviews, and TLAA identification and evaluation, we piloted our initial procedures in 1996.

And by piloting we actually tried to produce sample products and that sort of thing, and then factored in improvements that we could see. We tried to structure them around the design basis tools that we had available to us.

We have a controlled electronic database, and we have design basis documents that were developed in the late '80s and early '90s, and those were very useful in performing this process.

We made a number of information trips to various applicants that were very active in license renewal at the time.

And then we went back to the one that we felt more compared -- you know, fairly well with, to the tools that we had available to us, and we spent a lot of time reviewing your detailed technical

documents.

Some of the other things that we did was that we tried as best we could, because it was kind of a moving target, to factor in lessons learned from a review of previous applications, looking at REIs, and REI responses, and looking at resolution of generic issues.

And we tried to factor those into our procedures and output documents as best we could. We did perform all the work in support of our license renewal application in accordance with our quality assurance program, and we also chose to have independent peer review groups, both internal, as well as external peer review groups, come in and look at our products and our procedures.

And these were folks from various applicants, as well as some technical experts in the field.

DR. SHACK: I was just curious about that. One of the more contentious issues that always seems to come up on a license renewal is how you handle the effect of the environment on fatigue life. And through the REI resolution, you seem to have come up with a good solution to that problem.

But I was a little curious as to why you

didn't anticipate that question was going to come up. It has come up in every license renewal so far, and I am sort of waiting to see it built into the application, rather than coming out of an REI.

Well, I think one of the reasons is because we were the first B-31(1) plant, and we didn't really know what the issues would be. Now, we did try to address concerns relative to NEUREG 62-60, which we did include in our application.

And we tried to address the concerns as we saw them, and we factored in, in fact, the commitments regarding the surge line consistent with what ANO had committed to.

But there was a lot of questions that came out regarding the pressurizer, which had not been asked previously, and the GTR, the Westinghouse GTR that was submitted as a stand alone document for all Westinghouse plants, had flagged some high fatigue areas in the pressurizer.

DR. SHACK: That was one of the more curious things in the thing. They had it flagged, and for you it was a "no, never mind" thing.

MR. HALE: Right, but we went back and looked at the pressurizer specifically for Turkey Point. And I think that is probably where a lot of

those REIs were based on. Whereas, you didn't really see a lot of that in the previous applicant.

CHAIRMAN BONACA: I have a question that is more general to the same. Clearly, your application is somewhat one of a kind again, because you didn't have final documents, like NEI finalized documents, or the SRP, or the GALL report.

How different do you think it would be, this application today, if you had had started from scratch?

MR. HALE: I think that probably we would have figured in GALL as much as we could. It is interesting that you ask that, because we are in the process of developing the application for St. Lucie right now, and we are facing that.

We want to try and use the approach that we took at Turkey Point, but at the same time integrate what we have available to us in GALL. And we are doing things like including GALL references in the component commodity listings.

And where our programs fit within the bounds of the GALL programs, we are simply going to say that we are consistent with GALL. So, we are doing that.

CHAIRMAN BONACA: Okay.

MR. HALE: We see the GALL as the main area where we can benefit from what is out there. With regards to scoping, we kind of walk through a two-stage process. When you go to look at the plant, our plants define the terms of systems and structures.

So the first step that we wanted to take is to identify which systems and structures had portions that were safety related, and we said that the whole thing was safety related.

And then the next step is that we looked at the various components that make up that system, and determine which ones support the functions and which ones don't.

So we started first in the system and structure level, and when I say system, we are at the cooling system, and safety injection system, and our HR system, and structures, containment and this sort of thing.

And you can see those results which are presented, and I believe it is in Section 2.2 of the application. The purpose of scoping is to identify systems and structures which are either safety related, non-safety, which can affect safety related.

And then the five regulations regarding fire protection, environment qualification, PTS, ATWS,

and station blackout. More safety related, when you compare the safety related definitions in Part 54, they are consistent with what we call safety related in our quality instructions, and consistent with how we classified safety related components in our plant.

The sources of information that we used in defining what was safety related -- and again, even if only a portion of the system was credited, in terms of -- or had components that were safety related, the whole thing was considered safety related for future component scoping.

We used the UFSAR, and we used the tech specs. We used our license correspondence database. We have all of our licensing correspondence, both to and from the FPL and the NRC electronically.

Our design basis documents, and our component database, and our control design drawings. And again we reviewed all systems and structures to determine if there were any safety related components within them.

For non-safety which can affect safety, this is probably one of the more challenging portions of scoping, especially for an older plant, where you are looking at non-safety related systems which could potentially affect safety related systems.

Again, we looked at the UFSAR tech specs, our licensing correspondence files, our DBDs. We have a section of our design basis documents that walks you through all the assumptions like for pipe break, seismic criteria, and that sort of thing that we source when we are looking at interactions.

Our design drawings, as well as pipe stress analysis, because you have to go and look at what portions where you have a boundary, and you credit an additional piece of pipe in support of that, and we had to include that pipe in the scope of license renewal.

We saw two categories. You have a category of non-safety related system, which actually performs a function that supports the safety related system. An example would be a NVAC system on a long term basis that needs to run to support a safety related function. And then we had interactions.

MR. ROSEN: Hold on for a minute.

MR. HALE: Yes.

MR. ROSEN: Why wouldn't a system that is needed to provide functional support for a safety related system also be safety related?

MR. HALE: The design of Turkey Point originally in the late '60s and early '70s didn't

classify HVAC systems similar to what you would classify them today.

Now, control room HVAC is safety related, but you had some of those heating or cooling functions, or ventilation functions, that weren't as clear, in terms of criteria, when Turkey Point was originally licensed.

We carry a special augmented quality for those ventilation systems, but they aren't classified safety related.

MR. ROSEN: They would be classified safety related, for instance, at St. Lucie, a later plant?

MR. HALE: Yes. Yes, they are.

MR. ROSEN: Okay. Thank you.

MR. HALE: But when you look at the older plants HVAC, it is a little different than what you would see in a newer plant. In terms of license renewal, they are all in the license renewal.

And the other was in the area of interactions, where you have a safety related or non-safety related systems based on assumed failures could impact the safety related system. So those two categories are what we looked at.

With regards to the regulated events, we

have a lot of design tools at our disposal, in terms of determining what is in the scope and what isn't. Again, we used our UFSAR and tech specs, and licensing correspondence, DBDS, our component data base, and design drawings.

But in addition to that, we have a safe shutdown analysis and a central equipment list with regard to Appendix R. We have the EQ list as integrated into our component database.

And for station blackout, we have load lists, in terms of what is required post-station blackout in order to support the plant.

Okay. Now that we have identified what systems and structures are in the scope of license renewal, we proceed to screening, the purpose of which is to identify structures and components which require an aging management review.

We step through this by first looking at all the components or structural components that make up the system or structure, and determine whether that component or structural component supports the functions of the system or structure.

And then we look at the screening criteria. Is it passive as defined in the regulations. You know, performing the intended

function without moving parts or change the configuration or properties.

And is it subject to replacement based on qualified life. And we decided in screening that it made sense to us to segregate the three major disciplines; mechanical, which is more system oriented in the structural area, and had very similar components in each one of the buildings.

And then in the electrical area, based on the types of components that you have in the electrical 9C systems, and it was best to take a different approach there.

So for mechanical systems, we established valuation boundaries and interfaces, in terms of where the systems were, and this is that system, and this is this system. And we made sure that we had everything picked up.

And then we identified or actually mapped functions of the system, the license renewal system intended functions, on to the drawings to establish what pieces support the various functions.

And then we identified the various components in that system that support those functions. After we got that, we have a list of components that support the system intended functions,

and this is all three scoping criteria.

And then we identified whether they were passive or not, which is fairly extensive information in the NEI and standard review plan regarding how you do that.

And then long lived. We looked to see if these things were procedurally replaced on a regular basis, in terms of qualified life. And then after that, we identified individual component functions.

You know, like pressure boundary, heat transfer or whatever it might be for that particular function, or for that particular component.

CHAIRMAN BONACA: I don't know if this is the right time to ask questions.

MR. HALE: Sure.

CHAIRMAN BONACA: But in the plant level scoping results, you know, you have tables in the back, Table 2.2.1., where you do have an identification of systems or components, and then structures, but the structures are later.

And we have a number of questions about the number of systems that were excluded, and I would like to ask you, first of all, penetration cooling that was excluded from scope.

MR. HALE: Yes, there is a particular

analysis that was performed at Turkey Point. Our hot penetrations go to the outside. I mean, we don't have a building around where the main steam and feed water blowdown penetrations come out.

And it was an actual analysis, and it is in the UFSAR, in the structural section, that says that even without cooling, temperatures will not exceed 150 degrees.

CHAIRMAN BONACA: Okay.

MR. HALE: And so all of our peer reviews -- well, that is a good question.

MR. ROSEN: What do you mean by hot penetrations that don't exceed 150 degrees?

MR. HALE: Well, the area around -- the concrete around. You know, you have a flute head inside containment on the steel side, and you have a main steam pipe that comes out.

So you have an air space around the penetration, the actual containment penetration proper in the pipe that comes out. That goes to the outside. So that space right there is exposed to an outdoor environment.

MR. ROSEN: What do you mean by high penetrations?

MR. HALE: Penetrations that are hotter

than 150 degrees.

MS. THOMPSON: Classically -- this is Liz Thompson speaking. Classically, you would talk about those as being, for instance, lines that you look at for high energy evaluations.

MR. HALE: Yes, typically they are your main steam, feed water, and a blow down lines for a PWR.

CHAIRMAN BONACA: The next question I had was -- and actually this came from John Barton, and is regarding RAD waste building ventilation, and why that was excluded.

MR. HALE: We have a document basis in the application regarding RAD waste systems in general. We basically looked -- our RAD waste building is an independent building.

The consequences of radioactive, both liquid and gastrious releases, are so small that we looked at the scoping criterion under Part 54, and it is a small fraction of Part 100 limits for all of our radioactive waste accidents. So we excluded RAD waste system on that basis.

CHAIRMAN BONACA: And some of this, you know, I looked at myself, and I could not find a discussion, however, in the application. I mean, the

results is here in the table, but --

MS. THOMPSON: On the other side of the table, there is a copy of the application, Steve.

CHAIRMAN BONACA: So there is a discussion. You don't have to give me -- well, you do have a discussion.

MR. HALE: I will give you a reference after we are done.

CHAIRMAN BONACA: Okay.

MR. HALE: We did cover it, I believe, in the methodology section.

DR. FORD: Could I come back to Steve's earlier comment about the classification of non-safety related items, which would affect a safety rating, and which are not included in your proposal because of the age of your plant, and which would be included, for instance, in St. Lucie.

I can understand that maybe there is a regulation reasoning for this, but is there a physical justification?

MR. HALE: We just said that they weren't classified safety related. We have included the HVAC system in the scope of license renewal, regardless of classification.

DR. FORD: Okay. So it is not just a

question of putting the rules because of the age of the plant in one era, and changing them for --

MR. HALE: And there are various classifications. Typically what we find is that, for example, we credit the exhaust building exhaust fans. They are not safety related, but they are credited for fire protection, and they are credited for station blackout.

And they also carry an augmented quality. It doesn't go to the full extent, but they do -- but they are treated special, and they are controlled under our QA program.

MR. ROSEN: Can you identify what the differences are? For example, if today you declared them safety related. What additional controls and processes would be applied to those components that are not now applied?

MR. HALE: Really none, because I think probably -- because even in new plants the only tech specs you have are typically associated with charcoal filter systems.

Well, I take that back. Well, control on the air-conditioning is one. But in terms of material control, quality assurance, we maintain a similar level to safety related for our HVAC systems at Turkey

Point.

So I think it was more of an evolution of the industry, you know, when you look at the old plants versus the newer plants. I think the important thing those is that we have included them all in the scope, and they have got an aging management review, and they were determined to be in the scope for the maintenance rule as well.

CHAIRMAN BONACA: All right.

MR. HALE: So they are already under observation inspection and being managed.

CHAIRMAN BONACA: The next question is that it says on screen wash. Why are screen wash not in the scope?

MR. HALE: Our screens are, but our screen wash isn't. And the reason there is that when you look at the flow rate for intake cooling water, it is very small as compared to circ water. We need screen wash for circulating water, but under accident conditions, our circ water pumps are not running. So you are looking at a very small percentage. So we included the screens to preclude any small debris, and that sort of thing which may be in the intake.

But we didn't credit the fact that the screens have to run and you need to rinse this stuff

off of it. And we still have our strainers that are downstream of that, and which are cleaned periodically as well.

CHAIRMAN BONACA: So you do have in any event programs to clean them and to inspect them?

MR. HALE: Oh, yes, but we just didn't need to credit them for license renewal.

MR. ROSEN: I understand your comment as to safety related water flows through those screens.

MR. HALE: Yes.

MR. ROSEN: And even after the main pumps trip.

MR. HALE: Right. But it is such a small amount that it wouldn't -- that you wouldn't get a backup to where you would actually block flow in water cooling.

MR. ROSEN: So the service water system takes suction from the same bays as the main circulating water system?

MR. HALE: Right. Right.

MS. THOMPSON: And for clarification, the safety related service water system at Turkey Point is called the intake cooling water system. The service water system at Turkey Point is actually a non-safety related, like potable, water type of a system just for

clarification.

MR. ROSEN: Thank you again.

CHAIRMAN BONACA: And that is one thing, that when you read through, you are left with the question of how come this is not, and then you think about it and you say, well, I am sure that they have some programs ongoing now that are not described, even among existing programs and that are being used to monitor the systems and this was one.

MR. HALE: Right.

CHAIRMAN BONACA: But to some degree -- I mean, I guess it is the format of the applications that we received that it just doesn't provide that information. It leaves the reader with the impression that things are not being done.

One question, for example, that was raised by John Barton that comes later, but I can raise it now, is that I believe on the fire protection, the sprinkling systems.

There is a one time test, I believe, during the last 10 years of the license life -- and maybe we have to wait until we get there, but is the testing of wet pipe sprinkler systems starting in the 50th year of operation.

And it leaves us with the question of is

this system never tested before?

MR. HALE: Oh, no. If you look at the fire protection program description, we have extensive testing that we do on the fire protection system. The issue that was raised there was that there was a particular criteria in NFPA 25 regarding sprinkler head inspections at year 50.

And so as a result of the staff review, they had asked us to include that in our commitments, which we did.

CHAIRMAN BONACA: Yes, and this I think came up in previous applications.

MR. HALE: Right. Right.

CHAIRMAN BONACA: Okay. I remember now. Okay. I understand. It is just the impression that one is left with, is this question, you know. And in many cases, we know that there is a lot of going on.

But since you are referencing existing programs, one would expect some mention of that and at times we don't see it. So --

MR. HALE: The NRC regional inspections -- and I can tell you this much right off. They did a very detailed review of the programs, and Hibo Wang, who was the civil rep, can tell you about that.

But they sept a lot of time looking at our

programs, in terms of -- and comparing them against our AMRs to ensure that our programs are managing the effects that need to be managed.

CHAIRMAN BONACA: Yes, and if you can be patient with me, I will go through this list so that we can get through them under the plant scoping.

MR. HALE: No problem. No problem. There were three electrical systems. One is a C-Bus electrical switch gear and closure, the main auxiliary transformers, and the start-up transformers. And that was not clear to me why they were excluded from the scope.

MR. HALE: The C-bus was a bus that we had installed that was powered from the switch yard, and it powers non-safety related loads. It was basically to -- you know, like a feed pump, main feed pumps.

It was really to take some of the load off the existing plant buses. The auxiliary and start-up transformer, our assumption was that you have your diesels, in terms of on-site power supply from a safety related standpoint.

And you don't need your aux and start-up transformers for safety, and non-safety, which can affect safety, and certainly not station blackout.

CHAIRMAN BONACA: But the basic

assumptions in the accident analysis is that you have also no low power in some cases, right? You would depend on that. I mean, it is not only that the --

MR. HALE: We don't rely on it, you know, in terms of our accident analysis, or in any of the regulated events. And fire protection, the assumption is that you have to demonstrate that you can handle it with some loss of off-site power.

CHAIRMAN BONACA: Okay. So you don't consider them because of that?

MR. HALE: There are components, certain terms of plant availability. You know, you want your aux transformer and that sort of thing.

CHAIRMAN BONACA: And then the other thing that we had on the list here from John Barton is the off-site communications tower is not in scope, and --

MR. HALE: Well, we have on-site communications. In fact, after Hurricane Andrew, we developed 3 or 4 different alternatives on-site. So it is not required.

CHAIRMAN BONACA: No, this would be off-site.

MR. HALE: Right, but the off-site one is not required, in terms of communications.

CHAIRMAN BONACA: Okay. It is not

required?

MR. HALE: No.

CHAIRMAN BONACA: For an emergency plan or anything?

MR. HALE: Right.

CHAIRMAN BONACA: And finally the switch yard relay inclosure and the condenser.

MR. HALE: We don't credit the condenser for any of the scoping criteria, 54.4, nor the switch yard.

CHAIRMAN BONACA: Okay.

DR. SHACK: Just to continue on the scoping a little bit. One of the things that we sort of looked at and suggested in other reviews is do people look at EOPs, because again this is sort of discussing equipment that people are relying on.

And just making sure that that equipment is somehow checked in license renewal, but I noticed that it is not one of the documents that you look at here for your scoping study. Are you confident that everything that you need in your EOPs is somehow covered here?

MR. HALE: Yes. Yes, we are. One of the things that we did do was compare our scoping results against maintenance real scoping results for

consistency, and one of the items under the maintenance rule is the EOPs.

So we felt confident by doing that comparison that we could -- that we would capture any differences that there may be. So that was the main thing. We found that we didn't really need to go into the EOPs themselves.

MR. ROSEN: I am taking your answer as you relied on the maintenance rule scoping for the EOPs.

MR. HALE: Well, we don't -- the EOPs is not a scoping criteria for license renewal. And we don't have to check the maintenance rule files as part of our license renewal scoping. There are differences between license rules and maintenance rules.

But we did go compare against the maintenance rule for consistency. It still is not a criteria under license renewal to do that.

CHAIRMAN BONACA: Okay. I have another question which probably will go to the staff more than you, but I think it is about the spent fuel pool. And I noticed that you included the spent fuel pool cooling in scope.

MR. HALE: Yes.

CHAIRMAN BONACA: In fact, you identified for the spent fuel pool system three intended

functions. One is the pressure bundle integrity, and two is heat transfer, and three is culling.

And so you have a number of components in scoping, including the cooling of the pumps and so forth. Now, you do have an emergency makeup system to that pool outside of the cooling system. Is it tied to the high pressure injection system or something?

MR. HALE: I am not sure. Do you know, Liz?

MS. THOMPSON: Well, yes, there are makeup systems. I am not sure if it is tied to high pressure injection, but we certainly have that capability.

MR. HALE: We had to upgrade after our second rerack, and we upgraded our system to a seismic category one safety related system. We felt that we were managing the system.

CHAIRMAN BONACA: Well, actually, I feel that you went beyond the normal scope that we saw before. I mean, for other plants that we have reviewed before, the only function identified was pressure bundling integrity, and then the steel liner was the only component in scope because there was an emergency makeup water coming from high pressure injection.

And I am just questioning why there is

this variability in different applications. Is it tied to just the design basis? I mean, how come you have such differences in functions being identified, and I guess that is a question for the staff.

MR. HALE: Well, I can tell you from my own experience looking at our two sites that the original design, for example, at Turkey Point was an emergency makeup.

But as a result of fuel consolidation in the spent fuel pits, you go through a upgrade as you license that. For example, at Turkey Point, we upgraded the cooling system to seismic category one, and we replaced the liner with a quarter-inch stainless steel liner plate which was not there originally.

Redundancy. I go look at Unit 2, and you have got a totally redundant system at St. Lucie Unit 2. At Turkey Point, we didn't originally, but it was upgraded. So I think that has something to do with it, is based on where various plants are regarding upgrades that might have taken place through time.

CHAIRMAN BONACA: But I still -- I mean, I feel at some point, for example, the GALL report will have to have some base line acceptance of both functions which are credited for license renewal for

that system, and therefore, the specific components that come through that scoping and screening process that identifies those functions.

I mean, I am just uncomfortable about the difference in scope, particularly the one that has to do with the inclusion of the cooling system that was excluded from the previous applications.

MR. KOENICK: This is Steve Koenick with the staff. You have to look at the licensing basis. A lot of these other plants, they were required to be safety related. They did have the boiling and makeup as a design basis.

So there will be variability like Steve was saying between the vintage of plants and what they were designed and licensed to.

CHAIRMAN BONACA: I understand that, but I certainly wasn't very happy with the exclusion of the cooling system from scoping and screening in the previous applications.

But I understood the logic of that. Now I see an application coming and it goes beyond the requirements we saw applied before, whatever the reason may have been.

And I am left with the question in my mind not regarding this application or the previous one of

why those components should be excluded to start with.

I mean, is there something regarding the license renewal rule that allows you maybe not to include things that should be there? You see, that is really the question, and this is a significant discrepancy here.

MR. KOENICK: Well, as Steve was saying on Turkey Point, in order to rerack their pool, I don't know all the details, but they essentially needed to upgrade to become safety related.

And other plants, if you look at the scoping criteria, today they are not safety related cooling systems. It's not that they are not being maintained and that there is not programs and procedures.

But when you look at what the criteria for license renewal are, these systems on some of the other plants that you have looked at don't meet that criteria, and that is the way that they are operating today.

CHAIRMAN BONACA: But do you feel comfortable that those systems then are going to be effective for the next additional 20 years of operation?

MR. HALE: Yes.

MR. KOENICK: Yes. You know, license renewal is only looking at select systems that are based on the scoping criteria that are safety related or that can in effect fail safety related.

The licensees have programs and maintenance procedures for all the other systems, too. It's just that we are taking a particular look at certain ones for renewal to ensure that the plants will continue to have the safety margins that they need.

CHAIRMAN BONACA: Okay. Anyway, I don't have a problem with your application. I mean, you went beyond what we have seen before.

MR. HALE: We are very happy.

CHAIRMAN BONACA: And I think you have certainly recognized the intended functions that I always thought had to be there. So, that's good. I have one more question.

MR. HALE: Okay.

CHAIRMAN BONACA: Your Table 2.2.1 is a list of all of the component mechanical systems, and then when I got to Table 2.3.2, I find that there is a very effective, I think, resolution of the renewal applicant action items coming from the supporting Westinghouse documentary report.

MR. HALE: Okay.

CHAIRMAN BONACA: And although you did not reference it in the application; however, you do have significant discussion into the application and also in the SER. I could not find the one for the pressurizer.

MR. HALE: Well, at the time that we submitted the application, we had two draft SERS. We had piping and we had supports. So, when we submitted, we did not have that available to us for the pressurizer or for the internals. Now, what happened --

CHAIRMAN BONACA: But you must have used it, because the SER, all the pressurizers specially identifies four renewal applicant action items, and then discusses the reason why or whatever you are proposing is acceptable.

MR. HALE: As part of our REI process, and the staff I'm sure will describe this to you, and maybe this afternoon, but we got REIs relative to the open items on the pressurizer.

They reviewed our application and in those cases where the applicant action items weren't addressed, they asked us in the REI and we responded to it.

In the case of the internals, they asked us all 11 of the applicant action items as an REI. So what you will find is our responses to those in our REI responses, and it might have been in the reactor coolant system REI response.

I am not sure about that, and so it was a combination of considering where they were with the WCAPs at the time.

CHAIRMAN BONACA: Okay. I understand.

MR. HALE: They all have SERs now, and we have also done a check where we stand against them, and we took them either through our application or in the REI responses.

CHAIRMAN BONACA: Well, I bring it up because I thought it was an excellent way of documenting resolutions in an open fashion so that you understand the true linkage between the supporting topical reports, and the way they had been used in the application.

And I liked it so much that when I went to the pressurizer, I said where is it, and so I understand now.

MR. HALE: That's good feedback. Thank you.

CHAIRMAN BONACA: Okay.

MR. HALE: With regards to civil structural screening, we took a very similar approach to what we had done in the mechanical area to each structure. We identified the various structural components that make up each structure.

One point that we wanted to make is that the non-current carrying electrical 9-C components, these are enclosure supports for conduit, and conduit cable trays were included in the civil structural area, because they are really structural components.

We looked at the various structural components that support each of the structure intended functions, and then we went through the passive, long-lived checks in the regulations with regard to screening.

Of course, most of the civil structural items are passive, and typically they are not replaced on a regular basis. So most of the stuff comes through in terms of requiring an aging management review.

And then we identified the individual functions of the structural components. In the electrical 9-C area, for efficiency, it makes a lot more sense to walk through this in a little different order.

For example, if I do a download in our database of electrical components associated with a 480 volt load system, I may get 18,000 components, and to go through that one when a majority of them are active, it makes more sense to -- you know, let's look at the active stuff, and get it out first, and then look at what we have left.

So we identified all the component commodity groups, and we identified the functions as being very similar to approaches taken by previous applicants. And then we identify the component commodity groups that were passive.

One point that I wanted to make was that if it was in the EQ program, we said that it is subject to replacement based on qualified life, and I think that's it. Yes, that's it. I'm sorry, I thought I had another slide on there.

Well, that pretty much takes us through screening. Did you have any questions regarding screening?

CHAIRMAN BONACA: Well, actually again I thought that your tables laid out, 3.2.1., are quite effective, because you are summarizing in those tables the function, and the material environment, and therefore you are going to the scoping and screening,

and it comes through. That's very good.

MR. HALE: And six column tables were lessons learned from the Oconee. In fact, it came from our Duke Brothers that indicated that if you had it all in one table -- and in fact we are thinking of carrying that forward long term, in terms of configuration control and management.

CHAIRMAN BONACA: Yes.

MR. HALE: I think that is a good way to reflect the entire IPA.

CHAIRMAN BONACA: Yes, that's good.

MR. HALE: Now to the aging management reviews. This is really the purpose as defined in the regulation for each structural component or component requiring an aging management review. You demonstrate the effects of the aging will be adequately managed.

So the intended function would be maintained consistent with the current license basis for the extended period of operation. Now, that is a long definition.

I thought that the best way to go through this was to talk about the inputs that we utilized for doing our aging management reviews. I am going to touch on the technical resources, and talk about the operating experience reviews that we performed, and

also mention peer reviews that we had done on our aging management reviews.

CHAIRMAN BONACA: Before you start with that, I would like to ask you a question.

MR. HALE: Yes.

CHAIRMAN BONACA: Of course, through the application there is a description of the exposure that you have to salt air. You do have a pretty peculiar auxiliary building, right? I mean, you have no walls there. It is all open.

MR. HALE: The turbine building. The auxiliary building is enclosed, with the exception of the CCW area, which has walls, but steel grating for a roof.

CHAIRMAN BONACA: For those components which are not enclosed -- I mean, what is the experience of the past? It is more curiosity than anything else.

MR. HALE: It is actually pretty good. What we found is a large bore stainless piping, thin wall, in the heat affected zones. We have had some experience with St. Lucie, which in terms of external stress corrosion cracking, and this is piping in trenches.

But overall it has been very good. As

part of our aging management review, we walk down all our systems that were outdoor. I mean, we walked them all indoor as well, but outdoor we specifically were looking for certain aging effects, like pitting. You know, cracking.

We have had 30 years of experience at Turkey Point, in terms of SSC and that sort of thing, and so we know where the problems area would be. But actually it has been pretty good.

There is a couple of isolated areas which have challenged us, and we have talked about them in the application.

CHAIRMAN BONACA: Yes.

MR. HALE: Our previous heat traced line in the CDCS system, where you had insulation, and you get some leakage or something and it holds it on to the pipe, we actually had some experience with it. But overall the performance has been very good.

MR. ROSEN: Let's come back to the stainless steel piping that was found to have external stress corrosion cracking. Was that piping that was wetted continuously or underwater because it was in trenches?

Were the trenches filled with water, or was that cracking, do you think, experienced just

because the piping was exposed to salt there?

MR. HALE: No, there was some wetting involved, and Liz, maybe you can speak a little better to this. We have not really experienced this at Turkey Point yet. We experienced it at St. Lucie, but we made it an assumption for Turkey Point.

MS. THOMPSON: Well, in a trench, sometimes in a subtropical climate like we have, we get rains, very hard rains, all at once. And sometimes you will get some wetting. If nothing else, you are getting a very moist environment, with some salt present there from the ocean and the canal water at the two different sites.

And both are salt water environments, and what you don't see -- and what is different about trenches -- is because it has a cover, you don't get the rinsing effect basically of the rainwater, which basically in a trench, you know, you would tend to expect that you may see a little bit higher chloride concentrations.

And you don't get the rinsing and then the sun drying from afternoon thunderstorms and stuff like that that you get in most other areas.

And as Steve mentioned, Turkey Point -- you know, we are dealing with about 30 years of

experience, and at St. Lucie, about 25 years of experience. And so far that has been all that has really come up. The rest seems to be a pretty stable environment for outdoor areas.

MR. HALE: And it was very specific to the heat affected zone on that thin wall pipe where they welded it.

MS. THOMPSON: But the stresses of the heat affected zone, you know, plus a thinner wall, would tend to cause higher stress and complications. So it took the combination of all of that before we have seen anything, and of course those have been addressed through our correction action program under our quality assurance program.

MR. ROSEN: How severe was the cracking?

MS. THOMPSON: We had just seen minor boric acid indications. I mean, nothing from a leakage perspective or whatever. Early detection, of course, is what we deal with everywhere.

But we have found it in more than just one location. So once we found it in one location, then the next step is to look for applicability, and expanding out until you confirm that you have really got your arms around the full scope of the issue. And so we did see it in more than one location.

MR. ROSEN: And this was at St. Lucie and not Turkey Point.

MS. THOMPSON: It was at St. Lucie. We took that experience and applied it to Turkey Point. We do have a few lines that are somewhat comparable, although we have not seen the conditions at Turkey Point.

MR. ROSEN: And can you tell me what systems at St. Lucie it was experienced in?

MS. THOMPSON: They were ECCS section line systems. Basically, they are section line to the piping systems, and we had to work through one train at a time making repairs, and replacements, and so forth to address those. So they were definitely systems of great interest to us.

MR. ROSEN: Thank you.

DR. FORD: On this full page, fairly recent Mr. Lochbaum, a concerned scientist, sent a note to Mr. Grimes pointing out that in the last year in several, in quite a few, in over 10, incidents where reactors have been shut down prematurely, unplanned, and probably because of a failure of aging management programs.

How good do you feel about this programs, in terms of their ability to see or to detect a

problem before it occurs?

MR. HALE: We are very confident in our programs. In fact, I think the inspection that was recently performed upholds that. We look at those and we factor in any of those failures in consideration of our own instances.

For example, the V.C. Summer, we looked at the applicability there to Turkey Point. You know, they had penetrations, and that's identified as an open item in the application.

DR. FORD: But these are really all reactive.

MR. HALE: Well, that penetration issue, I think there was some recent information that came out regarding the failure mode that had not been originally, but we all had plans for reactor vessel head penetration inspections as part of 97.01.

You know, it's just that -- I think there was some -- the new information that came out available, but it is not as if we were ignoring it, you know. I think that -- well, my perspective on it is that I have been at FPL for over 30 years.

And I have been at both of these plants, and I think you pretty much see most everything, or have seen most everything based on the long term

operations at length.

DR. FORD: Yes. Unfortunately, you always see something the next day which you didn't predict the day before. I guess my frustration to a certain extent about this whole procedure is that I keep seeing -- for instance, the frequency of inspections, and the depth of inspections.

It is dependent on how good your disposition algorithms are, and we keep seeing in all of these license renewal aging management programs reference to ASME 11 procedures.

And yet the data upon which those curves, those disposition curves, are not always good quality, and they are always being revised. And unfortunately when you find that we need to revise them after we have had a fairly catastrophic event.

And maybe this will come out this afternoon as we are discussing from the NRR perspective, but do you have any feeling as to where we are at risk? For instance, baffle bolts right now. Could you predict when the baffle bolt cracking occurrence would in fact take place, and what would the impact be on, for instance, delta-LOCA, or LRF?

MR. HALE: I feel very confident about the baffle bolt area because we have had an extensive

probing program going on right now as part of the WOG to address that specifically.

And including safety evaluations regarding, you know, failures. We were doing -- and Roger Newton is back there, and he can tell you, because they pulled theirs at Point Beach and inspected them.

And George Roble was also there for GANE, who has done the same. So I feel in terms of the WOG that we have a good feel for the baffle bolt issue. With regard to Section 11, where we credited Section 11, at least the mechanical systems, was for Class One inspections.

Now, we are moving to a risk informed in-service inspection at Turkey Point. We factored in things like risk, fatigue, into what we are going to be looking at.

For example, we are going to look at every weld in the surge line in the next 10 year interval, because that is the critical location to Turkey Point.

DR. FORD: Well, that's great. What is the area of your greatest risk right now?

MR. HALE: Greatest risk?

DR. FORD: Well, you have about 7 or 8 programs that I see listed in your application, but no

details in there about them. How good do you feel about their worth, and which ones would you want to upgrade from a risk point of view?

MR. HALE: I feel -- well, what we described in the application, behind every one of those on site is what we call our program basis documents.

DR. FORD: Okay.

MR. HALE: And details specifically how the plant specific procedures that implement those, as well as specific enhancements to procedures, in terms of what we feel that we need to do.

If you look at what is happening in industry over the last few years, you know that inconel is an issue. I mean, that seems to be one of the underlying things behind a lot of these issues that have been raised.

At St. Lucie, we have a number of inconel instrument penetrations, and we have had leakage there before. So we have been following the inconel issue for some time, and what I have seen through the years is they started saying, well, it is a bad heat.

And then, oh, here is another one, and here is another one. But certainly inconel poses a challenge for all of us, and to me I think that's

where the risk is.

But I think we are learning a whole lot more over the last couple of years, because the V.C. Summer event was related to an inconel safe end, I believe. You know, certainly the penetrations on the inconel head are all centered inconel.

DR. FORD: I bring it up now because the information for making those decisions come out of those three sub-bulleted items there.

MS. THOMPSON: I think an important thing to note is that the aging management reviews -- and Steve will get into this a little bit, and factor in operating experience, both at our plants and at other plants.

And that is part of an ongoing process that we always do. Operation of our plants is based in a defense-in-depth, you know, multiple barriers type of a concept.

And we have to recognize that those multiple barriers really are what provide the ultimate level of safety from redundancy, between systems. You know, systems backing up other systems.

And the fact that we have and have included in our aging management program are most of our early detection processes that we have in place

now under the current term.

And in a couple of cases we have suggested enhancing those to further cover a broader scope basically for the renewal term. Those are the processes that put us in a position where that operating experience is identified early, and then we as an individual operator of the plants, as well as an industry, share that.

And that's where I think we really have the strength and the safety performance of this industry. We don't what to let problems get us to the point where they force us undue shutdowns, unplanned shutdowns.

And we know that we have to take the right actions to address those based on not just our own specific planned experience, but also what we find as we move forward basically in this industry and managing these plants.

And a lot of our early detection programs, from the systems and structures monitoring program, and to our boric acid programs, are the types of things -- just to name a couple of examples, that really put us in that early indication type of a process that allows us that additional layer of defense really to ensure our plants are safe.

CHAIRMAN BONACA: And on the other hand, you might reference to the V.C. Summer issue. They are more -- and I am not as much troubled by the fact that you have an inconel problem, and you have some cracks developing, than about the fact that the programs which were in place there did not detect those cracks.

In fact, they didn't see any when the inspections were performed. And then we had to wait until the crystals were out, and that's really what is our concern the most. I mean, these programs are great in many ways.

I look at it and there is a full life cycle management here being laid out, and developed in front of us. You know, the concern is always about how able are we to detect in the inspections, because the inspections are many and thorough.

DR. FORD: These are more general comments, and not specific, as those will come out this afternoon. But it just concerns me that as an industry that we tend to go by industry experience, and by implication is the mean of the experience.

And what we are really interested in is the first occurrence. For instance, before V.C. Summer, the day before, we didn't know it was going to

occur. And when it did occur, it was, "oh, shit," and what are we going to do about it.

And time and time again throughout our history we have done exactly that, that in large pipes and BWRs, they are never going to crack, but for whatever reasons yet they did.

And this is why I have got great suspicion of these aging management programs which can't see forward.

CHAIRMAN BONACA: We left behind an issue on scoping that I would like to get back to, because I think it is important, and that has to do with the October 1 issue of known break location line piping. I guess support by known break location line supports, seismic. Why are they not in scope?

MR. HALE: The supports are in the scope.

CHAIRMAN BONACA: I understand that. Why are the segments not in the scope?

MR. HALE: In looking at our licensing basis regarding high energy line break and flooding, we felt that we had already accommodated pipe failure aspects.

Now we are working with the staff right now and understand the concern they have raised, and we are in the midst of responding to their open item.

Our feeling is that our current licensing basis is acceptable based on approved flooding evaluation and our high energy line item, but we understand the staff's concern. So we are taking an additional step, and looking at our plant regarding the assumptions that are being proposed.

And essentially the assumption is that aging would change the assumed break locations and this sort of think for systems containing fluid and steam. So we are evaluating that.

The supports have always been in the scope, and another point that I need to raise is that we have got a number of non-safety related systems already in the scope, including the piping.

The Turkey Point fire protection brings in numerous systems in the Aux building that are non-safety related. So the pipes wouldn't even scope there.

So we are walking or we are in the midst, and in fact we are going to work with the staff, understanding their concerns. And we will probably identify some additional lines that we will include in the scope.

CHAIRMAN BONACA: And I am sure that you will agree that if you had a segment between supports

that is likely to corrode, or whatever, and then fail, and then fall over into other systems, that would not be acceptable. You don't disagree with that do you?

We are trying to understand the logic. This is the second application that we have seen in which there is this issue. The first one I think had different connotations there, because they, I believe, had seismic qualified supports.

And then they were looking more at zones and you are not here. But try to understand why this issue is there, and whether or not -- and we will understand that this afternoon that there will have to be specific items on the part of the staff for licensees in this particular area.

MR. HALE: A lot of it has to do with your current licensing basis. You know, when do you assume the seismic occurrence. You know, we all went to the older plants when they went through A-46, and you just had to show that you had shut down the plant with a seismic -- a given seismic occurrence.

If you jus say that failure can impact safety related equipment, period, well, that is a difference basis behind -- you know, that is saying, okay, I have got the seismic occurrence, and I have got the LOCA.

And so if you take the definition, "affects safely related period," you have to go back and look at your licensing basis as to what your assumptions are. Typically most of us don't assume an earthquake with design basis events.

MR. ROSEN: Notwithstanding all of that, and going back and looking at the license basis, and all of that, where we end up on this issue I think is that we have an unsafety related piping out to a non-safety related support, where we have the support in the aging management program, and the aging management review. But the piping itself, which is the load carrying member out to that support, is not.

MR. HALE: Well, let me correct that. We did include piping segments that provide structural support in the scope for that very reason, because it is an extension of the support.

What we are talking about here is a non-safety related line that sits above a safety related piece of equipment.

MR. ROSEN: Where the non-safety related line does not provide any kind of structural support.

MR. HALE: Right. We did include the pipe segments. Remember when I was talking about screening and stress analysis? We actually took whatever

portion of the piping was credited downstream of the boundary, as in the scope of licensing. That pipe is in the scope of licensing.

MS. THOMPSON: I would also like to add that in addition to what Steve described, which was the piping segment that is connected to the safety related portion being considered in the scope, the support is being considered in the scope.

We also considered protective features, such as sump pumps and actual protective features for leakage considerations in the scope as well. So our difference between the staff's open item and what we have already considered in our application is actually very small.

We feel like we understand that, and we would like to -- you know, we have asked our project manager if we could actually go through our resolution on that next week. So we feel like we can move forward on that.

And for Turkey Point, as I think you all mentioned earlier, a number of the areas are outdoor as well, and so the things that are underneath, those safety related pieces of equipment, are actually designed for wetted environments.

MR. HALE: Outdoor service.

MS. THOMPSON: Outdoor service. So our scope tends to be quite small in this area. but we feel like we can move forward on that. So our delta is actually a relatively small delta.

And we understand the staff's position, and we will work forward on that. I think our difference has been consideration of what we consider our current licensing basis.

But I think aside from that, we understand the staff, and we will work forward to resolution.

CHAIRMAN BONACA: Okay.

MR. HALE: Okay. Any other questions? If not, I would like to go through these three points. With regards to the AMR technical resources we had available to us, although only five generic technical supports were submitted to the NRC for review, the Westinghouse Owners Group, we generated over 15 of these generic technical documents.

And it incorporated basically the history of all of the Westinghouse plants. So we have that integrated in it, and it pretty much covered every component that you would have in the power plant.

And certainly in the early '90s, NUMARC, with EPRI, had the industry reports, which were submitted to the NRC for review. The B&W tools, I'm

sure you have heard this, all of the owners' groups have bought those tools that look at the evaluation of aging effects for non-Class One mechanical systems and civil structures.

You have to tailor it to your plant. You know, we did an evaluation which took the tools, and applied to to Turkey Point. We looked at the Aging Management Reviews performed by a particular applicant, and that we felt did a fairly detailed review of.

We looked at submitted applications in certain cases, and if you have some unique materials, you actually get into materials handbooks. We also have a materials group and a materials lab, and so we also had at our disposal laboratory results of analyses that have been formed through the years in support of corrective actions.

And we are very active in the industry groups, and so those were the technical resources that we had at our disposal.

And with regards to operating experience review -- and I feel that this is one of the strengths of the aging management reviews that we performed.

Not only did we look at the industry stuff that was out there, both in the INPO and the NRC, and

how we responded to that, but we also looked at all the non-conformance reports and condition reports in our database.

We looked at our event response team reports. These were teams that are formed after a major event. License event reports. We looked at all the FDL metallurgical laboratory reports that we had.

And then we actually -- we were on site, and so we spent a lot of time with the system and component engineers in going over our aging management review results as to what they are actually seeing out in the field.

We used this as input for identification of our aging effects, but another positive though is that it also shows that we are managing aging. If you are identifying items requiring corrective action, it says that you are out in the field and you are out there and actually managing aging of these systems.

So we draw on a fairly extensive database, in terms of input into our operating experience.

CHAIRMAN BONACA: Did you look at the GALL report that was being developed at that time?

MR. HALE: Yes. In fact, we were very active. You know, the industry established technical review groups -- mechanical, civil structural, and

electrical -- and we have representatives on all three of those.

In fact, our mechanical lead, he is probably one of the most knowledgeable of the mechanical folks in the group. In fact, he is providing most of the input to upgrades to the B&W tools right now.

And in addition to all of that, we felt that it was worthwhile to have independent eyes come in and look at the results. And not only the results, but out of procedures, and the way we approached this.

We had license renewal staff members that actually gone through the process with the NRC review it. We actually had some ex-NRC and other consultants come in and look at the way that we had done our aging management reviews.

We felt that because Framatome had submitted generic reports, and gone and gotten SERs, that we wanted to have the technical experts from Framatome review all of our Class One AMRs.

CHAIRMAN BONACA: Which components were manufactured by B&W?

MR. HALE: Our reactor vessel, but in terms of just what are the aging issues associated with rack cooling components, they had gone through

quite an extensive review of the generic reports for the B&W plants.

So we felt that the type of aging issues and that sort of thing were worthwhile to have him come in and actually review in detail the results and conclusions we had reached.

And then in the electric/I&C areas, we actually had our corporate electrical chief, who is also -- I guess, Liz. that he is an IEEE chair, actually review our electrical/I&C aging management review results.

CHAIRMAN BONACA: I had a question, and I don't know if it fits here, but what is the -- well, material-wise, what is the basic difference between Class I piping and non-Class I piping?

MR. HALE: It is essentially the definition consistent with what we call Quality Group A, reactor pressure boundary up to the second normally closed valve.

It's just that you have orifices sometimes breaking the boundary between Class I and non-Class I. For example, attached to the reactor coolant system, and that's why you will see a section in the RCS on non-Class I.

Well, what I was looking at was the aging

-- the facts to be managed. There were some differences there. For example, you know, Class I piping not subject to wear.

And then non-Class I piping subjected to loss of material by a different means or several means. And I was just asking in general the difference in materials.

DR. SHACK: Well, a lot of it is stainless steel versus carbon steel. So one is essentially immune to erosion, and the other is going to be susceptible to erosion.

CHAIRMAN BONACA: But non-Class I piping has no cladding of any type?

MR. HALE: The Westinghouse plants, the piping is stainless.

CHAIRMAN BONACA: For non-Class I.

MR. HALE: No. Well, it depends. Typically systems that are exposed to boric acid are stainless steel.

CHAIRMAN BONACA: Well, boric acid wastage -- I mean, you have those for Class I, and need for chemical control, and starts corrosion and cracking issues.

So there was just such a difference in the application between the issue of where, and where

simply there is no monitoring for wear of Class I components, and were identified by several means on non-Class I. But I understand, and that is really the difference in the material.

DR. FORD: Could I ask again a very generic question. If you look at this slide and the two previous ones, can you -- and everything is great, great words.

Can you give an example -- for instance, for the specific situation of baffle bolt cracking, there is a physical phenomena. How do you use these technical tools, the technical resources, the AMR, the operating experience and the peer reviews, to solve that particular problem?

And I realize that I am asking you a half-an-hour talk, but if you could just kind of bulletize things. What information did you get from these various resources to come up with a better inspection program and correction actions for baffle bolts.

MR. HALE: For baffle bolts, the WOG report, we utilized that.

DR. FORD: Yes, I have got this thing here, but there is no data shown in this.

MR. HALE: Oh, I understand. You will see some data that we have presented in our REI responses,

where we have provided more data as they are analyzing and looking at these various baffle bolts.

But we identified radiation system and stress corrosion and cracking, stress relaxation. All these aging effects for the baffle bolts, and this is based on the experience that we have seen, and also on expected experience in the future.

So we have established for those bolts -- that is part of our -- the rack vessel internals inspection program over and above Section 11. I believe we are planning to do one early in the renewal period on Unit 3.

DR. FORD: And inspection process?

MR. HALE: Well, the inspection process will follow very closely what has been done at the previous Westinghouse plants, where they have actually done ultrasonic examinations of the bolting material. I believe you also -- and, Roger, correct me if I am wrong, but you actually pulled all the bolts; is that right, or just the ones that had indications?

MR. NEWTON: At Point Beach?

MR. HALE: Yes.

MR. NEWTON: At Point Beach, we had a removal program, where we were taking the bolts out and replacing them with new material, and a --

CHAIRMAN BONACA: Could you come up to a microphone, please?

MR. NEWTON: Yes. I am Roger Newton, and I am or was the Chairman of the Westinghouse Owners' Group on the baffle bolt program. I am also from Point Beach Nuclear Plant, an older plant, and we did participate as part of the Westinghouse and EPRI baffle bolt program.

And as part of that program, we were looking for actual experience of bolts in nuclear plants, and Point Beach is one of the older plants. So we volunteered to do a bolt inspection and replacement program to add information to the industry.

We have 347 stainless steel bolt material, and older plants have that, and newer plants have 316 stainless steel bolt material. So there are two different categories of plants in the Westinghouse family. I think Turkey Point has 347 don't you?

MR. HALE: I believe so. I would have to check it out.

MR. NEWTON: You are old enough to have 347. WE did this just to provide information to the industry on what aging was looking at in this particular area and to answer questions for the NRC, and provide a benchmark that at this age and time what

are we seeing.

And as part of the program, we inspected all of the bolts, and for those bolts that had indications, we said, well, let's see if we can replace the pattern, plus the additional bolts that had indications.

So we ended up replacing -- well, I knew those numbers by memory at one time, but about 170 some bolts throughout the internals. Most of them did not have indications because they were in the pattern that we wanted to replace to.

But we did replace about 50 that had indications. We found that of those 50 that 9 did have cracks. We tested almost all of the bolts that were removed by structurally, and put them in a took and breaking them to indeed see what their characteristics were.

All of this information was put together in a very extensive report and provided to EPRI, which was also provided to all of the Westinghouse Owners' Group members. So that's part of the operating experience for 347.

Similarly, an older plant that had 3/16ths stainless steel replaced their bolts as well. They found that for that aged plant that there were no

indications and no failures.

So we have a mark in time with respect to the bolt behavior in a Westinghouse plant. So that is part of the operating experience that the industry is now relying upon.

The MRP program of EPRI is continuing to pursue the bolting issue, and looking at longer term effects of aging, and looking at whether voids play a role in it.

There was an integrated program that will support all of us out into the future and that pretty much all of us will take credit for as part of the Aging Management Program, and deciding what the next steps are. And so that is somewhat of the operating history.

DR. FORD: So your aging management program for Turkey Point is sort of a living document?

MR. HALE: Yes.

DR. FORD: And tomorrow it will change?

MR. HALE: Yes. If you look at the -- right, and because I am a member of the Westinghouse Owners' Group, we have all this information available to us either in the WOG technical reports, or information as brought forward.

So in answer to your question, in terms of

where, the participation in the Westinghouse Owners' Group is the primary source of information relative to baffle bolts.

But, yes, if you look at our application, as well as our response to REIs, you will see that -- and in fact the staff has asked us to submit our inspection plan, detailed inspection plan, in advance of performing the inspection.

DR. FORD: And the fact that the distance rate tends to go on logarithmically with fluence, your response time to these changes frequency will increase, or your response frequency will increase?

MR. HALE: Yes.

MR. ROSEN: The response time will go down.

DR. FORD: Will go down, yes.

MS. THOMPSON: I think that you have to look at all of these as living programs, and I think the most current example is the Alloy 600 program, where when we submitted the application, it was prior to any of the discoveries that happened at Oconee and so forth.

And now you look at it, and we are shutting down one of the units for a scheduled refueling outage next week, and we have an inspection

that the reactor had planned.

And that will be factored in, and that is one of the open items. We have responded to the bulletin. It is going to be a living program. We are going to incorporate that in, and I think that particular open item really just becomes a matter of, yes, this is a living process.

And we just happened to be in the middle of our licensing process here for renewal, but you would expect this type of change as items come up. And we will do the right thing and update our programs accordingly.

MR. HALE: I think the one thing -- and this has been a good learning process for us all, in terms of -- well, because the aging effects evaluation that we have performed, it not only looks at what experience has happened, but what we would expect to happen, in terms of aging effects.

So I think that we have improved our knowledge level, in terms of trying to get at the issue that you are raising in terms of avoiding the failure before it occurs. I know that I know a whole lot more about aging of the plant.

DR. FORD: Thank you very much.

MR. HALE: And one of the things that we

did that I mentioned previously was the development of our program basis documents. For each program that you see in the application, we have what we call a program basis document.

The program basis document provides a detailed evaluation of the 10 attributes, the summary of which you see in the application, and we felt early on that we needed to do this, because if you show the program to someone, and they say, well, show me the program, and it may be as many as 10 to 20 procedures that are being implemented, but you don't have this umbrella that says this is what defines what the program is.

And in some cases, you do, but in other cases, especially some of these non-regulated programs, it is not as clearly defined. So we felt that it would be a good idea to have a basis document which bridges the program described in the application with actual implementation in the field.

This basis document identifies specific plant procedures which will implement the inspections, the walkdowns, or whatever may be involved, and it also is a place to capture all of our specific program commitments.

I think as a result of going through this

process, we identified about 80 program commitments, and it is down at the procedural level as to when we will do the inspection, and what changes to programs, and what specific procedures need to be made.

And this was also one of the topics that the inspection team came down and looked at when they did the aging management review inspection.

MR. ROSEN: When this kind of a program requires you to change a procedure, does the procedure reference back to that this change was as a result of the aging management review done on the license renewal?

MR. HALE: Yes, we are going to put a statement on every procedure that implements that program that this is a commitment for license renewal, and we will identify -- because some of the procedures may be broader than the specific scope related to license renewal.

And we will highlight the specific steps, and the specific components that are covered in that particular procedure for license renewal. So any change that occurs in the future is going to have to go through a review process to ensure that it addresses license renewal.

MR. ROSEN: This is to preserve the

license renewal commitments for the extended period of operation?

MR. HALE: Yes, because where the rubber hits the road is in the procedures at the site. With regards to TLAAs, you have got six criteria that are specified in 10 CFR 54.3.

We did a fairly extensive review of all of our current licensing basis documents, and our licensing correspondence is tech searchable. We looked at tech specs, and the USFAR, as well as the DBDs.

We identified potential candidates for TLAAs, and then we reviewed them against the six criteria. The methodology is prescribed in NEI 95-10, and we were consistent with that methodology.

As part of that process, we also looked to see if there were any exemptions involving TLAAs, and we did not find any. The TLAAs for Turkey Point as described in the application, a reactor vessel irradiation embrittlement, Class I and non-Class I fatigue, EQ, containment tendon relaxation, and containment liner fatigue.

And then we had a case of wear/erosion, where there was a TLAA associated with -- a couple of cases where there was wear/erosion associated with our

current licensing basis, and then crane fatigue in some of the major cranes.

With regard to our conclusions, the aging management programs at Turkey Point we feel are adequately managing aging effects so that the intended functions will be maintained consistent with our CLB for the period of extended operation.

And, secondly, all our TLAAs from Turkey Point were identified and evaluated, and shown to be acceptable for the extended period of operation. That concludes our presentation. Are there any more questions?

CHAIRMAN BONACA: I have a number of questions. However, our component are systems specific, and so we will go through when we go through the SER. I am sure that you are going to be here for the rest of the day.

MR. HALE: Yes. Yes, I will be here.

CHAIRMAN BONACA: And so we can ask you to provide information at that time, and that will be the best way to do it.

MR. HALE: Okay.

CHAIRMAN BONACA: Thank you. And with that, I think we should take a break now, and we will resume the meeting at 20 after 10:00.

(Whereupon, the meeting was recessed at 10:03 a.m., and was resumed at 10:21 a.m.)

CHAIRMAN BONACA: All right. Let's resume the meeting, and we have now a presentation by NRR of the Safety Evaluation Report by Mr. Raj Auluck.

DR. AULUCK: Good morning. My name is Raj Auluck, and I am the project manager for the Turkey Point license renewal effort, and the purpose of today's meeting is to brief the subcommittee on the staff's SER related to the Turkey Point license renewal application, and to respond to the questions that the committee members may have.

I will provide an overview of the safety evaluation report, followed by other staff members summarizing their research of the review. As the slide shows, we have a number of staff members scheduled to speak.

We do not have that many open items, but for discussion purposes, we have tried to make the slides complete so that when the appropriate time comes, you can ask your questions, and we can respond to your questions.

And most of these staff members have participated in the NCR, and at this time, I would also recognize Mr. Steve Koenick, and he is my backup

project manager, and helped prepare the SER also, and he is getting ready to take on any other future applications.

As you can see, this is an application submitted on September 8th, 2000, and this is a little over a year. It is a three loop Westinghouse, Pressurized Water Reactor, and a two unit site, and each is designed for 2300 Megawatts.

Now, the site is shared by two gas and oil generating units. The plant is located about 25 miles from Miami in Florida City, the same distance from the Keys, Key Largo.

The license expires on July 19th of 2012 for Unit 3, and April 24th for Unit 4 -- well, for Unit 4, April 10, 2013. And they are requesting a 20 year extension to these dates.

DR. ROSEN: So those are typos on the slide that is Unit 3 and 4?

MR. AULUCK: Yes, correct. It should be Unit 3 and 4. And for the different applications, we performed an acceptance review and sent a letter to the applicant in October, and attached to the letter was this targeted schedule.

As you can see, we have met most of the milestones. The next important milestone other than

ACRS meetings is for the applicant to respond to the open items in the SER.

Now, this schedule is based on our standard 30 months schedule. Since there is no hearing -- the hearing proceeding has been closed -- and so this will be changed to 25 months, and we are in discussion with the applicant, and we will see where we are.

They have requested with respect to this schedule an earlier date, and so we are in the process of discussing that with them and with our staff how to support any new date.

The SER format follows pretty much the application for. The difference is that we have in Chapter 3 all the AMRs and AMPs that are in the application contain that information in Appendix B and Appendix C.

And Chapter 1 is the introduction and general discussion; and Chapter 2 is the structures and components; and Chapter 3 is the AMRs as I mentioned; and Chapter 4 is the TLAAs.

As was mentioned by Steve a little earlier, this is the first PWR and FPL participated in many industrial groups, and they were an active participant in the Westinghouse Owners Group.

CHAIRMAN BONACA: It is the First Westinghouse PWR.

MR. AULUCK: Westinghouse PWR. And the four Westinghouse Generic Reports were submitted to the staff for a staff review, and as mentioned earlier, the reports were not finalized. So the applicant did not incorporate those Westinghouse reports by reference.

They addressed all the issues there, and for the other reports we had several REIs, and all the applicant items, the action items, were in the report. But the safety evaluation of these Westinghouse reports were stand alone documents, which were not completed at the time of the application.

As far as the staff review, the staff identified open items,a nd the list is quite short. The first one is the scoping of seismic II over I piping systems, which was already discussed earlier, and we will go over it in more detail in the following presentations this morning.

There was an open item at Plant Hatch, and we especially asked the applicant to wait until the resolution on Hatch is reached, and the staff's position is clarified, which has been done now.

So now we are in the process of discussing

further the applicant's position on Turkey Point. The staff's position will be given later on, but it is very clear that all II over I piping should be within the scope of license renewal, and we will go from there.

CHAIRMAN BONACA: What kind of additional burden does this inclusion of all II over I piping -- for example, for Hatch. I understand this morning from the presentation that it is not much of a burden for Turkey Point. It doesn't have much piping.

MR. AULUCK: Well, Hatch probably did some several walkdowns and they did have to include some systems which were not previously included.

CHAIRMAN BONACA: No, what I am trying to understand here is the logic of the applicant, because this issue is a current issue, and clearly there must be a significant difference in scope to justify this, and so we will try to understand the logic.

MR. AULUCK: I think we will have that later, and it depends on how each plant briefs and identifies those systems. In the case of Turkey Point, they went with area approach, and what is contained there.

If I remember there were 7 or 8 areas only where they have this potential interaction. So, the

staff is prepared to discuss that this morning.

A second open item is the reactor vessel head alloy 600 penetration inspection program. Leaking from the vessel head penetration nozzles has been identified recently at some plants, and so the staff is working with them to resolve this issue.

And so our expectation is that whatever resolution is reached with industry that Turkey Point will follow that, and we will have a presentation on this issue also.

CHAIRMAN BONACA: So this is not an open issue because there is a difference of opinions between the staff and the licensee, and there is an emerging event issue that you just are expecting ot have some commitment from Turkey Point?

MR. AULUCK: I think whatever resolution is reached between the staff and industry, and Turkey Point is part of that -- and since we do not know the resolution of that is, we consider it an open issue.

MS. THOMPSON: I would consider this an emerging issue, and we have responded to the bulletin, but of course that just happened very recently. Whereas, our application and the REI process happened before the Oconee discovery.

CHAIRMAN BONACA: Yes. I am trying to

understand what the closure means. It will be quite a while before there is a full resolution of the technical issues. What is necessary to close this issue from the perspective of the license renewal? It seems to me just a commitment to --

MS. THOMPSON: Right. Right.

MR. AULUCK: And so we don't perceive any problems here, but at this time we are not in a position --

CHAIRMAN BONACA: No, I understand.

DR. SHACK: Just out of curiosity. You have an outage coming up. How inspectable is your plant from a visual point of view? Do you have insulation on the head?

MS. THOMPSON: Yes. The insulation issue tends to be more of an issue for the combustion engineering plants. So Turkey Point being a Westinghouse plant, there is insulation present, but we feel like we can perform the inspection.

We are feverishly planning this activity. Obviously it is something that has just come up recently and the timing of it, and to try and take action this quickly truly is a challenge for us to do at the station.

We have taken one of our main managers off

to the side basically, and he is focusing all of his attention on trying to get this activity planned to be ready to go really next week.

So for those plants, just for your understanding of the type of impact this is, it is not easy to plan something that is done in a such a high dose area. Plus, it is relatively costly.

So it is something that we really are very focused on right now to try to accomplish it at ALARA, and also in a cost effective manner to be able to get it done in this period of time.

CHAIRMAN BONACA: This inspection that you are planning, is it imminent?

MR. AULUCK: In October, I think.

CHAIRMAN BONACA: In October? All right. I didn't understand that from the SER. I thought that you advanced your inspection based on the NEI schedule as shown here, but I didn't realize that you had one so soon.

MS. THOMPSON: Yes, that is the advanced schedule. Our refueling outage was scheduled to start this coming Monday. So we are basically within a week now of when we would start, and when the head is removed from the reactor is really our start time for performing the inspections. So that is the first week

of the outage.

CHAIRMAN BONACA: Okay.

MR. AULUCK: The third item is reactor vessel underclad cracking. In their application the applicant indicates that the generic evaluation of underclad cracks have been extended to 60 years using fracture mechanics evaluation space on a representative set of design transients with occurrences extrapolated over 60 years.

And they also mention that the number of design cycles and transients are presumed to encompass the WCAPS 15338 analysis, and this WCAP was submitted for staff review in March of this year.

So it is undergoing a review, and the review has been completed, but the SER has not been issued. The current schedule that the staff evaluation will be issued by the middle of next month.

CHAIRMAN BONACA: Now, the reactor vessel was designed and constructed by B&W.

MR. AULUCK: Yes, to Westinghouse specifications.

CHAIRMAN BONACA: All right. So this evaluation is being done by Westinghouse, but -- well, I am trying to understand why wouldn't it be -- that you would have an B&W evaluation on that.

MR. HALE: Well, B&W fabricated the vessel, but it was built -- the vessel was built with Westinghouse specifications.

CHAIRMAN BONACA: Okay.

DR. SHACK: There was a question that I meant to ask before. Your fatigue management program, I take it that wasn't a new program for license renewal. What was the driving force for instituting that? What problems were you addressing when you instituted that?

MS. THOMPSON: I think you are referring to the fatigue or what we call the fatigue monitoring program. Basically it is a confirmatory program, and whether you look at the current term or the renewal term, we are confirming that we are not exceeding the number of cycles that were assumed for operation.

DR. SHACK: But you had some locations though that were approaching usage factors of one?

MS. THOMPSON: No, not necessarily. We had some that were higher as I think all plants do. Some of the surge lines and so forth that have been evaluated in some plants you will find some of the nozzles and spray lines, and so forth, just depending on the particular plant.

But I think that has been a confirmatory

program to make sure that we are staying within our design analysis regardless, and to keep track of that.

MR. AULUCK: Okay. The next item is an open item and is acceptance criteria for field erected tanks internal inspection. We will have a discussion on this item later on in the presentation, but this is a new program used to manage in part aging and effects of loss of material due to corrosion of the tanks within the scope of the program.

And this chemistry control program will -- two of these programs will manage corrosion inside the tanks. At this time, at the time of the staff's evaluation, the applicant had not developed a program with acceptance criteria and limiting procedures.

So that is one of the reasons that is an open item. So as soon as we receive the information, we will review it and take the next step.

CHAIRMAN BONACA: And this includes all the other RWST and --

MR. AULUCK: Yes.

CHAIRMAN BONACA: And on the third item that you had, that is the Westinghouse topical report being reviewed for the reactor vessel underclad cracking. When do you expect to have that review completed?

MR. AULUCK: The middle of October. It is pretty close. The staff is completing the process of management review.

CHAIRMAN BONACA: So it seems to me that the potential for closure of this open item is in the very short term. What is the understanding that you have of that?

MR. AULUCK: As I understand, right how the current scheduled date for a response to the open items is December 17th. The applicant is targeting for the end of October or the first week of November. Around that time. So at least six weeks.

CHAIRMAN BONACA: Okay. Thank you.

MR. AULUCK: And this is a slide on inspection activities. So far we have performed two inspections. The first was for a week in may for scoping, and a two week inspection on the AMRs, split into one week segments.

This is in addition to the staff audit done on the scoping in November of last year. I think that besides --

CHAIRMAN BONACA: So in total you had four inspections?

MR. AULUCK: Yes, we had four site visits in four weeks, yes. Once we were there, we discovered

that all the projects developed for license renewal were under the plant's QA program, as I understand there were no QA procedures for license renewal.

So they overlooked procedures or instructions on quality instructions, numbering 5.2 5.3, 5.4, and 5.5. And each of these documents provide guidance to their engineers and staff members how to scope the document, and how to scope the systems, and how to screen the system, and how to review the AMR.

This is more like a step-by-step, and so we looked at the application here things were not as clear and there was a lot of questions from the staff, and which were answered by redirecting elsewhere in their applications.

But once we went to the site and looked at some of those quality instruction procedures, and taking it step-by-step, it was really helpful. And then in addition to that there was backup documentation as Steve mentioned for each program basis documents. And descriptions for procedures and assistance.

And they were easily accessible. So these inspections did not find any major findings, but there were several minor discrepancies and the drawings were

not consistent with each other, or with different documents there were some discrepancies.

And then once we told them, they were reported to the appropriate programs and followed up on, or they were addressed elsewhere. And the team did review several documents for the new programs, and for the existing programs.

With that, if you have no questions that I can answer, we will then move to the next presentation.

CHAIRMAN BONACA: We as a committee have expressed interest in the form and clarify of the documentation, because it is a complex evaluation, and it is important to have documents that will be understandable.

Some of the members of the subcommittee had an impression that this was a good application insofar as clarity of the form. What is the perspective that you have?

MR. AULUCK: I think it is -- I mean, this is my first -- and I have been involved in project management of plants, and licensing, and operating for a long time. But this is my first experience with license renewal.

And I had worked at Turkey Point maybe 10

years back as the operating director. So I knew a little bit more about the plant. But they have a good staff and that might have helped.

The application contents were not as good as you would expect. An example, when we first received the application, and it was assigned to different staff members, and started talking and had requests for additional information.

So we received more than 300 REI requests -- and approximately 325 -- and when we started reviewing them and found that several of them were simple, then we had several conference calls, and we found that the information is already available in the application elsewhere and in different documents.

And as a result of those few meetings and telephone interactions, we reduced the number without any new information from 325 down to 215. So once we go to the site and we see those additional documentation, and which verifies the application.

And I am sure the next applicant will look at Turkey Point's REIs and their process procedures, and follow it and improve on it.

DR. ROSEN: Would you say that the hundred or so REIs that were really answered in the document, but the staff didn't find them, that was the result of

the staff's inexperience, or the documents being so opaque?

MR. AULUCK: I think it was not the staff's experience, but it was a navigational problem within the application. The information was not readily available in the sections that the staff was looking at.

And it was rational for the applicant to include that information elsewhere, and sometimes there is a time factor and only a short time to review the whole thing, and come up with requests for additional REIs.

DR. ROSEN: We are always searching for more ways to be more efficient.

MR. AULUCK: Exactly. And do we have lessons learned from the different applications? We are preparing lessons learned for internal use so that it gives us more time up front to review the application, and then we will have fewer REIs, and will improve the process.

DR. ROSEN: Yes, to improve the process, and no search for blame.

CHAIRMAN BONACA: Now there is a standard form that pretty much is being proposed between NEI and the staff, and so on, and so forth. So that is

why we are asking this question. I think we want to monitor as a committee how this is taking place, and in-part I think also that when you do review the application that you have different reviewers, to which you assign individual chapters, right?

MR. AULUCK: Right.

CHAIRMAN BONACA: And that's why probably the issues with various problems. There isn't one person that reads it all and says this is there or there.

MR. AULUCK: Well, yes, and that's part of the process.

DR. FORD: I have another question. These things that we have been talking about have been navigational and procedural as technical people. When you look at the application, there is a whole lot of technical questions that will come up.

Some of them might be minutia and some of them will be major impacts. How does your staff go through deciding what they should be really looking at technically, as opposed to the minutia? And how do they evaluate that, and how do they get the information necessary to have an informed review, a technical review of the application?

MR. AULUCK: Well, I think as a technical

person, they want to feel fully comfortable with what they are preparing in the safety evaluation, and whether it is minor or major, they put it in writing.

And if they don't put it in writing, they will call the project manager or their immediate supervisor, and say, hey, you know --

DR. FORD: But that does not answer the question of how do they prioritize what is important and what is not. For instance, boric acid wastage may or may not be of higher importance than, for instance, baffle board cracking, or the other way around.

How do you decide? Is it based on the formality of a risk-informed analytical approach or what?

MR. AULUCK: I think there is no priority basis. I think it is because the information is not sufficient in the application, and the application is not sufficient. There is no priority of REIs that should go first than the other.

MR. KOENICK: For all structures and components that are within scope, they have to have full confidence that they can make the findings. So they have to address that to their satisfaction, and that's where you get the capabilities of your reviewers and their supervisors to ensure that they

have done a thorough review and can make the findings that they need to for every structure and component that is within the scope.

DR. FORD: I just keep coming back to this concern I have. We might find a crack in the pressure vessel and which was not perceived yesterday, and it was not predicted yesterday, but that would be a major event.

In your process of when you are looking through these applications does it go through your mind how are they managing the program proactively to decide whether they are going to have a major event tomorrow?

MR. AULUCK: That will be under the part of the current license.

MR. KOENICK: You have to go back to what the fundamental principle of the Commission when they developed the rule; that you rely on the regulatory process, and the regulatory process is continuing.

DR. FORD: I guess I am questioning the approach. I am questioning the technical completeness of the regulatory process that was developed years ago and before we had some experience.

MR. ELLIOT: Barry Elliot, Materials and Chemical Engineering Branch. He is describing the

regulatory process. The best example is the one that we just finished talking about, which was the reactor vessel head penetration cracking.

When we originally did the review it was fine. It met all the requirements that we had established at that time. That's why it became an open issue, because it was a new thing.

So the answer to your question is if we find a new issue, and it is at the time that we are reviewing the application, it becomes an open issue. If we have already finished the review, then it is handled as part of the regular licensing process.

That is our procedure, and you are seeing it right here on Turkey Point. We are putting it into effect.

CHAIRMAN BONACA: For example, you may question why we did not inspect the heads before because we didn't see any cracks. That is really a question regarding the current licensing approach to it, and not really the elements of license renewal, which is the assurance that the program that you believe is correct or adequate will be carried over the period of the license renewal.

And the basis for which you believe it is going to be effective from 40 to 60 years. So the --

DR. FORD: I can understand the replies, but I keep coming back to we approved Oconee, and then we had the embarrassing situation two months later to have the vessel head penetration cracking, which to the technical community was no surprise.

CHAIRMAN BONACA: I don't think there is any expectation that we would not have new events taking place that would were never seen before. I mean, there is no doubt in my mind about that.

DR. FORD: I am just questioning the process.

MR. ELLIOT: We had a vessel head penetration program before Oconee, and we could argue all day long how effective it was. But we had it, and all we are doing now is trying to figure out do we have to revise it. How much do we have to revise it.

We've had a program, and the issue now is what do we need to do to revise it, and whatever answer we come up with will affect Turkey Point, and will be part of the resolution of the open issue.

DR. FORD: I guess I am on a crusade.

CHAIRMAN BONACA: But I think it is a significant question that you are asking, and it is a legitimate question, because it goes to the heart of how long are you going to run these plants, and we

don't have an answer to that, except that we feel comfortable evidently with the current process to go from 40 to 60 years.

But there is no doubt that for components that there will be surprises coming through, because they age, and that's why the focus is on long-lived passive components.

So I think it is a good question that you have. Unfortunately, I don't think we will be able to predict all that is going to happen.

MR. AULUCK: Okay. Our next presentation will be by Greg Galletti, on the scoping and screening methodology.

MR. GALLETTI: Good morning. My name is Greg Galletti, and I am with the Division of Inspection Performance Management Branch of NRR. I am responsible for the scoping and screening methodology Review.

What I would like to do is briefly go over the scoping and screening method with you that we have performed, and then discuss the one open item on seismic two over one that we still have currently.

Initially let me start off by saying that when we do the scoping and screening methodology review that we really have three goals in mind.

The first goal is primarily to ensure that the program that is described by the applicant is comprehensive and detailed enough to ensure that the requirements of 55.4 are completely covered.

The second goal that we have is to go and review design documentation and supporting information that the licensee has developed to ensure that they have done a comprehensive review to ensure that the current licensing basis has been considered for the purposes of the review.

And the third main goal that we come into this review with is to go and review the implementing guidance that is provided by the licensee for their own personnel to try to get an understanding of how they have implemented the requirements, ensure that the implementation is consistent across their engineering staff, to ensure that they have done a comprehensive and detailed review of the guidance and the requirements for the performance of the review.

And in doing this three goal tiered approach, the staff usually uses a two-tiered approach. This is the approach that we have taken in the past.

We initially start off with a desktop review, which is done in-house, where we review the

application in detail, and we also review some of the background documentation that is provided, such as the updated safety FSAR.

We would look at any other design documentation that we would have on the docket that may be pertinent. The question that had come up earlier this morning about looking at the EOPs, while we don't specifically look at the EOPs, we did in fact look at the Westinghouse ERG, emergency response guidelines, the parent documentation for the development of the procedures.

And just to get a better fundamental understanding of the design of the plant, the application of mitigation strategies that the licensee has used, and just to get a better general understanding of how the plant was designed and is to be operated. The second --

DR. ROSEN: With respect to that, with the EOPs and the ERGs, earlier this morning we heard that it was not a criterion under the license renewal rule to review equipment used in EOP for aging management.

MR. GALLETTI: That's correct. If you look at the guidance in NEI 95-10, for example, source documentation that could be used to support the scoping and screening methodology, there is a litany

of information that is available to a licensee to use for that purpose.

It is really left up to the applicant as to which of those documents best serves them for that purpose. They may or may not choose to use the ERGs or the EOPs because there may be some other design documentation like the maintenance rule scoping, and there are equipment lists, and which provides the same level of information, and gives them a reasonable source for coming up with the conclusions as to what should be scoped and screened in accordance with 54.4.

So while it is not a firm requirement that they look at those documents, for the purpose of the staff's review and getting a fundamental understanding of the plant, the staff had that information available to it, and felt that it was appropriate to use that information.

DR. ROSEN: Well, let's cut to the chase on this one. What I am concerned about is did the staff or does the staff have an adequate basis to conclude that the equipment that operators would use throughout the extended period of operation for responding to not normal events, or accidents, would in fact function and not be degraded by some aging effect that we have not identified yet?

MR. GALLETTI: Yes. I think that is clear that the basis for the entire approach as to how we perform these reviews, and how the application was put together in the first place.

It is really fundamentally if you look at the requirements of 54.4, those criterion in the 54.4 must be addressed by the applicant. They must ensure that the safety equipment is in scope.

They must ensure that non-safety that could affect the function of that safety is in scope. By doing so, we ensure that all that equipment that is necessary for vent mitigation is in fact covered, and perhaps subject to an aging management review.

And the second tier of the approach that the staff has used is to actually do an on-site audit of the documentation and the process implemented by the applicant.

The on-site audit is typically about a week long, and generally we have 3 to 5 people on the staff on the team for the audit. We go through a detailed review of the design basis documentation that the applicants have used for the purposes of their review, and to ensure that the current licensing basis has been captured.

We go through in very strong detail the

implementing guidance that they have provided to the staff, and we go through and we use certain samples. We will sample a couple of systems in detail to ensure that the implementing guidance as written was actually performed, and those systems were scrutinized consistent with that guidance.

And based on the two-tiered approach, the desktop, as well as the on-site audit, the staff, for the purposes of the Turkey Point review have concluded that in general the approach that was taken by the applicant was consistent with the scoping and screening methodology that they have described.

It is consistent with the requirements of 54.4, and we believe it is robust and comprehensive that we had a positive safety finding.

We did have one issue that was brought up that I would like to discuss in a little bit more detail on the seismic two over one.

DR. ROSEN: Let me interrupt you again. Pardon me for making one point, and ask the question that you said that in your on-site audit that you looked at the instructions and guidance with the staff, and found them to be reasonable and appropriate.

MR. GALLETTI: Right.

DR. ROSEN: But the other piece of getting a process done correctly is the qualifications of the people using that guidance, and the training of the people using that guidance. Did you look at either of those things?

MR. GALLETTI: The way we captured the training of the people that were involved in the review was generally on the on-site inspection, we will go through as I said certain systems, and we will go through those systems with the cognizant staff that was responsible for the review.

So in doing so, we will question them to understand how they applied the implementing guidance to ensure that it was consistently applied. We discussed specifically the training aspects, and how did you train your people on these implementing guides.

And in fact the responses have been generally that the guidance is a quality document. It is reviewed by each of the staff. There were certain internal meetings if you will during the development of this implementing guidance to ensure that the guidelines were specific and did in fact reflect the approach that the applicant wanted to take.

So basically through a dialogue with the

staff, the applicant's staff that is, we had a reasonable assurance that they were well trained.

DR. ROSEN: Did you look into whether this guidance was included in the engineering support personnel training programs?

MR. GALLETTI: Not as such, no.

CHAIRMAN BONACA: I think that this is a good question and it also goes to the NRC stuff. I mean, how do you -- are the same individuals assigned to the same areas of different license renewal applications so that there is experience being built there, and the learning curve is high?

MR. THOMAS: Maybe I should answer that. My name is Brian Thomas, and I am in the Division of Systems Safety Analysis, Plant Systems Branch. And that division is responsible for the scoping and the screening of the SSEs that are within the scope of license renewal.

To the extent that we can, we are forming a license renewal review team if you will. To the extent that they are within the resource limitations and so forth, people are pretty much are assigned to the same areas.

So we have folks that have expertise in structures, structural engineering, for example, that

would review the scoping of the SSEs that pertain, let's say, to the structures, the yard structures, the containment structures. And similarly we take a similar approach with the systems.

CHAIRMAN BONACA: Okay. Thank you.

MS. THOMPSON: To address the FTL Turkey Point specific training, the engineers that participated in generating the actual license renewal documents that yielded the application, all received specific training on the procedures -- they were called quality instructions as what we refer to them as -- as part of their job orientation.

And there was a specific group of people that developed those documents, and then more of an overview and understanding of the concepts and bases, and how those would be applied in a long term basis from a commitment management perspective, as well as a configuration control perspective, the engineering technical personnel training program also included sections that were specifically dealing with license renewal.

And we have done that a couple of times already, and plan to continue to do that, particularly upon issuance of a renewed license favorable decision there.

DR. ROSEN: Well, thank you. That's helpful. Now, I understand what you said is that you have included the license renewal process, as well as those things that come out of the process that will have to be carried forward for the life of the -- for the extended life of the plant in the engineering support training program, so that it gets built into the infrastructure of the engineering organization as an ongoing matter.

MR. GALLETTI: Absolutely. That's correct.

MR. GALLETTI: If there is no other questions on the scope and screening review itself, I did want to discuss specifically the seismic two over one issue.

CHAIRMAN BONACA: And then after that I have questions regarding 2 or 3 systems, and why they were not included, and I will ask those questions after you.

MR. GALLETTI: Sure. I think that Brian will cover that as part of the scoping results section. As was brought up earlier today, the one open issue that we do currently have is characterized as seismic two over one.

And really for the purposes of the review

the staff is looking at this in terms of a little bit broader. It is really the application of the 54.482 requirement for inclusion of non-safety related SSCs whose failure could in fact impact a safety related SSC from performing its function.

As you know the genesis of this issue really came out of the Hatch review, where some questions were asked on some auxiliary systems, and whether or not certain segments of piping were in scope or not scoped.

As a result of that staff review and working with the licensee, several key issues came out. Generally for the application of 54.482, the staff would consider any non-safety SSC whose failure could impact a safety SSC as potentially within the scope.

What a licensee or applicant would have to do is really first of all identify what are their safety related SSCs, and then take in essence a spacious approach to determine what other components and systems structures within that vicinity could in fact impact those SSCs.

Once that is determined, then they would have to do a credible job of reviewing what sorts of failures could these non-safety related SSCs have that

could potentially impact those safety related SSCs.

With that fundamentally laid out the staff really came up with two options for applicants. In doing this review, they have the ability to either take credit for certain mitigative features if they could show through analysis that those features in fact would mitigate the effects of the failures of the non-safety SSEs that they are trying to credit.

A good example would be if a non-safety related pipe were to break and leak, or spill fluid on a safety related component, if there was some sort of shielding or mitigative feature that they could show could in fact ensure the safe function of that component, then we would consider that mitigative feature could be brought into scope.

And not necessarily requiring inclusion of the piping segment. The other alternative if they cannot show that that mitigative feature is sufficient to protect that safety related function, the actual segment itself would be brought into scope.

I think that is consistent with the staff policy as we have developed it, and now it is a matter of going to each of the applicants and making sure they understand that general approach is the approach that the staff is trying to provide people.

CHAIRMAN BONACA: But this is an approach as you said has been standing for a while.

MR. GALLETTI: Yes, certainly since the Hatch review.

CHAIRMAN BONACA: And you have in some specific cases where you have in fact mitigated protection of the component that you are concerned about.

DR. SHACK: This didn't seem to arise in three of the applications that you have approved already. Is that because of differences in their licensing basis or just the way that they have interpreted it? Have they interpreted it closer to what you have interpreted it?

MR. GALLETTI: I think it is probably a combination of those two things really. It's how certain systems in the plant are credited in their design basis as to whether or not they are performing a safety related function or not.

But then once that is actually determined, reviewing the non-safety equipment that could impact that needs to be done by those applicants as well.

Now, in the past, I think what we found is that in certain cases it was clear that this was a question raised by the staff and then in response

those applicants did something.

In other cases, they were more proactive, and as part of the application that level of detail was provided. But it is something as a result of the Hatch review that we are actually going back and revisiting some dialogue with those previous applicants to understand and clarify that.

CHAIRMAN BONACA: Now, for Hatch, the supports were seismic highly qualified are?

MR. GALLETTI: Yes, sir.

CHAIRMAN BONACA: And for Turkey Point, are they seismic highly qualified?

MR. GALLETTI: I don't think so, but could you answer that.

MR. HALE: They are non-safety related, but we are a fairly low seismic area, and we have demonstrated that the supports can hold up the structural components under seismic loading.

MR. GALLETTI: I think the key issue here is for the supports themselves. The applicant may be able to credit those supports for mitigating a seismic event. But there are other mechanisms in play here that may render that non-safety related piping to fail.

And that seismic support may not provide

the mitigative feature that is necessary to handle that particular failure. So other mitigative features may have to come into play, such as shielding, splash guards, pipe restraints, and other mitigative features would have to also be considered.

And in addition the mitigative features that are already in the plant may in fact not be sufficient to ensure that failure of these non-safety related components would not render a safety system inoperable.

Therefore, regardless of what mitigative feature you do have, you may in fact still need to include that segment of piping.

CHAIRMAN BONACA: Is this issue a generic issue just because of two different plants with really different kinds of issues still to do with two over one, and is NEI involved as a part of this resolution representing the industry?

I mean, is it an open issue for the industry, or is it just specific to the application itself?

MR. GALLETTI: I wish Kris was here. I don't get involved with the NEI discussions.

CHAIRMAN BONACA: This is a plant specific as of now?

MS. THOMPSON: Well, it is on the list of remaining open items with respect to the GALL being issued for the industry, and I believe there was a steering committee meeting last week, and a demonstration meeting a week or two before that when it was raised as one of the items on the list.

MR. GALLETTI: I think it is fair to say that there is certainly generic interest in the industry as to how this issue is going to be handled and resolved, and how it has been handled and resolved.

MR. HALE: There is a list of what we call issues for ongoing dialogue between NEI and the staff, both associated with the SER. Well, not the SER, but the standard review plan, and the GALL, and two over one is one of those.

And to get a better handle on guidance and the approach, and trying to get a little more consistent approach, especially with the older plants.

DR. ROSEN: What is the Turkey Point design basis earthquake? You said it was low seismic?

MR. HALE: Yes.

DR. ROSEN: And what is it?

MS. THOMPSON: It's about .15G if I recall. It is very low.

MR. HALE: Yes, .15 horizonal, and .1 vertical.

MS. THOMPSON: We are the lowest in the country.

DR. ROSEN: I don't think so.

MS. THOMPSON: Well, I thought we were. Perhaps not.

MR. GALLETTI: So again as you have heard, we are going to have some additional dialogue with the applicant next week to try to better understand their resolution or proposed resolution to that issue.

MR. THOMAS: As I mentioned before, DSSA is responsible for the review of the scoping and screening, and the results of that review in accordance with the applicable regulations.

Basically, what I have before you is just a slide that captures the scope of our review. Our review -- let me say that the review team that I spoke of consists of about 11 individuals, each with their specific areas of specialty.

Now, I spoke before of the team if you will, and let me add that that review process could get complicated because of the addition of new team members, and utilization of staff for various reviews outside of the license renewal review.

But to the extent that we can, we try to keep some consistency across our applications so that there is consistency in the focus on the issues that are addressed.

For example, the fire protection, or the seismic two over one issue. In this review of the Turkey Point application, certainly it was much less of a navigational challenge than the Hatch. And when I heard Raj say that the review resulted in a number of REIs following some interaction with -- several interactions with the licensee.

And it turned out that a lot of the REIs were just a matter of providing clarification. But basically the licensee took the approach of -- took a system approach and a structural approach if you will also, where systems, and compliments, and the related structures were decompartmentalized if you will.

So it was not a very complicated application to follow. It was a matter of looking at a particular system, and getting a complete listing of all the SSEs within that system, including the commodities.

Now, there are some areas -- and a lot of our REIs have to do with clarification or with regard to some other commodity groups. For example, the

review of the office building, for example, and the containment building, there were REIs that had to do with fire retardant components, fire doors, et cetera, et cetera, and fire barriers.

Those types of complimentaries resided under another section, titled, "Fire Rated Assemblies." So in terms of the navigation of a few, it wasn't very involved after we got some clarification from the licensee.

But basically we used the FSAR, the tech specs, and any licensing correspondence as stated earlier by the licensee, and specifically there were design drawings that accompanied the application.

And the design drawings highlighted and the -- well, let me back up a second. The FSAR and the application, there were high points between those, and so it was not from that standpoint. It was a fairly simple review.

But the design drawings highlighted the extent of the systems to the system boundaries, and they were easily read. We really had no major problems in the review process.

As you can see, we basically reviewed -- well, these just highlighted the major systems that were reviewed by the DSSA, and reviewed the reactor

coolant systems, and the engineering safety feature systems, and what is presented here is just some examples of the systems.

But what I have given you is a count of the number of systems involved in the review, and all together there was 43 systems, and I want to say -- no, I'm sorry, 37 systems and 16 structures, separate structural facilities, that was reviewed.

Raj mentioned that we had something on the order of 300 REIs, and then that is whittled down to like 200, and I think we ended up with maybe about 30 of those REIs.

So as you can see altogether, initially I think we had something on the order of 60 REIs. So half of our REIs were more of the clarification concern than anything else.

And in the end we really had no major open items. Still to come though is how the seismic total one item is resolved, and I heard a question before about what sort of additional burden that will impose on the staff.

As was mentioned before, because they took a spacial approach if you will, and because they took a functional approach, which is as we have seen in previous reviews, like with the Oconee and Talbot

plants, if the approaches to identify an area, and identify the safety related systems in that area, and identify the non-safety related systems that are in that area that are believed to be within the proximity, that if there is a failure, will infringe upon the functional capability of the safety related system, then that I think would not be much of a burden.

But the burden of a follow-on review then would be much reduced, and that is all that I have.

MR. AULUCK: Any questions?

CHAIRMAN BONACA: Thank you. If we have any questions, we will raise them as we move through the systems.

MR. AULUCK: Next is Meena Khanna.

MS. KHANNA: Good morning. My name is Meena Khanna, and I work in the Division of Engineering, Materials and Chemical Engineering Branch. Basically I will be presenting the first three sections of the Turkey Point license renewal application.

I would like to start by just telling you basically the staff and GE that we have got two reviews that we conduct; one is on the systems, and with the system review, what we do is we just try to

verify that the applicant has adequately identified all the aging effects, and has adequately identified the aging management programs to manage these aging effects.

The second review is of the aging management programs, and Ms. Keim will discuss that later in Section 3.8. She will discuss the process that we actually go through in reviewing the aging management programs.

And I will go ahead and start with the common aging management programs. Section 3.1 of the application included a description of the common aging management programs.

Again, Ms. Keim will also address the common aging management programs in Section 3.8. However, the three that we reviewed under common aging management programs include the chemistry control program, and the FPL quality assurance program, and the systems and structures monitoring program. We will go into details again in Section 3.8.

CHAIRMAN BONACA: Let me try to understand this. This is part of what they missed in the application as existing aging management programs.

MS. KHANNA: Exactly.

CHAIRMAN BONACA: And you are pulling out

these three right now in this presentation.

MS. KHANNA: Right. Let me just say that when we call them a common aging management program, that is basically an aging management program that is going to apply to two or more systems or components.

CHAIRMAN BONACA: I see.

MS. KHANNA: So these three have actually been identified as those aging management programs that will apply --

CHAIRMAN BONACA: I understand.

MS. KHANNA: And there were no open items that were found with either one of these three common aging management programs. However, there is one confirmatory action item, and that is in regards to the quality assurance program, and that is just a minor SER supplement that is needed and Andrea will discuss that later.

Now, let's go to Section 3.2, the reactor coolant system. I would like to acknowledge Alan Hiser. He was actually the lead for the reactor coolant system. I am going to go ahead and present it for him.

The components of the reactor coolant systems include the reactor coolant piping, Class 1 and non-Class 1 components; the regenerative and

excess letdown heat exchangers, pressurizers, reactor vessels, reactor vessel internals, reactor coolant pumps, and steam generators.

CHAIRMAN BONACA: Now, are these all existing programs? I don't think so. There are some reactor vessel internal inspections which are new problems, right?

MS. KHANNA: These are actually the systems. The aging management programs, they are handled in Section 3.8, and there is a reactor vessel internals inspection there, and that will be covered later.

Notes of interest include Florida Power and Lights AMR results were compared to the following topical reports. The first one was WCAP-14574 on pressurizers; and WCAP-14575 on piping; WCAP-14577 on reactor vessel internals.

However, the staff noted that the FPL did not incorporate the topical report results by reference. And I would note that I believe there was a question that I believe, Mr. Bonaca, you had asked earlier about the reactor vessel internals WCAP.

CHAIRMAN BONACA: Yes.

MS. KHANNA: And jus to clear it up, we did have REIs that went out on the reactor vessel

internals action items, and the applicant adequately identified them. We are satisfied with all their responses and that was -- and they were noted, all the findings were noted in our response, or in their response.

CHAIRMAN BONACA: Well, my question was regarding the pressurizer.

MS. KHANNA: Okay. Right.

CHAIRMAN BONACA: And there the SER finds at least four of the applicant action items -- well, I mean, the pressurizer, while topical, has maybe 10 applicant action items.

MS. KHANNA: Right.

CHAIRMAN BONACA: And the SER identifies four as being applicable to Florida.

MS. KHANNA: Right, to Turkey Point.

CHAIRMAN BONACA: To Turkey Point, and I was left searching around for where the others are being discussed in the application. Well, not in the application, but in the SER.

MS. KHANNA: In the SER, right.

CHAIRMAN BONACA: And where they are discussed is in the REI response on the reactor cooling system.

CHAIRMAN BONACA: Well, some of them are

considered non-applicable, and I don't understand why they were not applicable in all cases.

MS. KHANNA: Well, we have got Alan Hiser here. Alan, would you like to talk on that? We are talking about the pressurizers, the topical report on the pressurizers. There were four action items that were not addressed.

MR. AULUCK: There were four addressed and six were not addressed and the question is whether they were applicable at Turkey Point.

CHAIRMAN BONACA: Well, I was left with searching around for those that were not addressed, and having to trust the judgment that says these are not applicable.

DR. FORD: And with the exact equivalent question for the internals, too. There are 11 action items in the internals program, and that is exactly the same question.

CHAIRMAN BONACA: That's right. And some of those in the report for the pressurizer were convincing. Now suddenly they disappear for Turkey Point, and the statement says these are not applicable. So I just don't understand. I couldn't find --

MR. HISER: I will have to get you an

answer on this. The lead reviewer on that is not here right now.

MR. HALE: If I could offer at least from our perspective that it's not that the applicant action items were not applicable. The applicant action items were already addressed in the application, and the reviewer who did the pressurizer review recognized, and only asked us those that apparently weren't covered in the application.

But we have addressed all of the applicant action items either in the LRA -- I mean, it wasn't because we had the list. It's just that we had already covered the applicant action item in the aging management review that we had performed.

I can give you an example of one. It is Applicant Action Item 3.2.2.1-2, which was covering commitments regarding the boric acid waste surveillance program.

Well, we had already covered that in our table, and we had already covered that in Appendix B with the boric acid waste surveillance program. So, in the case of the pressurizer, at least in the interface that we had with the staff reviewer, he recognizes that some of that stuff was already picked up in the application.

So he only asked us those REIs, those applicant action items that weren't covered or weren't readily identifiable. Now, in the case of the internals, we got a letter with all of the applicant action items listed, and requested a response from us.

CHAIRMAN BONACA: Okay. That is probably the explanation for that. The text was not clear. The text says that during the staff review of the pressurizers, the staff determined that four of the applicant action items summarized in the staff SER and WCAP were applicable to the AMR for Turkey Point, and the staff requested an explanation on this. And that's why the others are not so.

MR. HALE: Right. They may have concluded that because it was already in the application.

CHAIRMAN BONACA: It is just simply left me with no answers to the others, and the answer may be right in the application. I agree with that, but it wasn't clear.

MR. HISER: I believe in the internals topical report that we did list the 11 action items and the specific responses.

DR. FORD: Okay. And were the responses to those quantitative, because in that WCAP-14574, the reactor vessel internal one, it is continually

referenced to the ASME 11 code as to what the frequency of the inspections would be.

It is a beautiful criteria on what an aging management program should specify with data, but in the response to the REIs on Turkey Point were the response quantitative? Do you understand my question?

MR. HISER: Yes. I believe in some cases they were, in terms of the inspection program activities. In some areas the details on the programs are still being developed through industry, and MRP programs, and those kinds of activities.

So the quanitativeness isn't really there at this point.

DR. FORD: Now, are we fairly sure as an industry that we are collecting the relevant data?

MR. HISER: We are monitoring everything that is going on with the industry. We have periodic public meetings with the MRP to discuss the status of their program, and what their plans are.

At this point the programs are proceeding --

DR. FORD: In a timely manner?

MR. HISER: Yes, in a timely manner.

DR. FORD: Well, it wasn't a statement. It was a question.

MR. HISER: Yes. At this point, yes. We are satisfied with the scope, and status, and plans in the program.

DR. FORD: And do we know how to define timely in relation to the effect on some risk informed basis, like a delta-LOCA? If we have a failure event occurring, which of the ones out of that list of components are going to give you a real heartache?

And are we in the expected time period going to get the data to come up with what renewed frequency should be for inspection?

MR. HISER: Well, I think that of the items that are listed there that the main activity is in the reactor vessel internals area, and the industry program timeliness is tied to plants entering the license renewal period. And the plants having programs in place as they enter into that period.

MR. ELLIOT: This is Barry Elliot. The reactor vessel's internal program, there are two parts to the program. There is the research part of the program, and then there is the inspection part of the program.

The inspection part of the program is a commitment by them to do inspections of limiting locations in the reactor vessel internals, once during

the first 10 year interval, and the other unit during the second 10 years of the extra period.

So they have to have their research results to meet that schedule, and they will have it to meet that schedule. That is the plan and that is how we have written up the program.

DR. FORD: But these in your intervals, Barry, are based on --

MR. ELLIOT: Well, you asked whether or not it will be in time. The time needed for the data is in year 41 of the operating cycle of the plant operation. That is the program.

They will inspect the first unit in year 41 according to whatever the research results are from the research program. The second unit will get inspected in the next 10 years of the operating period.

It will use the results of the research program, plus whatever the results are from the first 10 year first unit. Now, that is the plan today.

When we get research results, and if it shows that there is an immediate problem, then we won't do it in year 41. We might have to do it in 2002 or 2003. But that is the current plan.

DR. FORD: I can understand the reason,

that you have to have a date to go into this.

MR. ELLIOT: Right.

DR. FORD: You can't just say we will wait.

MR. ELLIOT: Right.

DR. FORD: You have to draw a line in the stand if you like.

MR. ELLIOT: Right.

DR. FORD: But what concerns me is that there is surely enough data in the technical community right now to say -- and especially for the older plants with the higher fluence level, that a 10 year period is nowhere adequate enough.

MR. ELLIOT: Well, that is going to be the results of the research programs, and to look at all the data, and to come up with an answer for that question. You have to look at everything, and that is one of the issues that I am sure the program will look at.

DR. FORD: Obviously we are getting into a great big technical argument of, yes, you do; and, no, you don't, but in terms of delta-LOCA as a parameter to prioritize where you should be putting your money to come up with this data in a timely fashion, have they gone through that sort of analysis?

MR. HISER: I don't think it has been looked at in a risk-informed sort of mode. It has been more of a deterministic mode, where aging mechanisms, and combinations of materials and environments have been identified as potentially requiring additional attention.

And the industry programs are looking at the parameters that would be involved and determining when and under what conditions the mechanisms could become important. And then developing inspection tools that would be effective in managing those mechanisms for those materials for these components.

DR. FORD: I guess that this goes way beyond Turkey Point, Mario, and specifically it does relate to Lochbaum's assertion that relicensing programs and the data from which they are based are not adequate.

CHAIRMAN BONACA: Well, I believe that the examples that Lochbaum made, 8 or 10 were related to active components that wouldn't really even fall in the scope of relicensing if I understand, if I remember that.

And again, however, I don't think that license renewal insofar as the process we are implementing there is to review the life cycle

management, and the procedures is going to have all the details of what needs to be done in the program right now.

What we need to have is a commitment by the licensee that he recognizes the issue, and he has prepared himself to deal with the issue, and that through the corrective action program he has, he has performed those actions that are considered by the requirements to be appropriate.

And that will be different when we get there than they are today most likely. I mean, just because we will know about it. Now, I think the only place where we can have some discomfort is where some issues that may not ever be experienced, and then make them up.

But again that will have to be dealt with at that time, and will be part of the core licensing interaction within the staff and the NRC, and not necessarily of the license renewal, because that would become part of the license renewal.

MR. HISER: And we have tried in particular in the reactor vessel internals area to try to crystal ball some of the issues that may come up, and that we don't think are an issue for 40 years, but could with fluences increasing, and exposure times

increasing, they may become important.

And right now the data for relevant conditions isn't sufficient to tell us that we definitely would have a problem, or we definitely do not have a problem. So the industry is trying to collect the data that would help them to determine the potential problem, and then propose appropriate management schemes.

DR. FORD: I have another question, and I don't know who to ask, but on steam generators, we have been talking about future events. But there have been problems, and I think it was in one of the WCAP documents that was saying that we were safe from many of the cracking problems because we monitor the oxygen and the chloride contents, et cetera.

Well, it is not really oxygen that you are interested in. It is corrosion potential, and you can high corrosion potential from copper from condensers on the secondary side, and at Indian Point we did have cracking of the vessel because of copper coming from the condensers.

Now, does that come into these programs and into these GE management programs?

MS. KHANNA: There is a steam generator integrity program that adequately addresses that.

DR. FORD: Then it is just the steam generators that are on this slide then?

MR. HISER: Right. Steam generators is one of the components of the RCS. However, there is an aging management program that specifically is called a steam generator integrity program, and that adequately identifies that.

DR. FORD: That specific item is watched for copper tube flux within the --

MS. KHANNA: Could you guys answer that?

MR. HISER: Well, for one thing, when we replaced the steam generators, we replaced all the condenser tubing with titanium. All of our feed water heaters are stainless tube now. So we minimize copper as an additional preventive action.

And we do sludge lancing and all that stuff related to ensuring tube integrity is incorporated into the steam generator integrity programming, as well as our current testing of the tubes.

And you see that both in your chemistry control program and in the steam generator integrity program.

MS. KHANNA: Okay. Great. I will go back to the review. The second note of interest that we

noted for the reactor coolant system is that the reactor vessel had penetration nozzle cracking was managed by the reactor vessel had the 600 penetration inspection program.

There will be a presentation made on the Ally 600 penetration inspection program. There was an open issue also identified on CRDMs, and that will picked up in a later discussion in Section 3.8. So basically there were no open items in regards to the reactor core systems. We will go to Section 3.3, engineering safety features. The ESF systems include emergency containment cooling systems, the containment spray, the containment isolation, the safety injection, residual heat removal, emergency containment filtration, and containment post-accident monitoring and control.

The staff found that the applicant adequately addressed all the aging effects for each of the components and the systems of the ESF, and also we also found that the aging management programs to be appropriately addressed for each of those aging effects as well.

So we also found no aging -- I'm sorry, no open items with the ESF.

CHAIRMAN BONACA: The containment

monitoring and radiation protection system, that does not have an aging management program for it?

MS. KHANNA: Right. There were no aging effects found to require an aging management program.

CHAIRMAN BONACA: And could you explain more on that? So there were no aging effects found for that?

MS. KHANNA: Right. The applicant didn't identify any aging effects, and we found -- well, what we do is we use the GALL report and we compare the results. And if we found that they had adequately identified the aging effects --

CHAIRMAN BONACA: Well, this was a question from John Barton. What you are saying is that it was in scope, but you found no aging effects that would justify a management program?

MS. KHANNA: Right, that's correct.

CHAIRMAN BONACA: John thought that they were not in scope, and they are in scope. All right.

MS. KHANNA: But they were identified as being in scope, and so we went ahead and reviewed it, and it is in scope.

CHAIRMAN BONACA: And there was another question here from Mr. Barton regarding the MSIV. There are two different designs for the reserve tanks

that are used to operate the MSIVs, and on Unit 4 there are reserve tanks that are used or they are simply accumulated that are used.

And those are in the scope of license renewal. For Unit 3, there are bottles. I mean, bottles that are used for the safety function.

MR. HALE: That's right.

CHAIRMAN BONACA: So if I understand it, you do have reserve tanks that are used for normal operation?

MR. HALE: The MSIV normal operation is just basically instrument error. What these are, the air accumulators on Unit 4 and the nitrogen bottles on Unit 3, are under certain accident scenarios, if you assume leakage of the actuator, and you have an equal DP, or a no DP across the MSIVs, it could come back open again.

So we provided a back up source to instrument error for the MSIVs. Now, with regards to --

CHAIRMAN BONACA: Okay. For Unit 4, they are treated different?

MR. HALE: They are different. It was kind of a decision that was made for Unit 4 to go with something that didn't need to be replaced

periodically. The bottles are monitored for pressure and they are replaced periodically.

Whereas, the air accumulators on Unit 4 are just an in-line tank. So what was the question?

CHAIRMAN BONACA: The question is that you do have the instrument accumulative tanks for Unit 4 are in fact subject to an AMR.

MR. HALE: Right.

CHAIRMAN BONACA: While for Unit 3, you took the position that the bottles are not long term, and they are replaced.

MR. HALE: Right. They are replaced on a -- the pressure is monitored, and they are replaced periodically.

CHAIRMAN BONACA: And how is it monitored?

MR. HALE: Actually, there is tech spec requirements that they be maintained at a certain pressure level, and if it drops below that for whatever reasons -- you know, testing, leakage, whatever it might be -- they are monitored and replaced.

So we considered those replaced periodically and as such didn't require an aging management review.

CHAIRMAN BONACA: And the monitoring is a

periodic monitoring with tech specs?

MR. HALE: Yes. We are required to maintain a certain pressure.

CHAIRMAN BONACA: Okay. All right.

DR. ROSEN: When you say periodic monitoring, what do you mean?

MR. HALE: Whatever the requirement is, but they are stipulated that we have to maintain a certain amount.

DR. ROSEN: Well, does somebody go out and look at these bottles every four hours or something like that?

MR. HALE: There is pressure indication.

DR. ROSEN: In the control room?

CHAIRMAN BONACA: In the control room, no.

MS. THOMPSON: I don't know if it is in the control room.

MR. HALE: I would have to look at the drawings.

MS. THOMPSON: They are monitored relatively frequently, and we are not talking about once every 18 months or something. They are on regular operator rounds.

CHAIRMAN BONACA: All right.

MR. HALE: The same question was raised in

our REIs and we got a response to that as well, which summarizes I think some of the specifics that you are asking for.

CHAIRMAN BONACA: All right.

MR. AULUCK: Next we will go to the auxiliary systems, and James Davis will cover that.

MR. DAVIS: There are 15 systems on the auxiliary systems that we looked at. We thought that the application was very good this time. The best one that I have seen so far.

We had a number of REIs, and they were fairly simple. They basically were that the words didn't match the tables, and things like that, and we just cleared those up very quickly. There were no real surprises. So we ended up with no open items.

Are there any questions on these systems? If not, on steam and power conversion systems, these included the main steam and turbine generators, and feedwater and blowdown, and the auxiliary feedwater and condensate storage.

And there were no show stoppers here. They were just conditional REIs, but they basically were to just clarify the text and the tables again. And there are no open items here.

CHAIRMAN BONACA: I would like to go back

just a second. I had a question about that there is a discussion in the SER regarding inaccessible locations, the pressurizer, the pressure vessel, and steam generators, and vessel internals.

And I would like to have a better understanding of how that is being dealt with in inaccessible locations in the pressurizer, the pressure vessel internals, and steam generators.

MR. AULUCK: In the inaccessible areas, they go look at the accessible areas for possible clues, and then follow it up in the inaccessible areas.

CHAIRMAN BONACA: Well, assume that you have a clue and it may be something that is in an inaccessible area.

MR. HALE: Well, I think we saw quite disparity in how previous applicants have addressed this. We have had some applicants say that there are no inaccessible areas in the power plant, and with the right amount of money or whatever, you can always make something accessible.

We took the perspective that with inaccessible areas, if something is not readily visible, and something where you would have to take extraordinary measures in order to see things.

Certainly there are observation techniques that you can utilize, such as t.v. cameras on -- you now, remote, very tiny t.v. cameras. In fact, we are going to utilize some of that in our head penetration visual inspection.

So I think that the aging management review pretty much stands on its own. The programs that we credit, if we see something, then we would be obligated to go look at these other areas if it was applicable. But in terms of how we define inaccessible --

CHAIRMAN BONACA: I wasn't in effect asking about your obligation. Of course, you do have to fill a commitment. I would reach the same judgment that any inaccessible area can be made accessible if you have to, and if you have indications.

MR. HALE: Right.

CHAIRMAN BONACA: One thing that comes through the application and the SER are some questions regarding looking at operator experience. And there are issues that may prompt you to say that I don't have any problem, but there may be something.

You have been looking also at other power plants in the Westinghouse Owners Group, right?

MR. HALE: Right. Yes. As part of each

one of those GTRs that were mentioned, and not just the ones were submitted, but also the other ones that we used as source information, it was basically an integrated look at all the experience for those particular components on the Westinghouse plants.

So we did that, and we also have our sister plants, or our other plants up at St. Lucie. So we have got a broad database to draw on, and we did an extensive review of our operating experience as well.

As you have seen, we actually used experience which may have happened at St. Lucie and Turkey Point.

CHAIRMAN BONACA: Okay. Thank you. That's all I needed.

MR. MUNSON: I am Cliff Munson and I am in the civil engineering group. We reviewed the structures and structural component section. The applicant divided it into two groups. The first group was containment, and then the second group was other structures.

And they further divided these two groups into commodities and environments. So they have steel in air, and steel in fluid, concrete, and we looked at the aging effects that were identified by the

applicant to make sure that they included all the applicable aging effects.

The three aging effects that they identified for the steel and concrete groups were loss of material, cracking, and change of material properties.

And for the containment structure, post-tensioning, they also identified loss of pre-stress. For the miscellaneous structure component, they identified loss of seal, as well as loss of material.

We didn't have any open items. I have reviewed all of the applications up to date, and this was very easy to follow. We were able to find pretty much everything we looked for, and they had -- I think they thoroughly covered the aging mechanisms that would lead to these aging effects.

And I thought it was an excellent job that they did.

CHAIRMAN BONACA: I have a question regarding the in-take structure. There is no management, aging management of this structure, and there are a lot of systems or components attached to the structure that in fact do have an aging management program.

And I really wondered why -- and also John